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FOUNDATION YEARS JOURNAL 2017

Volume 11

Foundation years journal

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FOUNDATION YEARS JOURNAL 2017

Volume 11

Foundation years journal

Foundation Years Journal is the ONLY journal for Foundation Years, doctors and educators, specifically written according to the MMC curriculum. It focuses on one or two medical specialties per month and each issue delivers practical and informative articles tailored to the needs of junior doctors. The Journal closely follows the Foundation Years syllabus to provide the best educational value for junior doctors. In addition to good clinical and acute care articles, assessment questions give junior doctors the chance to gauge their learning. Each issue provides comprehensive clinical cases for trainees as well as practical teaching assessments for educators. Readers will benefit from:

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RECORDING CONSULTATIONS

R Wadhwa, M Peter

Abstract

Introduction

Smartphones and similar technology are increasingly being used by clinicians in their daily practice. One use of this technology is audio and/or visual recording, and it can be used to record medical consultations. The aim of this study was to assess awareness amongst newly qualified doctors on this issue.

Method

A short survey comprising 10 questions was used. The survey was emailed to all foundation year 1 doctors in the Hull and East Yorkshire NHS region.

Results

The survey achieved a 16% response rate. 71% of doctors knew that a patient could record a consultation with permission, however only 29% knew that patients could record a consultation without informing the doctor. 92% were aware that a doctor could record a consultation with the patient's permission, but only 25% were aware that there are specific circumstances that allow for recordings to be made without informing the patient.

Only 63% of doctors knew that a recording is admissible in GMC proceedings. Only 33% knew that doctors do not have to be provided with a copy of a recorded consultation, but 83% knew that they must provide a patient with a copy of the recording.

Three opinion questions concluded the survey, where it was found that 64% of doctors would continue the consultation if a patient wanted to record it, 92% felt they had not had adequate training on this issue, and 96% would welcome further training on medico-legal issues such as recording consultations.

Conclusion

This survey is evidence that a large proportion of junior doctors are not aware of the legal aspects of recording consultations, and would welcome further training on this issue. It highlights that action needs to be taken to ensure our new and current doctors are informed and confident when faced with such a situation as a patient requesting to record their consultation.

Introduction

Smartphones and similar technology has been shown to change and perhaps improve the way clinicians practice medicine. A previous study has shown that 94.4% of doctors use their smartphones whilst at work, for a multitude of purposes including looking up drug doses and aiding in diagnoses (1).

A 2013 study found that while on call, 50% of interns agreed that medical applications on smartphones aids diagnoses, 43% agree it helped in interpreting laboratory values, 51.7% agreed it helped in dosing of medication and 55% agreed it was of assistance in medical emergency protocols (2).

Another study aimed at smartphone usage by urology trainees found that 100% of the trainees that responded owned a smartphone, and 77% reported downloading urology applications. (3) The use of smartphones and similar based mobile technology has grown exponentially in the last decade. (1,2,3)

With numerous search engines, cloud based applications, and online resources it can be predicted that the reliance of technology by health care professionals will only increase. The development of wearable technology such as the Apple Watch® and Google Glass® being developed their use in day to day clinical practice is also likely to increase and change the way we practice medicine. There are many benefits to the incorporation of technology into practice. It is more environmentally friendly, up to date advice is easily accessible, record keeping is better, and doctor's notes could potentially be more legible!

However as well as the convenience and advances that it creates, these new forms of technology have also resulted in new areas of learning and understanding for health care professionals. One area that is intermittently under scrutiny, is the use of smartphones or similar products to record medical consultations and how such recordings can be used. (4)

In the United Kingdom, the foundation year 1 training post is the first position a medical undergraduate undertakes upon starting their medical career. (5) It is hypothesized that the inherent knowledge with regards to the use and application of such recorded consultations are poor. We decided to test this hypothesis with an electronically based survey.

It is becoming increasingly common for patients to ask to record a consultation, whether this is purely audio, or an audio-visual recording. What is potentially worrying for many doctors is how easily a patient could record a consultation without the doctor ever realizing it. On the other hand, if doctors were to record consultations, it would potentially make them more "accountable" as physicians for their behaviour and actions.

This is the argument behind police body cameras, which are used in the United Kingdom and have become more common in the rest of the world also. (6) As a cohort of year one foundation trainees, we were interested in examining if patients and doctors have the right to make recordings, who has the right to such recordings, and investigating what Foundation Year 1 doctors knew about the issue.

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Method

A short online questionnaire was designed using information obtained from the Medical Protection Society, the Medical Defence Union and the General Medical Council. (4,7,8,9) These organisations have provided advice both as published guidance and by means of an advice article on this topic.

The MPS has a very useful, well-structured document that details the legality of recorded consultations, including both those made with permission and those made covertly. A pilot questionnaire was then sampled on a test population of five foundation year 1 doctors and the questionnaire modified accordingly from the feedback.

An electronically based questionnaire was created and sent to a target population of 150 junior doctors. The survey was sent out in the final 2 months of the FY1 year with the assumption that by this stage all the FY1s participating would have completed all their mandatory training and have completed most of their necessary rotations.

The full questionnaire can be found in Appendix 1.

The aim was to assess junior doctor's knowledge about the legality of recording consultations, as well as doctor and patient's rights with recording consultations.

Setting

The survey was electronically distributed to all current FY1 doctors in the Hull and East Yorkshire NHS region via the foundation programme coordinators at each hospital.

Design

Of the 10 questions, the first 7 were knowledge based, and the last 3 were personal opinion questions. The survey was multiple choice in format, and only one reply per junior doctor was allowed.

Results

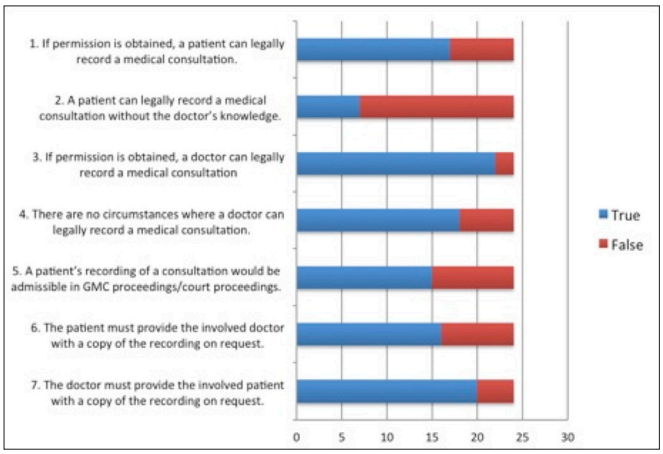
The questionnaire was designed to test various aspects of doctor's knowledge about recording medical consultations. The main emphasis was regarding the legality of recording consultations, and how this changes depending on who is recording the consultation and between the hospitals in Hull, York, Scarborough, Scunthorpe and Grimsby, approximately 150 doctors were contacted by their respective Foundation Programme Administrators. I received a response percentage of 16% (24 survey responses); mostly from Scarborough hospital based junior doctors.

Question	Correct answer	% answered correctly
If permission is obtained, a patient can legally record a medical consultation.	True	71%
A patient can legally record a medical consultation without the doctor's knowledge.	True	29%
If permission is obtained, a doctor can legally record a medical consultation	True	92%
There are no circumstances where a doctor can legally record a consultation without the patient's knowledge.	False	25%
A patient's recording of a consultation would be admissible in GMC proceedings/court proceedings.	True	63%
The patient must provide the involved doctor with a copy of the recording on request.	False	33%
The doctor must provide the involved patient with a copy of the recording on request.	True	83%

Table 1 outlines each question, the correct answer and the percentage of respondents who answered correctly.

How would you respond to a patient's request to record your consultation?	36% would refuse to continue	64% would continue consultation
Do you feel you have the appropriate training to deal with recording of medical consultations in your daily practice?	Yes - 8%	No - 92%
Should doctors receive more training on medico-legal issues such as recording medical consultations?	Yes - 96%	No - 4%

Table 2 outlines the three opinion based questions of the survey, and the respondents answers as percentages.



Graph 1 demonstrates the first 7 questions of the survey and the number of answers by the respondents

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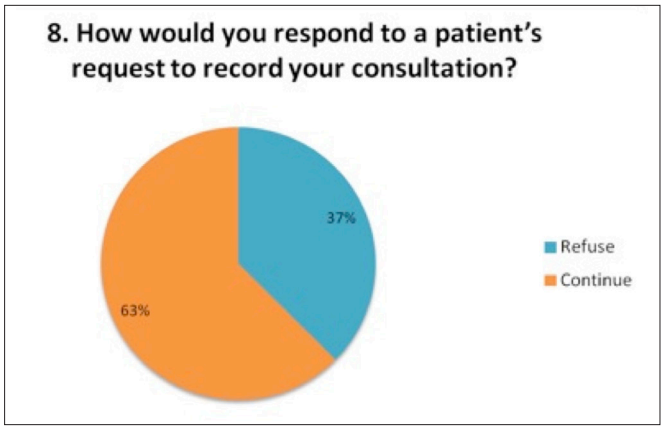
The responses to the first two questions, which were both true, demonstrate that the majority of doctors knew that, with consent, a patient could record the consultation. However, and likely because this seems like an invasion of privacy, the vast majority were not aware that a patient could legally record the consultation covertly.

Given that the overwhelming majority of surveyed doctors correctly answered that a doctor can legally record a consultation with permission, it appears that most doctors are aware of this. However, question 4 demonstrates that most doctors were unaware that there are only specific circumstances where a doctor could covertly record a consultation. This is the case when "only where there is no other way of obtaining information which is necessary to investigate or prosecute a serious crime or to protect someone from serious harm." (9)

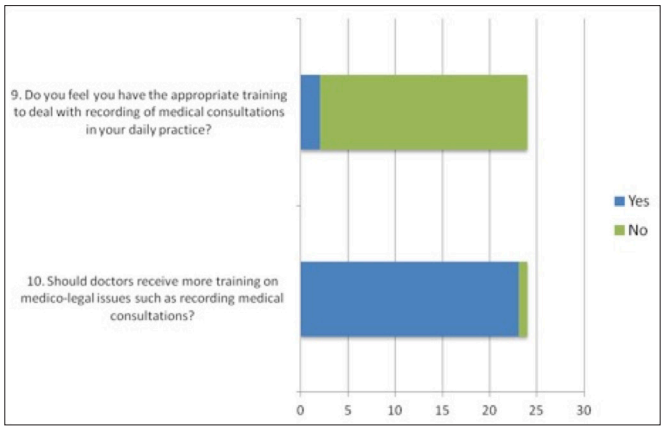
The results of question 5 were striking, as the majority of surveyed doctors did not know that a recording would be admissible in court. This was a striking result because this is the situation where a medical recording can have the most impact on a doctor's career. We feel that this is a very important fact that doctors need to be aware of.

Questions 6 and 7 point out the inequality of rights over medical recordings. As it is primarily patient details, the patient has a right to a copy of a recording, but the doctor cannot request a copy of a patient's recording that they have made. Most doctors surveyed were not aware that the patient does not have to provide a doctor with a copy of the recording.

Graph 2 demonstrates the 8th question of the survey, and the percentage of respondents that would refuse or continue the consultation.



Graph 3 demonstrates the last two questions of the survey, and the number of respondents that answered yes or no.



The most striking result from the survey was the need for better training or resources for doctors to deal with such situations. The inherent level of knowledge was poor and most participants were not aware of the legal implications or what recourse is appropriate in those situations.

The overwhelming majority of doctors felt they did not have the appropriate training to deal with recording of medical consultations, and that doctors should have more medico-legal training. Interestingly, when faced with a scenario where a patient wanted to record a consultation, most doctors would continue the consultation, but a significant number would refuse to continue.

An interesting point of further study would be to re-audit this question on continuing the consultation after teaching the doctors the answers to the knowledge questions. With recording of consultations becoming a more common occurrence, we feel it highlights a need to address this educational shortfall. We believe this could be accomplished by means of local teaching from experts, and that a short training session could be incorporated into the regular teaching that junior doctors receive.

This would provide a situation where doctors would get the correct and most up to date information on the issue, and provide an opportunity for doctors to participate in a question and answer session with an individual who is educated on the topic.

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Conclusion

In summary, even with the somewhat limited response to the survey, many conclusions can be drawn. The knowledge base of newly graduated doctors on the issue of recording consultations is poor. Foundation year one doctors are not aware of the intricate legal aspects surrounding this issue. This is a worrying fact, as smartphones and similar technology are becoming increasingly more common in the workplace.

Emerging technology will make consultation recording easier than ever, and doctors need to be aware of their limited rights. This lack of current awareness is likely due in major part to an absence of training for new and current doctors. A short seminar held by a speaker educated in the current medico-legal aspects of the issue would be both helpful and graciously received. Technology is becoming invariably ingrained into medical practice, and it is the responsibility of physicians to stay informed and adapt to the changing landscape.

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CONFIDENTIALITY IN PRIMARY CARE - AN OBSERVATIONAL ANALYSIS ON A COMMON SCENARIO

H Waqar

The NHS Confidentiality Policy states that "All employees working in the NHS are bound by a legal duty to protect personal information they may come into contact with during the course of their work."(1) This policy elaborates on this by stating that information pertaining to a person is to be safeguarded as per the Data Protection Act 1998.

Health professionals are in a unique position with regards to confidentiality as they are bound by law to protect the information of patients and may have to do so from members of the patient's own family.

Whilst on placement as a medical student in my GP block, I pondered over the dilemma faced by many health professionals working within the NHS with regards to confidentiality. For example, a common scenario that occurs on an almost daily occurrence; telephone conversations.

For instance, staff regularly engage in phone calls to patients where they divulge information regarding test results or requesting that patients visit the surgery for an appointment. The patient's name, address and date of birth are confirmed before any information is transferred, which provides adequate security of patient information.

As an example, consider a scenario where a GP attempted to contact a patient urgently to discuss results of a blood test. However, as the patient did not answer the phone a message was left on the patient's mobile phone requesting them to phone the surgery back as soon as possible, as the results of the blood test suggest that they have a heritable condition. In this case, the heritable condition has a profound effect on the quality of life of the patient's children. This message could be accessed by the patient's children who do not know that the parent has had any blood tests and the children are registered patients at the same GP surgery.

In this scenario, the message left implied that the results of a genetic test had come back positive and that the patient needed to urgently come in to the GP surgery to discuss these results.

This scenario raises some important social, ethical and legal considerations, each of which I will consider in turn. The ideal conversation would have entailed the doctor requesting that the patient attend the surgery to discuss a recent blood test, as voicemail messages left on phones are not a secure method of communication and hence can be intercepted by other family members. If this message was received by other family members this could affect the relationship of the patient with the rest of their family, due to the test result regarding a hereditary condition.

Therefore, by being more discreet the doctor could have protected the patient's privacy, but still tell the patient enough information to convey what the doctor wanted to express. The ethical aspect is rather interesting, the patient is having a test to diagnose a genetic condition which can possibly have an impact on their children, however the patient has not consented to their family having any information about this test.

The diagnosis of a genetic condition can seriously affect the health of the patient's children, however due to the duty of confidentiality which is incumbent upon all doctors, this information cannot be shared with anyone unless explicit consent is given. In this case, if the patient was to respond to the message by declining that this information was shared with anyone, this would lead to a very challenging situation.

Legally the doctor cannot disclose any personal information about this patient without their consent unless the information is in the public interest.(2) GMC guidance on this topic states that a doctor in this situation should balance a duty of keeping care of a patient as their first priority with the duty of protecting others from harm. In this case, the balance can be very difficult, as the doctor is aware that by not revealing the results of the test to the patient's children that they could be withholding information that could have a tremendous impact on their lives.

On reflection, I feel that this has affected my willingness regarding how much information to disclose about patients over the phone. However, I feel that by being vigilant in this regard, this should prevent disrupting trust between myself and patients which is an integral part of the patient-professional relationship.

I have seen how patients readily convey detailed information about their personal lives to doctors and sometimes become very distressed by how much a particular issue is affecting them. I see that without this trust that patients are hesitant to disclose sensitive information. I felt that new patients would be reticent talking to doctors about their personal problems, however I have seen how some patients can be very open about their difficulties. As a result, I see how breaking confidentiality can have a hugely detrimental impact on the doctor-patient relationship.

More broadly this experience has allowed me to see how the use of new methods of communication such as emails affects the ability of doctors to maintain confidentiality. Whilst these technologies make it easier for health professionals to communicate with each other, each new method brings its own complications. Emails can be seen by third parties and so information can be passed onto people without the patient's consent. The same can be said for telephone conversations and in particular relatives of patients may overhear receptionists relaying information about their ailment, without their permission.

In addition, the concept of breaking confidentiality when the need arises is somewhat uncomfortable for me to understand. Patients trust doctors with sensitive personal information with the understanding that this information will not leave the confines of the consultation room.

CONFIDENTIALITY IN PRIMARY CARE - AN OBSERVATIONAL ANALYSIS ON A COMMON SCENARIO

H Waqar

However, as I mentioned previously, GMC guidance states that doctors are able to break confidentiality if someone else would be greatly affected by them doing otherwise. The evaluation of whether or not to break confidentiality is a very difficult task. I realise the importance of seeking advice from senior clinicians and medical indemnity organisations so that I can make an informed decision.

In conclusion, I understand that confidentiality is a key factor in the doctor-patient relationship and that breakage of confidentiality is very serious decision to take and one that doctors should not make alone. I can see that something as simple as leaving a voicemail for a patient can have a massive impact on a patient's life if done incorrectly. Patients entrust doctors with very sensitive information and that this confers a large responsibility upon doctors to treat this information with care. I realise the importance of the trust that patients place in doctors and the responsibility that this brings.

MCQs For Confidentiality In Primary Care - An Observational Analysis On A Common Scenario

1. Which of the following is a scenario in which confidentiality can be disclosed?

a. When a patient gives consent

b. When it is of overall benefit to a patient who lacks capacity

c. If required by law

d. If it is in the interests of the general public

e. All of the above

(Source: GMC Good Medical practice, Confidentiality: good practice in handling patient information (2017) FAQs: Confidentiality When can I disclose information?)

2. Which of the following is confidential information

a. Name

b. Address

c. Postcode

d. NHS number

e. Date of birth

f. All of the above

(Source NHS Confidentiality policy, updated June 2016)

3. Who is the person who has overall responsibility for the protection of confidential information in a NHS Trust

a. Named consultant

b. Any doctor involved in patient's care

c. Any health professional involved in patient's care

d. Caldicott Guradian

(Source: Good medical practice,Confidentiality: good practice in handling patient information (2017) Endnotes)

Answers

1. E **2. F** **3. D**

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FEBRILE ENCEPHALOPATHY IN OLDER PEOPLE

M Asad, M Vassallo

Abstract

Encephalitis is the inflammation of brain parenchyma and a number of viral infections can cause it, Herpes Simplex Virus being the most common of all the viral encephalitides. Patients with herpes simplex encephalitis may have a prodrome of malaise, fever, headache, and nausea, followed by onset of an encephalopathy which is characterised by fever, lethargy, confusion, and delirium. It is associated with a high mortality of up to 70%, if left untreated, and therefore requires high clinical suspicion, early diagnosis and urgent treatment. More than half of the untreated survivors have severe neurological deficits. Among treated patients, the mortality rate is 20%.

Case History

An 84 year old lady was admitted with increasing confusion on the background of a recent cold and two weeks of a dry cough. Over the last couple of days, she became confused and developed decreased oral intake. She became drowsy on the day of admission and developed a temperature. She was previously independent and lived alone in her ground room flat since the death of her husband two years ago. She required help with shopping from her daughter who lives half a mile away. Her daughter noticed the decline in her condition and called her GP who arranged the admission. Her past medical history includes hypertension and macular degeneration. She does not have any LPA (lasting power of attorney) or an advanced directive.

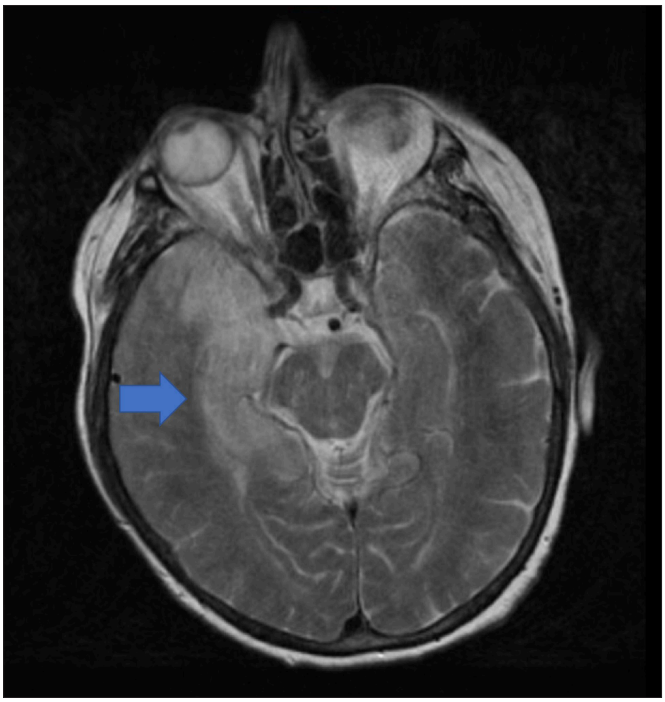
On admission, she was confused. Her temperature was 38.4^{0}C and she was hot and sweaty. Her AMTS was 2/10. She was responding to voice and was following all the commands. Her heart rate was 64/minute and regular. First and second heart sounds were audible with no added sounds or murmurs. Respiratory rate was 16 and oxygen saturations of 97% on air. Her chest was clear. There was no wheeze or crepitations. Abdomen was soft and nontender with audible bowel sounds. There was no cranial nerve abnormality. Power, tone and reflexes were normal. Due to the confusion, coordination could not be tested.

Her full blood count showed raised white cells at 20.2 and CRP of 68. Her U&Es were stable and LFTs were normal other than slight hypoalbuminaemia. Her dementia blood screen was also normal. Her blood cultures and urine cultures were sent.

ECG showed sinus rhythm and left ventricular hypertrophy due to longstanding hypertension. CXR was normal other than unfolding of arch of aorta. CT brain did not show any intracranial bleed.

She remained pyrexial and was treated as sepsis of unknown origin with benzylpenicillin and gentamicin. The blood cultures did not grow any organisms and so did the urine cultures.

She continued to have confusion, hallucinations and remained febrile. Whilst inpatient she had a seizure which terminated itself and lasted almost 90 second. The team then decided to plan MRI of the brain which confirmed HSV encephalitis. She had a lumbar puncture and CSF analysis revealed pleocytosis, normal glucose and raised protein. CSF was sent for HSV – PCR analysis which proved HSV 1 infection. She was treated with acyclovir.



MRI Brain: Enhancement of the right medial temporal lobe, suggestive of herpes simplex encephalitis.

She remained very unwell and drowsy with poor oral intake. An NG tube was inserted to support oral intake. She later became acutely short of breath and a CTPA ruled out any pulmonary embolus but showed consolidation and fluid overload. She was given furosemide for diuresis and was off-loaded successfully and was treated for a hospital acquired pneumonia. She slowly improved over the following weeks. She was reviewed regularly by the dietitians and speech and language therapy teams.

She made a satisfactory progress. Oral intake was reintroduced and the NG feed was weaned down, and NG tube was finally removed. She was reviewed regularly by the neurosmart therapy team who assisted her in improving her strength and mobility. She recovered well and was discharged home with a TDS package of care.

FEBRILE ENCEPHALOPATHY IN OLDER PEOPLE

M Asad, M Vassallo

Case Discussion

This case described the presentation of an elderly lady with confusion and fever. This was diagnosed as herpes simplex encephalitis and was treated accordingly.

It is not unusual to have elderly patients on the acute medical take with confusion. The differential for this presentation is broad and requires not only good clinical knowledge but also requires good clinical skills including history taking and physical examination. It is mostly difficult to have a good history from a confused, elderly patient so a collateral history is always beneficial. The next major step is to look for any factors that could make any person acutely confused. The list is long but key factors to look for include dehydration, infections, hypoxia, metabolic abnormalities, drugs and toxins, constipation, urinary retention, pain, fractures and head injury.

It is also important to make sure that this is not a gradual decline in the cognitive function. The acute confusion may still be the first presentation of an underlying dementia or depression but good practice is to look for all the potential causes of delirium and be able to differentiate delirium from dementia.

Features	Delirium	Dementia	Depression
Onset	Acute (hours to days)	Insidious (months to years)	Acute or insidious (weeks to months)
Course	Fluctuating	Progressive	May be chronic
Duration	Hours to weeks	Months to years	Months to years
Conscious	Altered	Usually clear	Clear
Attention	Impaired	Normal except in severe dementia	May be decreased
Psychomotor changes	Increased or decreased	Often normal	May be slowed in severe cases
Reversibility	Usually reversible	Irreversible	Usually reversible

In the elderly, nearly all the infections could potentially cause clouding of the sensorium, however in a febrile patient, following signs should alarm the clinician of a possible involvement of nervous system:

- **Headache**
- **Neck stiffness**
- **Photophobia**
- **Acute confusion**
- **Reduced GCS**
- **Irritability**
- **Seizures**
- **Paralysis**
- **Nausea and vomiting**
- **Rash**

Herpes simplex encephalitis typically causes fever and mental status abnormalities. Meningeal signs may be present but are not always a feature. According to Whitley et al. following signs are seen in HSE:

Alteration of consciousness (97%)
Fever (92%)
Dysphasia (76%)
Ataxia (40%)
Seizures (38%) - Focal (28%); generalized (10%)
Hemiparesis (38%)
Cranial nerve defects (32%)
Visual field loss (14%)
Papilledema (14%)

A lumbar puncture and CSF sample analysis is usually required to confirm the diagnosis of meningitis which could be either bacterial, viral, fungal or amoebic. The incidence of tuberculous meningitis has gone down however it is still seen in developing countries and patients with HIV/AIDS or other immunocompromised states.

CSF Analysis in different CNS infections

Characteristic	Normal	Bacterial	Viral	Fungal
Appearance	Clear	Clear, cloudy, or purulent	Clear	Clear or cloudy
Opening pressure	10-20 cm H_2O	Elevated (>25 cm H_2O)	Normal or elevated	Elevated
WBC count	0-5 cells/μL (< 2 polymorpho nucleocytes [PMN])	>100 cells/μL (>90% PMN)	10-1000 cells/μL (lymph but PMN early)	10-500 cells/μL
Glucose level	>60% of serum glucose	Low (< 40% of serum glucose)	>60% serum glucose (may be low in HSV infection	Low
Protein level	< 45 mg/dL	Elevated (>50 mg/dL)	Elevated (>50 mg/dL)	Elevated

CSF should be sent for HSV-1 and HSV-2 polymerase chain reaction (PCR) study.

PCR is highly sensitive (94-98%) and specific (98-100%). Results become positive within 24 hours of the onset of symptoms and remain positive for at least 5-7 days after the start of antiviral therapy.

FEBRILE ENCEPHALOPATHY IN OLDER PEOPLE

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Management

Specific Management:

Once the diagnosis of HSE is suspected or has been established, acyclovir should be started immediately. Its dose is 10 mg/kg/day in 3 divided doses intravenously for 14-21 days.

Acyclovir is converted to acyclovir triphosphate in vivo which inhibits HSV DNA polymerase and stops viral replication. Mortality from HSE before use of acyclovir was 60-70%; since acyclovir, it is approximately 30%.

Supportive Management:

It includes the following

Maintaining airway, breathing and circulation:

If the patient drops his conscious level, the airway needs to be maintained. It may need nasopharyngeal airway and even require mechanical ventilation in an ITU/HDU depending upon patient's requirement and escalation status.

Haemodynamic support may only require intravenous fluids or inotropic support in an HDU, once again it will vary from patient to patient depending on its need and requirement.

Temperature control:

Paracetamol may be required.

Seizure control:

A seizure may terminate on itself or may require lorazepam or diazepam or other anticonvulsants like sodium valproate, phenytoin or fosphenytoin. Seldom a status epilepticus would need propofol with intubation and ventilation.

Management of increased intracranial pressure:

Encephalitis increases the risk of raised ICP. This can be reduced by elevating head end of the bed, mannitol, diuretics eg furosemide and intubation and hyperventilation to decrease P_aCO_2.

Hydration and Nutrition support:

Oral intake should be encouraged wherever possible. However, if nasogastric feed is required, a dietitian input is vital.

Prevention of contractures and pressure sores:

A good nursing care is essential to prevent these.

Prevention of venous thromboembolism:

All patients should have prophylactic thromboembolism unless contraindicated.

Best Of Five Questions

1. Which of the following factors indicate a worse prognosis for acute encephalitis:

a. Increasing age

b. Immunocompromised state

c. Mechanical ventilation

d. Coma

e. All of the above

2. Which of the following is true about acyclovir:

a. It interferes with RNA polymerase to inhibit RNA replication via chain termination.

b. It penetrates blood brain barrier.

c. It is safe to use in renal dysfunction.

d. It can be used subcutaneously in a confused patient to treat HSE.

e. More than 90% of the drug is excreted in the bile.

FEBRILE ENCEPHALOPATHY IN OLDER PEOPLE

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3. Which of the following is true about HSE:

a. In adults, herpes simplex virus type 1 (HSV-1) accounts for 95% of all fatal cases of sporadic encephalitis.

b. HSE usually results from reactivation of the latent virus.

c. MRI is the preferred modality for evaluating the brain which reveals hyperintensity in the temporal lobes, inferior frontal lobes, with a predilection for the medial temporal lobes.

d. Brain biopsy was once considered the only definitive means of diagnosing HSE.

e. All of the above

Answers

Q1. Answer (e)

All the factors mentioned here indicate a poor outcome.

Q2. Answer (b)

Acyclovir is distributed widely (brain, kidney, lungs, liver) and achieves good concentration in cerebrospinal fluid. It inhibits DNA polymerase and halts DNA replication. 60-70% of acyclovir is excreted unchanged in the urine.

Q3. Answer (e)

All of the above mentioned are true. It is surprising but before the advent of CSF PCR, the only way to confirm HSE was a brain biopsy.

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HOW TO AVOID BEING A LISTLESS DOCTOR: THE ART OF ON-CALL LIST CREATION

T Muth, A Baban, R Dickson-Lowe

Abstract

Throughout your career as a doctor, you will learn skills that help you to deal with a variety of testing situations. One such occasion is your daunting first on-call and one such skill is that of being well-organised. In order to keep abreast of the engulfing waves of jobs and requests, it is important to have a system such as having a methodical and efficient list of patients and jobs.

Although it may be easy enough to loosely jot down names and hospital numbers on a wrinkled, detached scrap that you ripped from the corner of the morning's post-take list, there are better methods of structuring your jobs. Poor organisation will not only lead to missing your duties but also inadequate handovers, putting patients' safety at risk. This article illustrates some of these tactics in the hope that it may help junior doctors prepare for the ominous task of the first on-call, as well as provide some narrative around developing these skills.

Background

A good list is hard to find. Especially, it seems, when you need it most. Between negotiating scans, consulting the latest guidelines, and abstracting over your increasingly isolated existence as a junior doctor on a grim stretch of nights, that sheet of paper – that irreplaceable list of absolutely everything – can so easily slip unnoticed into some untidy nook of the doctor's office where you spend the next forty minutes trying (and failing, desperately) to find it. How you want that list.

What complicates things somewhat is the creeping conviction over your Foundation Years that "the list," in its traditional iterations – acronym-intensive, incorrectly dated, and forever exiting the printer in landscape mode – is something that, like a lazy partner at the close of a long and dysfunctional relationship, you could probably do without. You want to let your list know, slowly, as you feed it noisily into a shredder: it's not you, it's me, and this my friend is the end. But first you need to find your list, because it's 3AM and you literally don't know what you're meant to be doing without it.

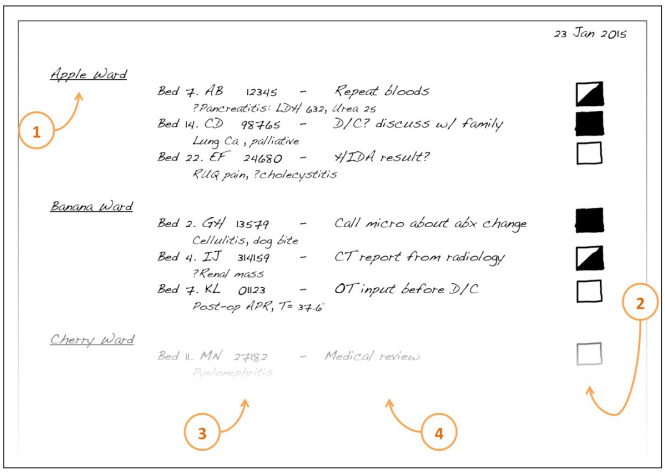
How did we get here? Let's backtrack. It is the first day of your F1 and you don't know what you're doing: a common scenario. Your list at this point contains multitudes – verbatim reports from radiologists still eager to obfuscate (the occlusion, you don't understand, is eccentric, which leads you to bleep the senior in a tizzy: "what's eccentric? What does eccentric mean, is it a weird clot?"), blood results running a month back, the mobile number of the recently-appointed locum registrar - you even have the hyperkalaemia guidelines tucked in a box in the corner just in case. Your list at the start of your career is built to support and save you, keep you abreast of the ward situation when, after a week of annual leave, all the patients have suddenly changed names and the consultant, inexorably unaware of your recent absence, is grilling you on Bed 22's HIDA scan results. "The HIDA scan?" you say, peering through the pages of your list...

However, a funny thing happens as you progress through your Foundation year: you get better. Miraculously, you start to know stuff: the hyperkalaemia guidelines now inscribed on your dura mater, no need to have them printed day after day in squinty font. And no need for the out-of-date encyclopaedia on each patient: you know your patients, and without having to consult a series of crowded tables on poorly-stapled A4 can confidently turn to your consultant and apprise them of that HIDA scan result, even if, in your darkest moment, you realise you don't know what a HIDA scan actually is.

Still, you come up with alternative functions for your list: it's dynamic, something to hold, a charming baton, a gestural aid, a fan in Summer, it's something to practice Biro art on. Ultimately you personalise your list and do with it as you want: a skill that is needed when you arrive, blank notebook in hand, to your first set of on-calls.

Techniques

Although each list's true meaning is in the eye of the beholder, before you reach the confidence and prowess to design your own daily almanac of patients, it is best to start with a basic strategy. One commonly used technique is concise but clearly lays out the relevant information (figure 1).



For all lists, there are some fundamental principles that should be kept in mind.

HOW TO AVOID BEING A LISTLESS DOCTOR: THE ART OF ON-CALL LIST CREATION

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1. It should be logistical:

Planning your jobs by location can help to prevent unnecessary excursions across the hospital, just to return back to the corridor you were on two jobs previously.

2. A checkbox system:

An empty box means the job is yet to be done, half-filled means that the job has been ordered but needs follow up, and when the job is complete the box is filled completely.

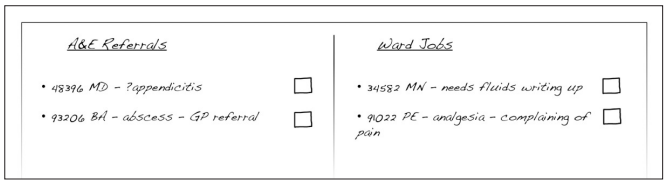
3. Having the correct information at the ready:

Whilst respecting patient confidentiality, patient identifiers (e.g. initials, bed number, hospital number, date of birth etcetera) and some clinical details will allow you to attend to a patient with a good foundation of knowledge.

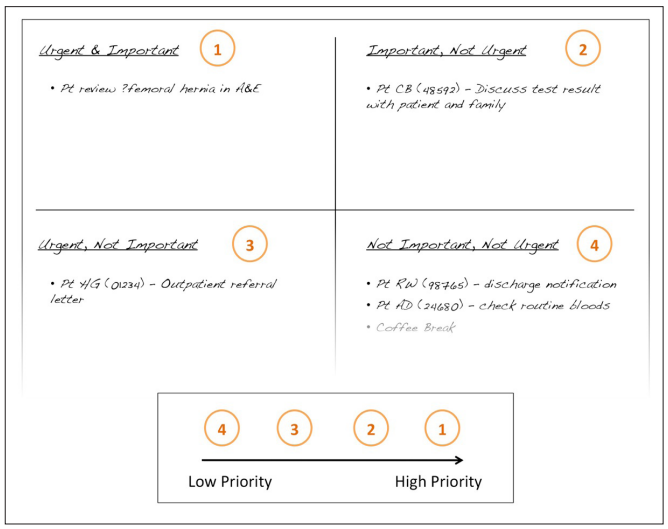
4. Clutter-free and clear:

Having space to edit and adapt your lists is important in not creating an indecipherable artwork. However, using multiple sheets risks losing important information.

It can be presented in a different style (figure 2) and may benefit from a pre-printed piece of paper with your anticipated divisions of work.



Another method of dividing jobs is by their urgency and importance, called the 'Eisenhower Principle' (figure 3) (1)- named after the successful strategist and President of the United States. This system enables the classification of jobs into a matrix, identifying which tasks need to be prioritised over others and thereby improving efficiency. A benefit of this system is that it assists the author with time-management – scheduling relatively pressing matters will help avoid getting encumbered by requests for a steady flow of ward tasks.



1. Urgent and important:

These jobs require your immediate attention – they are, or without action will imminently be, crises.

2. Important but not urgent:

These need your personal attention, but you can schedule them in at a later time, allowing you to attend to more pressing jobs.

3. Urgent but not important:

These jobs need not be done by you personally. If possible, delegate the job to someone else and check it has been completed.

4. Not important or urgent:

The last on your list - to be completed when all other jobs are accounted for.

HOW TO AVOID BEING A LISTLESS DOCTOR: THE ART OF ON-CALL LIST CREATION

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Conclusion

Before you reach a level of administrative enlightenment you will need to discover the system that works best for you. Your list-making ability will blossom alongside your development as the doctor. You will conceive of acronyms and interpretive patterns that only you yourself understand, all the while streamlining your task list.

The list is a limb, an extension that creates clarity in your mind by compartmentalising your tasks into visibly digestible portions. This efficient and effective list will make your on-call more relaxed and enjoyable and ultimately will improve patient safety with no job being overlooked or lost on that piece of paper that was at the bottom of your bag all along.

Questions

1: What percentage of incident reports causing patient harm are due to 'access, admission, transfer, and discharge' and 'documentation'?

a) 1%

b) 6%

c) 12%

d) 16%

e) 22%

2: Which of the following statements is most true?

a) Lists should include patient surnames to ensure there is no confusion

b) Write large and on multiple pieces of paper

c) Highlighting the location of the jobs can speed up your work

d) You don't need a list if you can remember all the patients

e) Being organised has no impact on patient safety

3: With regard to the Eisenhower Principle, which of the following is most true?

a) Urgent but not important jobs can be delegated to someone by name

b) Important but not urgent are the highest priority

c) It helps outline jobs but doesn't improve time efficiency

d) An example of not urgent, not important is talking to relatives

e) Urgent and important jobs should be escalated as soon as possible to your seniors

4: Which of the following is not a key principle of a good list?

a) Keeping it logistical

b) Accurate and concise information

c) Clear and easy to adapt

d) Simple to understand check-box system

e) There is a single recognised way of making a list

5: Which of the following statements is false?

a) Reassess your list at intervals to ensure no jobs are lost

b) It'll take time to develop your own list

c) Good organisation is a necessary skill for a foundation doctor

d) Take your lists home for safe-keeping

e) Messy lists can lead to medical errors

HOW TO AVOID BEING A LISTLESS DOCTOR: THE ART OF ON-CALL LIST CREATION

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Answers

Question 1: d)

16%. The National Reporting and Learning System 2016 showed that 16% of all incident reports were a result of poor documentation and handover (2). Implementation of strategies for keeping organised greatly decrease the risk of errors.

Question 2: c)

Making note of the location of jobs can cut down your travelling time. It is important to protect patient confidentiality – initials and hospital number can suffice. Lists on multiple pieces of paper may be necessary but are prone to being misplaced and likewise with trying to remember details jobs can get lost over the shift. Developing your organisational skills is part of the foundation programme as it is integral to patient safety.

Question 3: a)

Urgent but not important jobs can be delegated if you ensure their completion, for example giving antibiotics within an hour of admission for a septic patient. The highest priority jobs are urgent and important ones, you should attempt to do these promptly yourself and if needed escalate to a senior. The Eisenhower Principle can be used to maximise your efficiency. Talking to relatives is an important task but you can delay such a task if there are more pressing matters.

Question 4: e)

There is no official method of making a list – it is your own to design. Whatever makes it easier for you to understand should be your method.

Question 5: d)

The safest method to maintain patient confidentiality is to expose of your list on the way out of the hospital – there are often confidential waste bins near exits to the hospital. Disorganised lists can lead to misinterpretation of information – it is important to make sure that jobs are properly marked off and taking a tea break to ensure you are on top of your jobs will ultimately improve patient care.

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PREPARING FINAL YEAR STUDENTS FOR ON-CALL WORK

T Gillespie, C van't Hoff, M Vassallo

Abstract

Background

Starting work as a doctor is a challenge. Many feel unprepared, particularly for on-call work. A previous teaching programme addressed this with some success, however it was only implemented locally for newly qualified doctors before their first day. The worries of final year students remain unaddressed. This study aimed to determine whether a teaching programme exploring common on-call scenarios will improve the perception of preparedness and ease this transition from student to doctor.

Methods

Medical students within The Royal Bournemouth Hospital were invited to attend weekly tutorials organised by new foundation doctors. Scenarios were based on recent experiences and aimed to address common, on-call scenarios and practice communicating clinical information. Tutorials were augmented by the use of Prezi, an online presentation software enabling non-linear sequencing. This allowed students to dictate the direction of the sessions, working through a typical list of jobs encountered on-call and prioritising as appropriate.

Success was determined by comparing pre- and post-course questionnaires.

Results

24 students took part with 19 completing the post-course questionnaire. Scores of improvement were statistically significant across all questions. Students felt more prepared for their future on-call shifts: 2.08(0.83) vs. 4.11(0.57), (p=0.000) and felt more confident managing acutely unwell patients 2.50 (0.89)vs. 4.21 (0.54), (p=0.000).

Conclusion

This project demonstrated that students feel underprepared for on-call work, with a paucity of relevant teaching. The weekly tutorials improved the perception of preparedness and confidence. This is a low-resource method of teaching and has the potential to be implemented on a larger scale. The next step would include increasing recruitment and determining whether post-course sentiment is upheld upon graduation.

Background

The difficulties transitioning from medical student to newly qualified foundation doctor (F1) are well documented (1). Students must learn to utilise theoretical knowledge when faced with real-life clinical practice. This is a significant challenge, and one that leaves many undergraduates feeling ill-prepared, overwhelmed and anxious (2). Moreover, studies have shown no correlation between excellence in traditional exams and preparedness for becoming a doctor (3).

There is a perception that the annual influx of new doctors compromises patient safety, particularly out of hours (4). Some new F1s struggle to prioritise appropriately - they make errors and unseen omissions, and do not act in the judicious manner expected from a more experienced doctor. (4). Graduates also struggle with their new responsibilities and their role within emergencies (1). Teaching and mentoring can address these common anxieties (5) and courses are run in some deaneries. Whilst these courses are beneficial, they occur after graduation and fail to address the worries of students during their final year of study.

Reassuringly, the number of F1s reporting a sense of readiness for their new roles has increased to around 70% from 50% in 2002 (6). However, there is still wide variation between medical schools (6). It is not clear how best to improve readiness, particularly for on-call work. Clinical attachments are difficult to standardise and many are not exposed to acutely unwell patients as this commonly arises out of hours. Shadowing on-call doctors can be unpredictable and even unrewarding, as there is demonstrably less educational activity in students on overnight shifts (7). Alternatives to on-call shadowing include simulation training. This is often well received but requires specialist equipment, a low student-teacher ratio (8) and is not offered universally.

There is a need to develop new ways of teaching medical students about future on-call work. Our study directly addressed this and determined whether students felt more prepared following a teaching programme explicitly developed to address on-call situations.

PREPARING FINAL YEAR STUDENTS FOR ON-CALL WORK

T Gillespie, C van't Hoff, M Vassallo

Methods

This study aimed to evaluate a teaching programme focusing on common, on-call scenarios by exploring perspectives of preparedness of final year medical students before and after the teaching.

Final year medical students on placement in The Royal Bournemouth Hospital were invited to attend the weekly programme, which ran for 7 weeks led by new F1s. Teachers volunteered and used personal experiences to prepare for the sessions. Tutorials were augmented by Prezi, which is a free, online presentation resource. It has a focus on creativity and imagery, with formatting capabilities allowing non-linear sequencing. In contrast to Microsoft Powerpoint, Prezi allowed the students to dictate the order of the session rather than following a formulaic, pre-ordained sequence of slides. This flexibility affords a greater ability for students to immerse themselves within the tutorial.

Students were presented with a typical list of jobs at the beginning of the session (Figure 1) and had to discuss and prioritise the jobs themselves. Real scenarios were used, ranging from managing fluid balance to addressing acute situations, and included anonymised patient data, observations and imaging (Figure 1).

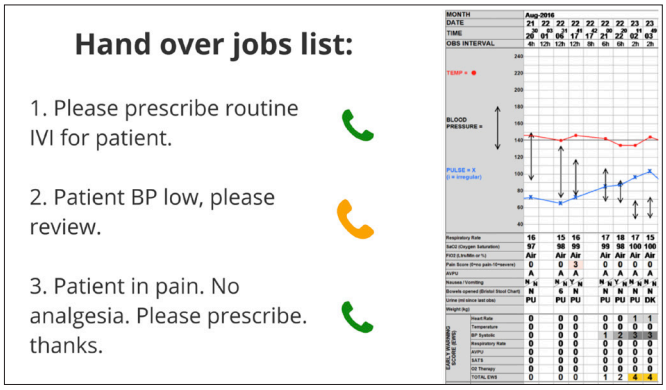

Figure 1: On the left, a list of the jobs faced by students during a session. Students were helped with the phone traffic light system. Green suggested low priority, amber moderate and red reflected an emergency. On the right, the observations of a patient with a low blood pressure during a red call.

Students had to elicit information from teachers, fostering the process of clinical thinking, decision making, culminating in a management plan. Each session included an "emergency bleep" which was unseen and designed to reflect the spontaneity and unpredictability of on-call work. For example, students were called to assess a deteriorating patient with a low blood pressure. This was due to a gastrointestinal bleed and students were able to formulate a plan and discuss their situation with a senior (by role play).

There was no repetition between sessions, allowing maximum coverage of frequently occurring scenarios. The sessions were informal, yet attempted to recreate the pressure and responsibility of being on-call while in a safe environment. The emphasis was on "you are now the doctor" and as a group, action plans to address situations were developed.

The teaching series was evaluated by comparing pre- and post-course questionnaires. We also asked for free text comments from the students.

Ethics

The Trust Research Committee approved this project. Students gave informed consent to take part and for the results to be published.

Statistical analysis

Data was analysed using the IBM Statistical Package for Social Sciences (v23). The pre- and post-course questionnaires were scored using a Likert scale of 1-5, where 1 reflected least agreement and 5 indicating highest agreement with a given statement. Our data wasn't normally distributed; therefore the Mann-Whitney U test was used to compare results. P values ≤ 0.05 were considered to be significant.

Results

Of the 48 students in Bournemouth, 24 attended the sessions and agreed to participate. 19 (79%) completed the post-course questionnaire. The majority were able to attend all 7 sessions, with the most common reason for absence being shadowing a late shift.

Pre-course participants were asked for their concerns about starting work. Themes that emerged include the following: worry about identifying and managing an acutely unwell patient, competence and time pressures. Results from the pre and post programme self-assessment are shown in Table 1.

The students felt that they had benefitted from the course, feeling more confident and prepared for their future role on-call. Importantly, the students felt better able to recognise the limits of their competency and to communicate their concerns to seniors.

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	Pre/post course	N	Mean	Std. Dev	Median	Mode	P Value
1. I feel prepared for my future F1 on-call shifts.	Pre	24	2.08	0.83	2	3	0.000
	Post	19	4.11	0.57	4	4	
2. I would be confident identifying and managing an acutely unwell patients.	Pre	24	2.50	0.89	3	3	0.000
	Post	19	4.21	0.54	4	4	
3. I have a method of gathering information and assessing patients.	Pre	24	3.67	0.57	4	4	0.000
	Post	19	4.68	0.48	5	5	
4. I feel confident recognizing the ceiling of my competence and calling for help.	Pre	24	3.46	0.66	4	4	0.000
	Post	19	4.42	0.84	5	5	
5. I am prepared to contact senior doctors and handover cases.	Pre	24	3.29	0.81	3	3	0.000
	Post	19	4.53	0.69	5	5	
6. I am aware of the different roles of those working on the ward and who I can delegate to	Pre	24	3.21	0.78	3	3	0.000
	Post	19	4.26	0.65	4	4	
7. Being a final year student, I have received enough teaching regarding situations on-call.	Pre	24	2.00	0.72	2	2	0.000
	Post	19	3.95	0.91	4	4	
8. I know what is expected of me when I graduate.	Pre	24	3.13	0.85	3	3	0.005
	Post	19	3.95	0.78	4	4	

Table 1: This table demonstrates the changes in the students' opinions before and after the teaching series.

The students commented favorably on the content and style of teaching (Table 2). They reported that it was the breadth of scenarios discussed, ranging from the common and mundane to medical emergencies, which they found most useful. Free text responses were invited and students were appreciative of the teachers' efforts, highlighting that such F1 scenario-based teaching was not occurring across all placements.

Question	Mean	Std. Dev	Median	Mode	Range	Minimum	Maximum
1. How many of the seven sessions did you attend?	5.95	0.97	6.00	7.00	3.00	4.00	7.00
2. The course did no cover enough scenarios.	1.84	0.83	2.00	2.00	3.00	1.00	4.00
3. The different teachers provided a useful perspectives on approaching clinical challenges	4.57	0.51	5.00	5.00	1.00	4.00	5.00
4. The style of teaching was useful for understanding the role of being on-call.	4.68	0.48	5.00	5.00	1.00	4.00	5.00
5. The Prezi complimented the content taught.	4.74	0.45	5.00	5.00	1.00	4.00	5.00
6. The sessions allowed me to ask questions and voice my worries.	4.84	0.37	5.00	5.00	1.00	4.00	5.00
7. The teachers were good communicators and relayed the information clearly.	5.00	0.00	5.00	5.00	0.00	5.00	5.00
8. Being taught by recent graduates felt more relevant than teaching provided by senior doctors.	4.89	0.32	5.00	5.00	1.00	4.00	5.00
9. I would like to attend this course again.	4.89	0.32	5.00	5.00	1.00	4.00	5.00
10. I would recommend this course to all final year students	4.95	0.23	5.00	5.00	1.00	4.00	5.00

Table 2: Students' opinions on the quality of the teaching series.

Discussion

This interactive teaching programme using Prezi was well received. All students felt more prepared for their on-calls shifts, and more confident in both identifying and managing acutely unwell patients. The authenticity of being taught by F1s who had only recently graduated, as opposed to more senior doctors, resonated with the students, making the content more tangible and relatable. This may have been one of the reasons for this programme's success.

This study had some limitations. The teaching was voluntary and out of hours and not all eligible students attended. Those attending were a self-selecting sample and it is possible that this created a biased population (of more anxious or more conscientious students) affecting the results. While we were mindful of this potential acquiescence bias, we favoured voluntary attendance as a means of ensuring an engaged and dynamic sample group.

Those that participated were likely to attend all sessions, suggesting the non-attenders made no contact with this teaching. To remedy this, the students could have been polled to determine the most desirable time and day of the week for the sessions and sent out reminders. However, as recent students, constant reminders to attend voluntary teaching is a nuisance and often poorly received. It would have been interesting to collect data from the whole cohort, as a baseline measure of preparedness, during their hospital induction - this may have acted as an incentive to attend in greater numbers during the subsequent weeks of teaching.

Secondly, this study relied on the subjective reporting of students and their changing perspectives of their own ability. It remains unclear whether the perception of confidence and preparedness is a surrogate marker for objective readiness for on-call work.

Finally, students are unlikely to ever feel completely prepared for starting a new job, considering that this is a new role and they are often undergoing other life changes such as moving house. Nevertheless, our teaching seems to have minimised the anxieties surrounding the unexpected nature of on-call work.

This style of teaching is easily reproducible, transferable between centres and requires minimal resources. It is a high yield method of teaching, with no reliance on the unpredictability of ward work, a well-documented limitation of shadowing (8). This method also provides a practical alternative to simulation, which (whilst well received) (7) is resource and teacher heavy - requiring specialist training to use the facilities. Near-peer teaching has repeatedly been demonstrated to be both effective and enjoyable, for both teachers and students (10).

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Some sessions were delivered in pairs. The improvement in the student-teacher ratio allowed for more breakaway and free-flowing discussion, as well as giving teachers the opportunity to practice teaching and critique one another. By creating a core group of 7 teachers, no sessions were cancelled (a common limitation of junior doctor led teaching).

No data was collected on teachers' perceptions of the program, however teachers informally reported they enjoyed the sessions as they provided the opportunity to reflect and learn from recent experiences.

Conclusion

Students face a difficult challenge in their final year: they must combine theoretical knowledge and clinical acumen with the dual aims of passing exams and succeeding in their F1 year. This project revealed that students feel underprepared for their role on-call - this is likely, at least in part, to be the result of a paucity of relevant teaching. This is an original teaching programme that addresses this and can help students achieve these aims. We feel that this may be of benefit to other centres hosting medical students.

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THE CHALLENGE OF OBTAINING TISSUE FROM LUNGS - DIAGNOSTIC TOOLS & ITS COMPLICATIONS

G Raghuram, DK Mukherjee, K Pannu

Introduction

Lung cancer is one of the most common causes of cancer in the United Kingdom. Diagnosis of lung cancer includes clinical history, examination, radiological findings and histological confirmation. Based on the radiological and histological findings, informed decisions can be made at multidisciplinary meetings regarding prognosis and management. Histopathology samples are especially useful as they identify cancer type, grade cancers and allow for cytological analysis to look for molecular markers that may determine whether a patient is suitable for targeted therapies.

However, obtaining lung and lymph node tissue can be difficult due to the complications associated with traversing lung tissue and the location of lymph nodes close to vital structures within the mediastinum. As a foundation doctor it is important to be aware of some of the diagnostic procedures for obtaining tissue from the lungs. Furthermore, as a respiratory junior doctor you may encounter some of the complications of these procedures. In this article we present the case of a patient who underwent endobronchial ultrasound (EBUS) and tissue biopsy to help diagnose, stage and guide treatment for lung adenocarcinoma. We also discuss the biopsy methods available to respiratory physicians today.

Case study

A 52 year old lady presented to her general practitioner (GP) with a 1 month history of cough and chest pain. She was a smoker with a 40 pack year history but had no significant past medical history. There was a family history of breast, lung and endometrial cancer. A chest radiograph was organised by the GP followed by a computerised tomography (CT) scan that described bilateral lung opacities; a 24mm lesion in the left upper lobe and a 32mm lesion in the right lower lobe. Based on the suspicious CT chest findings she was referred via the 2 week wait cancer pathway.

She was seen in the respiratory clinic and booked in for a CT head and a positron emission tomography (PET) scan for radiological staging and bronchoscopy to achieve a histological diagnosis. During bronchoscopy, radial EBUS was used to locate the left upper lobe apical segment lesion and biopsies, brushings and washings were taken. There were no complications from the procedure.

The biopsy confirmed lung adenocarcinoma and PET showed metastatic disease. These results were discussed at the lung multidisciplinary meeting and a joint decision was made to manage the patient palliatively. Further tissue sampling was required for performing molecular testing. Therefore she underwent a CT guided biopsy to identify if any targeted therapies were viable treatment options. The final diagnosis was lung adenocarcinoma that was EGFR and ALK negative, K-RAS positive and weakly positive for PDL 1. The staging of her cancer was T4 N2 M1a. She was referred to Oncology and was started on cycles of cisplatin and pemetrexed to which the tumour showed some response.

Biopsy methods

To obtain lung and/or lymph node samples for lung cancer diagnosis, one of a few methods can be employed: sputum cytology, transthoracic needle biopsy, fine needle aspiration via endoscopic ultrasound or biopsy via bronchoscopy, mediastinoscopy or thoracoscopy (1). As well as for lung cancer these methods are useful for obtaining samples for diagnosis of sarcoidosis, interstitial lung disease, tuberculosis and a huge range of other respiratory conditions. The choice of technique depends primarily on the location and size of the lesion. As with our case, sometimes patients may require a combination of techniques to finally achieve the desired quality and number of samples.

Endoscopy including bronchoscopy and endobronchial ultrasound

Bronchoscopy is one of the most common methods used for sampling lung and lymph node tissue. All respiratory physicians are trained to perform bronchoscopy and it is normally done in the outpatient setting. It is usually done under sedation and with local anaesthetic applied to the back of the throat, trachea and main bronchi. Total procedure time is around 30 minutes, during which endoscopy nurses monitor basic observations such as blood pressure, pulse and oxygen saturations.

As well as for biopsies, bronchoscopy to indicated in taking bronchial washings and brushings (for example microscopy, culture and sensitivity, cytology, acid-fast bacilli, etc.), removing foreign objects in the airway and stenting. The most common form of bronchoscopy is flexible bronchoscopy; however, depending on the indication; other forms of bronchoscopy may be used.

Flexible bronchoscopy

Flexible bronchoscopy is the most common type of bronchoscopy employed by respiratory physicians. These bronchoscopes can extend into the segmental and subsegmental bronchi. The bronchoscope tip can be manipulated, allowing for the bronchoscope to be navigated into the different segments of the lobes. Complication rates of flexible bronchoscopy are fewer than rigid bronchoscopy but include infection, haemorrhage, local trauma and bronchospasm (2). Biopsies of endobronchial lesions (lesions that extend into the airways) and transbronchial lesions (lesions outside of the airway) can be taken.

Endobronchial biopsies are taken using biopsy forceps under direct visualisation of the lesion with the bronchoscope. For transbronchial biopsies a bronchoscope is passed as far as possible towards the target and forceps are used to take a sample blind or under fluoroscopic guidance (3). Other methods of obtaining samples for cytology are bronchial washings, bronchial brushings and transbronchial needle aspiration (TBNA). In bronchial brushing and washing samples of cells are obtained by brushing the respiratory tract or flushing it with normal saline. TBNA is performed with a 19-22 gauge needle during bronchoscopy and is used to take samples from hilar and mediastinal lymph nodes and peribronchial lesions (4). The sampling of hilar and mediastinal lymph nodes can be performed via EBUS whereas peribronchial lesion sampling has the newer option of electromagnetic navigational capability (which is outside the scope of this article).

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Endobronchial ultrasound

EBUS is a relatively new technique used in sampling mediastinal lesions with its practice starting from around 2000 (5). There are two types of EBUS; linear EBUS and radial EBUS. In linear EBUS, biopsies can be taken under direct visualisation of an ultrasound image in real time. EBUS is especially useful if the lesions are small or are in more difficult to reach locations. Studies have shown that complication rates are low and success rates are high (1, 6). It is important to note that given the limitations of the reach of the linear EBUS scope (Figure 1) it is useful primarily in mediastinal and hilar lesions (Figure 2).

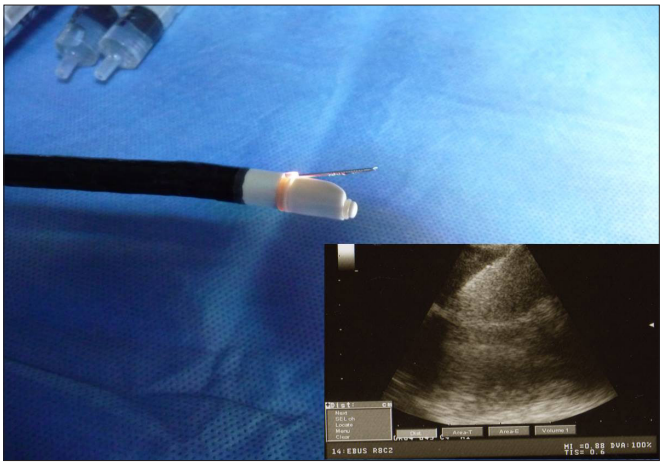

Figure 1: Picture of linear endobronchial ultrasound scope with example ultrasound image

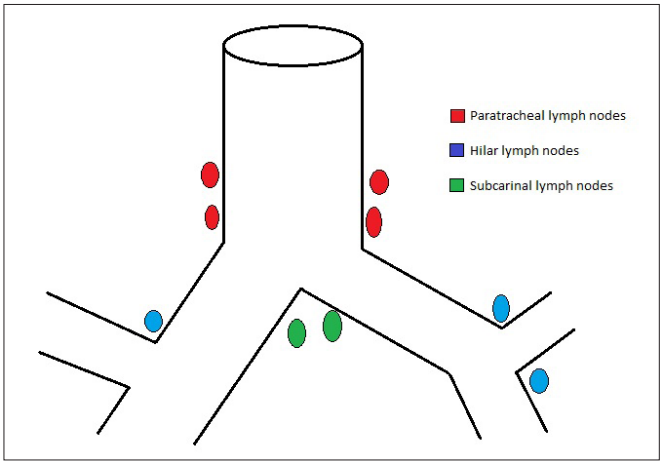

Figure 2: Diagram of lymph node stations which are within the reach of endobronchial ultrasound for transbronchial needle aspiration

On the other hand, in radial EBUS, the probe can reach more peripherally. In radial EBUS a probe is passed through the bronchoscope to produce a 360 degree image and it can extend up to the bronchioles to obtain images (5) (Figure 3). After this, instruments can be directed towards the lesion to take biopsies.

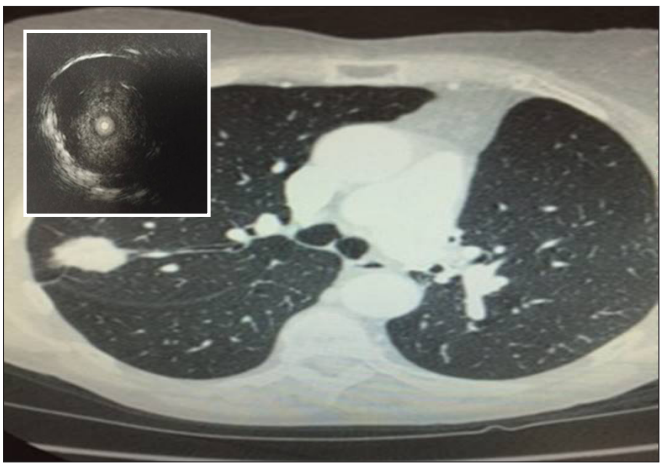

Figure 3: CT scan and radial endobronchial ultrasound image of patient with a peripherally situated lung adenocarcinoma

An advantage of radial EBUS is that patients with severe chronic obstructive pulmonary disease (COPD) who previously could not undergo transthoracic needle biopsy due to the high complication risk can safely undergo radial EBUS. However a limitation of Endobronchial biopsies are taken using biopsy forceps under direct visualisation of the lesion with the bronchoscope. Overall, when comparing EBUS to bronchoscopy with fluoroscopy guidance to obtain tissue samples, the two methods are comparable in time taken for the procedure, safety and yield. However there is evidence that EBUS is beneficial in smaller lesions <3cm (3).

Rigid bronchoscopy

Placing of rigid bronchoscopes is done via the mouth. Unlike in flexible bronchoscopy the scope cannot be manipulated very significantly and it depends on the skills of the operator as to how successful it is. However it is useful in removing foreign objects and large volumes of lung tumour. It can also be used in placing stents for obstructing lesions affecting the more proximal airway. The reach of a rigid bronchoscope is to the main bronchi.

Unlike the other types of bronchoscopy, rigid bronchoscopy is commonly done under general anaesthesia. This means the procedure time is longer and the risks and complication rates are higher. Complications of rigid bronchoscopy include trauma to the teeth and oropharynx, pneumothorax, laryngospasm, bronchospasm, aspiration, haemorrhage, atelectasis, arrhythmias, hypoxia during the procedure and the risks associated with general anaesthesia (2). Overall, given the fact that most of the functions of rigid bronchoscopy can be done via flexible bronchoscopy, rigid bronchoscopy is now mainly used by surgeons and fewer centres offer the equipment to provide it.

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Transthoracic needle biopsy

Transthoracic needle biopsy is commonly used to obtain samples from lesions located peripherally. It is done under local anaesthetic, and sometimes sedation if necessary, by inserting a needle via the chest wall and has a sensitivity of 75-90%. Parenchymal lung lesions, mediastinal lymph nodes and masses involving the pleura can all be sampled using this method (7).

Spirometry is performed prior to the procedure as transthoracic needle biopsy is contraindicated in patients with severe COPD with a forced expiratory volume in the first one second (FEV1) of less than 1 litre. Interventional radiologists often perform the procedure on an outpatient basis as it is done via CT, ultrasound scan (USS) or fluoroscopy (8). Observations are monitored closely throughout and ready availability of chest drains is recommended in case the patient suffers an iatrogenic pneumothorax, which is seen in approximately 20% of patients (9). Haemorrhage, air embolism and seeding of malignant cells along the needle track are other potential complications (10).

Biopsy via mediastinoscopy

Mediastinoscopy is one of the earliest procedures that has been used for sampling lymph nodes from the mediastinum. The procedure is done under general anaesthetic and has a high sensitivity and specificity (11). It involves creating an incision above the suprasternal notch and inserting a scope down towards the carina to visualise the mediastinum and take samples (7). It is often used for patients with suspected lymphoma and other situations where EBUS is not always diagnostic and larger samples of tissue are needed. However, as the procedure is invasive and done under general anaesthetic, its use is becoming less common and has now been replaced by EBUS-TBNA which has similar yield.

Biopsy via thoracoscopy (medical and surgical)

Thoracoscopy can be either medical or surgical and is indicated for pleural or peripheral lesions. Medical thoracoscopy is done under local anaesthetic and sometimes sedation. It is performed by respiratory physicians and involves making an incision between the ribs and then inserting a trocar for the thoracoscope to go through (12). Using the thoracoscope the operator can visualise the pleura and take biopsies from the parietal pleura (Figure 4). Medical thoracoscopy can also be used for samples of pleural effusions for cytology and microbiology and therapeutically for talc pleurodesis for recurrent pneumothoraces and pleural effusions (13).

Video-assisted thoracoscopy is a surgical procedure and commonly performed under general anaesthetic where one lung is ventilated while the other is collapsed and inspected (12). It takes 45 minutes to an hour to complete and one to three incisions are made for the camera and instruments to pass through. Sometimes it may be converted to an open procedure so patients are consented for this too. Following the procedure a chest drain is placed. Compared with medical thoracoscopy, it has a wider variety of therapeutic purposes including bullectomies, surgical pleurodesis and resection of peripheral lung nodules. As it is a complicated and more expensive procedure it is rarely used first line (7).

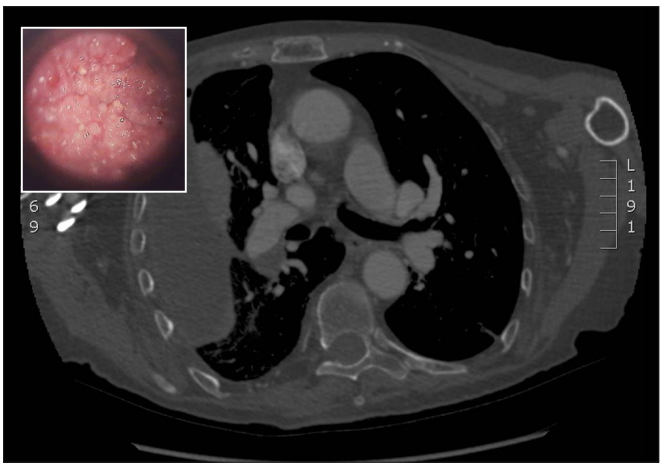

Figure 4: CT scan and image via medical thoracoscopy of patient with mesothelioma.

Conclusion

Obtaining tissue samples in lung cancer patients is crucial. Firstly, we can determine the type and grade of lung cancer which guides prognosis and management. Secondly, obtaining relevant samples helps with staging of the tumour, as if there is spread to the lymph nodes then the patient may need either further aggressive therapy or palliation. Finally, new targeted therapies are coming to market, such as cetuximab and bevacuzimab. A patient's status for specific molecular markers, including KRAS, EGFR and ALK determines their suitability for these targeted therapies. Obtaining cytology is therefore crucial in these patients.

In summary, the respiratory physician has a choice of techniques for obtaining the samples depending on the site of the lesion. However, sometimes a combination of techniques may have to be employed. New techniques such as linear and radial EBUS are becoming more popular however availability of procedures is limited to certain centres. A multidisciplinary approach involving interventional radiologists or thoracic surgeons may be required.

Questions

1. Transthoracic needle biopsy can be performed using

a) CT
b) Fluoroscopy
c) USS
d) All of the above

2. The best option for obtaining samples from the pleura is

a. Bronchoscopy
b. Endoscopic ultrasound
c. Thoracoscopy
d. Mediastinoscopy

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3. Which one of the following is not a complication of bronchoscopy

a. Laryngospasm
b. Haemorrhage
c. Pneumothorax
d. Pericardial effusion

4. Which one of the following statements is false

a. Rigid bronchoscopes can reach to the main bronchi
b. Transbroncial lesions are lesions that extend into the airway
c. Radial EBUS can reach to the bronchioles
d. Pleurodesis is often performed with talc

5. Which of the following statements regarding video-assisted thoracoscopy is false

a. It is normally performed under local anaesthetic and sedation
b. A chest drain is placed post-procedure
c. Pleurodeses can be performed at the same time
d. The procedure may be converted into an open procedure

Answers

1. Answer: d = *Transthoracic needle biopsy is performed by interventional radiologists and can be done using CT, USS or fluoroscopy.*

2. Answer: c ≠ *Medical or surgical thoracoscopy is often used for obtaining pleural samples. Mediastinoscopy is useful for lymphomas and lesions in the mediastinum where EBUS is non-diagnostic. Bronchoscopy is useful for lesions within and adjacent to the airways. Endoscopic ultrasound has not been discussed in this article but is done via the oesophagus and useful for reaching lesions near the oesophagus and below the diaphragm. Transthoracic needle biopsies can also be used to sample pleural lesions.*

3. Answer: d = *Complications of bronchoscopy include trauma to the teeth and oropharynx, pneumothorax, laryngospasm, bronchospasm, aspiration, haemorrhage, atelectasis, arrhythmias, hypoxia during the procedure and infection.*

4. Answer: b = *Endobronchial lesions are lesions that extend into the airway.*

5. Answer: a = *As it often requires intubation, video-assisted thoracoscopy is normally performed under general anaesthetic.*

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VENOUS THROMBOEMBOLISM IN PREGNANCY & THE PUERPERIUM

M Ali, AD Jakes, G Gray

Abstract

Women are at increased risk of venous thromboembolism (VTE); deep vein thrombosis (DVT) and pulmonary embolism (PE), during pregnancy, in particular during the third trimester and puerperium. Pregnancy is associated with a hypercoagulable state and risk factors such as immobility, maternal co-morbidities and complications of pregnancy further increase the risk. The clinical suspicion of VTE in pregnancy should remain high and it is important to remember that the typical symptoms and signs may not be present. However, the differential diagnosis of a VTE in pregnancy is similar to that in non-pregnant women.

In this article we discuss how to approach and manage a pregnant woman presenting with symptoms and signs of a venous thromboembolism based on the most updated evidence and reviews.

Introduction

Pregnancy and the puerperium (up to 6 weeks postpartum) are known risk factors for the development of a venous thromboembolism (VTE) including deep vein thrombosis (DVT) and pulmonary embolism (PE). The clinical presentation can be complicated by the physiological changes associated with these states, therefore clinicians should have a high index of suspicion. Pregnant women are 4–5 times more likely to suffer from a VTE than non-pregnant women of the same age and this is due to pregnancy-related changes reflecting Virchow's triad (1):

- *Hypercoagulability caused by a progressive increase in several coagulation factors such as factors I, II, VII, VIII, IX, and X, together with a decrease in protein S and increase in resistance to activated protein C (2).*

- *Reduced venous flow velocity leading to venous stasis caused by factors such as compression of the vena cava/venous system by an enlarging uterus and an increased resting/supine position later in pregnancy.*

- *Endothelial injury caused by venous distention and trauma during delivery.*

VTE In Pregnancy

The incidence of VTE is 1 in 1000 pregnancies and can occur at any gestation (2). The third trimester and puerperium are, however, the times of greatest risk making up 75% of all thromboses (3). VTE is responsible for 11% of all maternal deaths and was the leading cause of direct maternal mortality between 2012-2014 in the UK (3,4). 75–80% of pregnancy-associated VTE are DVTs (1), with 90% occurring in the left leg and 70% occur in the proximal ilio-femoral veins (5). This is likely due to increased venous stasis in the left leg related to compression of the left iliac vein by the gravid uterus and overriding right iliac artery. The risk of VTE is higher in women who have a caesarean section compared to a vaginal birth (2).

In addition to the hypercoagulable state of pregnancy, there are a number of risk factors that can put women at risk of VTE. Increasing maternal age, parity and obesity (body mass index (BMI) ≥ 30kg/m^2) are important risk factors. Thrombophilias such as factor V Leiden, deficiencies of anti-thrombin III, protein S, or protein C and anti-phospholipid syndrome significantly increase the risk of VTE. Box 1 summaries the risk factors for VTE in pregnancy and the puerperium.

Pre-existing risk factors

- Age >35 years
- Obesity (BMI ≥30kg/m^2)
- Smoking (passive and active)
- Gross varicose veins
- Thrombophilia (heritable or acquired)
- Parity ≥3
- Personal or family history of VTE (particularly if oestrogen related e.g. while on the combined oral contraceptive)
- Paraplegia or other chronic lower limb pathology
- Medical comorbidities e.g. cancer, heart failure, active systemic inflammatory disease and intravenous drug users

Obstetric risk factors

- Multiple pregnancy
- In-vitro fertilization (IVF) – Only in the first trimester
- Pre-eclampsia in current pregnancy
- Instrumental delivery (particularly mid-cavity or rotational)
- Postpartum haemorrhage (>1 litre/requiring transfusion)
- Stillbirth

Transient risk factors

- Ovarian Hyperstimulation Syndrome (OHSS) – Only in the first trimester
- Hyperemesis & Dehydration
- Immobility, including long haul flights and hospital admissions
- Systemic infection
- Surgical procedures and trauma

Box 1: Risk factors for VTE in pregnancy and the puerperium (6,7,8)

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Clinical Presentation

Presentation is similar to non-pregnant patients with a DVT or PE. It must be remembered that both a DVT and PE can occur simultaneously. Non-specific symptoms such as a low-grade fever and lethargy may also be observed. A mild leucocytosis on full blood count is not uncommon.

The signs and symptoms of DVT are typically unilateral and include leg discomfort, pain, swelling, tenderness and oedema. There may also be lower abdominal or back pain which could reflect the extent of the thrombus into the pelvic vessels or the development of a collateral circulation (3)

The signs and symptoms of a PE include sudden onset dyspnea, chest pain (commonly pleuritic in nature), hemoptysis, palpitations, pre-syncope and syncope. The patient may have a raised jugular venous pressure indicating right ventricular failure secondary to a large pulmonary vein thrombus.

History

A thorough clinical history is essential when assessing a pregnant woman with signs and symptoms of VTE. It is important to determine:

- *Onset and duration of symptoms*
- *Gestation and parity*
- *Antenatal course of the pregnancy*
- *Maternal co-morbidities*
- *The presence of risk factors for VTE (Box 1)*

Examination

A full set of clinical observations, including temperature should be performed. Respiratory rate and resting oxygen saturations should be measured. If oxygen saturations are normal, exertional oxygen saturations can be measured after walking the patient (3.) Heart rate and blood pressure should also be measured.

Initial bedside assessment of the patient may reveal an unwell patient.

- *Is she comfortable at rest or acutely short of breath and distressed?*
- *Is she speaking in complete full sentences?*

A cardiovascular, respiratory and abdominal examination should be performed, in addition to assessment of the lower limbs. Auscultate the chest for localizing signs such as bronchial breathing indicating pneumonia or coarse crepitations indicating pulmonary oedema. The calf circumference should be objectively measured (10cm below the tibial tuberosity), and a difference of >3cm is suggestive of a DVT. However, bilateral pitting oedema can be a normal finding later in pregnancy.

The fetal heart should be auscultated to confirm viability.

Differential Diagnosis

The differential diagnosis of a VTE in pregnancy is similar to that in non-pregnant women. The clinical suspicion on VTE in pregnancy should remain high and it is important to remember that the typical symptoms and signs may not be present. Dependent peripheral oedema may occur due to a decrease in serum oncotic pressure and venous congestion. A perception of shortness of breath may be caused by an increase in tidal volume and diaphragmatic elevation (7). Physiological anaemia due to an increase in plasma volume causing haemodilution may also contribute. Box 2 lists the differential diagnoses for both a DVT and PE.

DVT	PE
Muscular pain	Physiological
Dependent oedema	Anxiety and hyperventilation
Varicose veins	Muscular chest pain
Superficial thrombophlebitis	Acute coronary syndrome
Ruptured Baker's cyst	Pulmonary oedema
Cellulitis	Pneumonia
Trauma (e.g. ruptured plantaris tendon)	Pneumothorax
	Asthma

Box 2: Differential diagnoses for VTE

Any woman presenting with signs or symptoms consistent with a VTE should have objective testing promptly performed. Empirical anticoagulant treatment with low-molecular weight heparin (LMWH) should be commenced immediately (based on the patient's weight), unless contraindicated, until objective testing can be performed in order to exclude the diagnosis.

Investigations

Baseline blood tests should be performed prior to commencing anticoagulation, including a full blood count, coagulation screen, urea and electrolytes and liver function tests. It is prudent to ensure the woman has a platelet count over 50-76 x 10^9/L and an up-to-date renal and hepatic function to dose the LMWH appropriately. A C-reactive protein (CRP) may be useful in women presenting with respiratory symptoms, with a raised value suggesting infection. Performing a thrombophilia screen prior to therapy is not recommended as the physiological changes of pregnancy and pathophysiology of acute thrombus can influence the results (3,9).

The Well's criteria has not been validated in pregnancy and therefore not recommended. D-dimer levels are not useful in pregnancy due to the high false-positive rate in pregnancy (10). This is because there is a progressive rise in D-dimer levels with advancing gestation and this is further elevated in multiple pregnancies, pre-eclampsia, following caesarean section and in major postpartum haemorrhage (3).

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Without pregnancy-specific reference ranges, the D-dimer level cannot be interpreted and therefore a 'positive' D-dimer may not be consistent with a VTE in pregnancy. In addition, given the hypercoagulable state of pregnancy, these patients would have a high pre-test probability. Regardless of the D-dimer result, if there is clinical suspicion then objective imaging is required.

Deep Vein Thrombosis

Compression duplex ultrasound

If there is clinical suspicion of a DVT, compression duplex ultrasound of the lower leg should be undertaken. It uses a combination of B-mode ultrasound during venous compression to visualize a blood clot and colour-doppler to detect abnormalities in venous flow. A duplex ultrasound is simple to perform and carries no risk of radiation to the mother or fetus. Treatment can be discontinued in the presence of a negative ultrasound and a low level of clinical suspicion. However a high level of clinical suspicion should warrant a repeat ultrasound in 7 days. If an iliac vein thrombosis is suspected (back pain and swelling of the entire limb), magnetic resonance venography (MRV) or conventional contrast venography may be considered.

Women with a suspected PE in addition to signs and symptoms of DVT should initially be investigated for a DVT with compression duplex ultrasound. If ultrasonography confirms the presence of DVT, no further investigation is needed as the treatment for both conditions is the same.

Pulmonary Embolism

Electrocardiogram

The most common abnormality seen on electrocardiogram (ECG) is a sinus tachycardia; however other findings include T wave inversion, S1Q3T3 pattern (which may be a finding in normal pregnancy), right bundle branch block and signs of right heart strain (11).

Arterial blood gas

Arterial blood gas (ABG) analysis may identify a type 1 respiratory failure secondary to a ventilation-perfusion mismatch. In addition, a respiratory alkalosis may be present due to an increased respiratory rate leading to hypocapnea.

Chest x-ray

A chest x-ray (CXR) should be performed prior to any further imaging to identify pulmonary disease and exclude differential diagnoses such as pneumonia, pneumothorax and lobar collapse. It also can identify non-specific features suggestive of a PE such as atelectasis or unilateral pleural effusion. Fetal exposure to radiation from a CXR is minimal (less than 0.01 mSv) at any gestation and women should be reassured accordingly (9).

Echocardiogram

A transthoracic echocardiogram (ECHO) is recommended in patients who have any signs of cardiovascular or respiratory comprise. Right ventricular dilation, tricuspid regurgitation or abnormal septal motion (paradoxical left ventricle bulging) all indicate right ventricular failure and are very suggestive of a large PE (11). This can aid clinicians in patients who are candidates for thrombolysis (see massive PE below).

Diagnostic imaging

A ventilation/perfusion (V/Q) lung scan and computerised tomography pulmonary angiogram (CTPA) are diagnostic imaging modalities for PE. The choice between a V/Q scan and a CTPA is difficult and depends on a number of factors such as local availability, hospital protocol, initial x-ray results, co-morbidities and patient preference.

In the presence of a normal CXR, a V/Q scan is preferred. The perfusion element of the V/Q scan should be performed first, given that if this is normal then the ventilation element can be omitted. However, if a woman has underlying respiratory disease or an abnormal CXR, a CTPA is indicated due to the likelihood of an inconclusive result with a V/Q scan. A CTPA is also more readily available and so if urgent diagnosis is required it should not be delayed. In addition, a CTPA can identify other pathology such as pneumonia and pulmonary oedema.

V/Q scans on the other hand are reported as low (normal), intermediate or high probability of a PE. A planar V/Q scan is the standard imaging modality of choice in most hospitals. A V/Q single-photon emission computed tomography (SPECT) is, however, considered diagnostically superior to a planar V/Q scan and is the preferred option when available (12). This is because a V/Q SPECT is associated with a greater specificity and sensitivity as well as lower maternal radiation doses (12,13).

The patient should be informed of the risks of each imaging modality to her and the fetus. The fetal radiation exposure associated with V/Q and CTPA is 0.5mGy and 0.1mGy respectively (10). Therefore a V/Q scan is associated with increased fetal exposure to radiation and increases the possibility of childhood cancers up to the age of 15 by 0.3% above their background risk (3,10). This equates to an additional risk of 1 out of 280,000, compared with 1 out of 1,000,000 for CTPA, to a background risk of childhood cancer of 140 out of 1,000,000 per year (14).

On the other hand, a CTPA exposes the maternal breast tissue to high radiation doses (up to 20mGy) and this is associated with an increased risk of breast cancer. For example, exposure of breast tissue to 10mGy of radiation is estimated to increase her lifetime risk of developing breast cancer by 13.6% above her background risk (3). The radiation dose depends on breast size, the technique used and the age of the woman – the risk of cancer being greater in younger women.

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A family history of breast cancer and recent chest CT scans should be taken into account. It is therefore essential to ensure any decision is made within a multi-disciplinary team approach together with the patient.

Box 3 summaries the risk and benefits of CTPA and V/Q imaging.

V/Q Scan
· Reduced exposure of the maternal breasts to radiation. · Increased exposure of the fetus to radiation (by up to 5 times greater than for a CTPA) – which may lead to a slight increased risk of childhood cancer up to the age of 15 (3). · HOWEVER since the background rate of childhood cancer is low and therefore the absolute risk remains very small.
CTPA
· Reduced Exposure of the fetus to radiation. · Increased exposure of the maternal breasts to radiation (up to 150 times greater than for a V/Q scan) – which may increase her lifetime risk of breast cancer by up to 13.6% (3). · HOWEVER the background risk for a 25-year-old developing breast cancer in the following 10 years is 0.1% and therefore the risk increases by only 0.0136% (3).

Box 3: Comparison of imaging techniques in pregnancy for the investigation of VTE.

A negative CTPA or V/Q in the presence of a high level of clinical suspicion must lead to repeat or alternative testing. Anticoagulant therapy must be continued until a PE can be confidently excluded.

Management

Anticoagulation

Any woman with signs and symptoms suggestive of a VTE should be commenced on anticoagulant treatment until the diagnosis can be excluded, unless there is a significant contraindication. Subcutaneous LMWH is usually the drug of choice and is safe to use in pregnancy as it does not cross the placental barrier. The treatment dose of LWMH should be based on the woman's booking or early pregnancy weight and a once or twice daily dosing regime can be prescribed.

Lower doses of LMWH should be prescribed if the creatinine clearance is <30ml/minute. In those women at risk of bleeding in whom a VTE in clinically suspected, LMWH should be held until further investigations can confirm the diagnosis. Careful consideration is then needed in order to balance risks of clotting or haemorrhage.

Box 4 summerises the conditions in which anti-coagulation must be cautiously considered.

• Active antenatal or postpartum bleeding **• Women considered at increased risk of major haemorrhage e.g. placenta praevia** **• Known bleeding disorders e.g. haemophilia, von Willebrand's disease or acquired coagulopathy** **• Severe thrombocytopenia** **• Severe renal impairment** **• Severe liver impairment**

Box 4: Conditions in pregnancy and the puerperium in which LMWH should be cautiously considered (6)

LMWH, when compared to unfractionated heparin, has been shown to be more effective at treating VTE and is associated with fewer complications such as haemorrhage or heparin-induced thrombocytopenia (HIT) (6). It has also been associated with a lower rate of VTE recurrence (3). Intravenous unfractionated heparin is commonly used in the acute management of VTE with cardiovascular compromise.

Its benefits include accurate drug administration through regular activated partial thromboplastin time (aPTT) measurements. Subcutaneous unfractionated heparin is as effective as intravenous unfractionated heparin – however has a slower time of onset and absorption is further reduced depending on the amount of subcutaneous fat present. It also requires regular aPTT measurements.

Side effects of heparin are usually minimal however they are seen more commonly with unfractionated heparin than LMWH. Painful, localized skin reactions and bruising are the most common side effects reported. Heparin-induced thrombocytopenia is rare. With long-term use patients are at risk of heparin-induced osteoporosis and fractures as well as thrombocytopenia. In women who are unable to tolerate heparin due to allergic skin reactions, an alternative LMWH can be prescribed, although the cross-reactivity rate to a different preparation is common (6,9).

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Vitamin K antagonists such as warfarin should not be used antenatally because of their adverse effects on the fetus. Vitamin K antagonists readily cross the placenta and can cause adverse pregnancy outcomes such as miscarriage, prematurity, low birth weight, neurodevelopmental problems and fetal and neonatal bleeding. Warfarin can, however, be considered as a treatment option in the postnatal period. Due to limited experience and lack of safety data, the use of direct oral anticoagulants (DOACs) such as rivaroxaban, dabigatran and apixaban should be avoided in pregnancy and breastfeeding.

During the initial management of DVT, the affected leg should be elevated and graduated elastic compression stockings should be applied to reduce oedema. Mobilisation should be encouraged. An inferior vena cava filter should only rarely be considered in obstetric patients with iliac vein VTE at risk of PE, recurrent VTE despite treatment with anticoagulation or in those women with absolute contraindications to anticoagulation.

Massive life-threatening PE

Any woman with a massive life-threatening PE in pregnancy or the puerperium with signs and symptoms of collapse or shock (systolic arterial hypotension <90mmHg), must be managed as a medical emergency. Patients should be managed by an experienced multi-disciplinary team involving senior obstetricians, intensivists, physicians and radiologists.

A bolus of unfractionated heparin should be given in the first instance as it has a short half-life and can be cleared in situations where delivery, surgery, or thrombolysis is necessary. An urgent portable echocardiogram or CTPA should be arranged within one hour of presentation. If massive PE is confirmed or, in extreme circumstances prior to confirmation, immediate thrombolysis should be considered. In life-threatening PE an embolectomy or thoracotomy may be considered if where facilities and expertise are readily available.

In the event of cardiac/respiratory arrest, cardio-pulmonary resuscitation (CPR) should be commenced with a left lateral tilt of the pelvis to prevent aortocaval compression by the gravid uterus. This can be done using a pelvic wedge or manual displacement of the uterus to the left (Figure 1). If after 5 minutes there is no return of circulation, a perimortem caesarean section should be performed if pregnancy is more than 20 weeks (15).

The diagnosis and management of a DVT and PE in pregnancy and the puerperium is summerised in Figures 2 and 3.

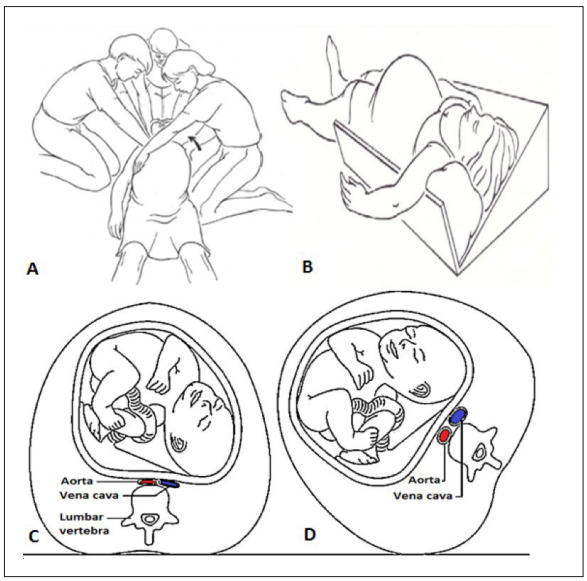

Figure 1: Left lateral tilt in cardiac arrest (15)

A – Manual displacement of the uterus to the left.

B – Left lateral tilt with a pelvic wedge.

C – Aortocaval compression by the gravid uterus in the supine position.

D – Aortocaval decompression caused by displacement of the gravid uterus in the left lateral position.

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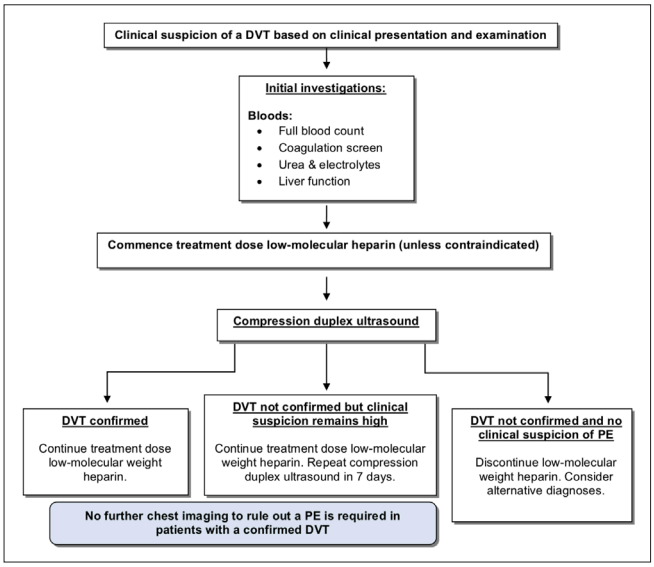

Figure 2: Diagnosis and management of a suspected DVT in pregnancy and the puerperium.

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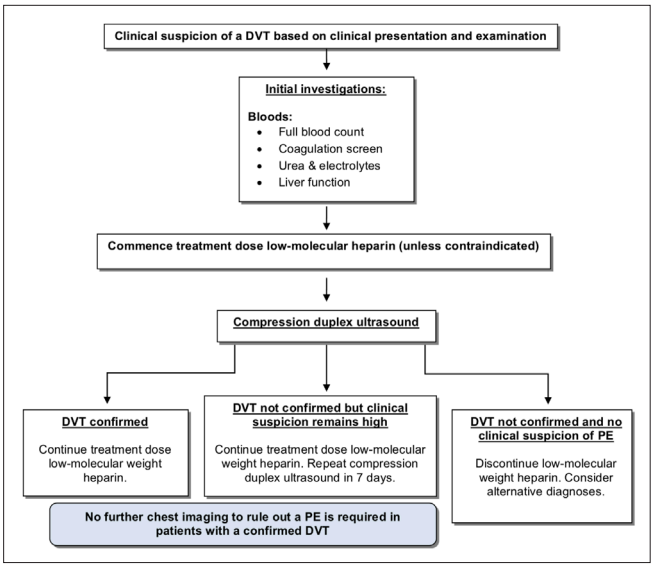

Figure 3: Diagnosis and management of a suspected PE in pregnancy and the puerperium.

Duration of treatment

Treatment with treatment dose LMWH should be continued for the duration of pregnancy and until at least 6 weeks postpartum (7). A minimum total duration of 3 months is required and the decision to stop should be made by the multidisciplinary team. This is because of the high risk of reoccurrence in obstetric patients. Treatment should be extended in women with recurrent VTE or are at high risk of recurrent VTE. Women can be taught how to administer LMWH and given appropriate sharp disposal bins.

Discharge and antenatal follow up

Women can be discharged from hospital once stable and managed in the outpatient setting for the remainder of pregnancy. Peak anti-Xa activity monitoring is recommended in women at extremes of body weight (less than 50kg and more than 90kg) or with other complicating factors (renal impairment or recurrent venous thromboembolism). There is no need to monitor platelet count (3).

Postnatal Assessment

Women who developed VTE in the antenatal or puerperium period should be reviewed postnatally once anticoagulant treatment has been discontinued. This can take place at an obstetric medicine clinic or a joint obstetric haematology clinic.

Assessment of post-thrombotic venous damage can be made and advice about the need for thromboprophylaxis in future pregnancies and other times of increased risk can be given. Thrombophilia testing is suggested, given that almost half of all women who have an episode of VTE in pregnancy will have an underlying heritable or acquired thrombophilia (3). Advice on avoiding combined-hormonal contraception should be offered.

Postnatally women can be offered a choice of LMWH or oral anticoagulation with warfarin from day 5 postpartum or longer if there is a risk of postpartum haemorrhage. Women however must be advised that they will need regular international normalised ratio (INR) blood testing whilst on warfarin, in particular in the first 10 days of treatment. LMWH, unfractionated heparin and warfarin are not contraindicated in breastfeeding. DOACs should be avoided unless the mother is not breastfeeding.

Women with a DVT should be encouraged to remain mobile and continue using their compression stockings.

Post-thrombotic syndrome

Women should also be assessed and given advice on post-thrombotic syndrome. This is a condition characterized by chronic, persistent leg swelling, pain, heaviness, dependent cyanosis, venous eczema, and in severe cases, venous ulceration. It can occur in patients who have experienced a DVT up to 12 months following the acute episode (3).

It occurs following damage to the lumen of the vein following the presence of a thrombus. LMWH has been shown to be associated with a significantly reduced rate of post-thrombotic syndrome (3,9). The use of compression stockings worn for 2 years following the acute event has also been shown to be effective in preventing post-thrombotic syndrome (9).

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Conclusion

It is important to have a high index of suspicion when assessing a woman presenting with symptoms or signs of VTE during pregnancy or the puerperium. Compression duplex ultrasound is the diagnostic investigation of choice for DVT whilst ventilation/perfusion scanning or computerised tomography pulmonary angiogram are the preferred diagnostic investigations in PE.

Both CTPA and V/Q scanning are associated with risks to mother and fetus and a multi-disciplinary team approach is essential in determining the best imaging modality. Low-molecular weight heparin is the treatment of choice and is considered safe in pregnancy and breastfeeding. Assessment postnatally is essential to determine the duration of anticoagulation and council for future pregnancy and contraceptive use.

Key learning points

- Clinical suspicion should remain high for a venous thromboembolism in pregnancy and it is important to remember that the typical symptoms and signs may not be present.
- Unless contraindicated, any woman with clinical features suggestive of venous thromboembolism should be commenced on treatment dose low-molecular weight heparin until the diagnosis can be excluded.
- The choice between a V/Q scan and a CTPA is difficult and depends on a number of factors such as local availability, hospital protocol, initial x-ray results, co-morbidities and patient preference.
- Women with a confirmed venous thromboembolism should receive treatment dose low-molecular weight heparin until the end of their pregnancy and continue for at least 6 weeks postpartum. A minimum of 3 months treatment should be given in total.
- Thrombophilia testing together with advice regarding future pregnancies and contraception should be offered once anticoagulation has been discontinued.

Test yourself questions

1. A 30-year-old pregnant woman (34 weeks gestation) is admitted to the acute medical unit with sudden onset shortness of breath and pleuritic chest pain. She has no past medical history and this is her first pregnancy.

On examination, respiration rate is 25bpm and oxygen saturations is 94% on room air. Chest auscultation demonstrates good air entry with no added sounds. Her heart sounds are normal, with a heart rate of 112bpm and blood pressure is 105/60. An ECG shows sinus rhythm. What is the next appropriate investigation?

A. Ventilation/Perfusion (V/Q) scan

B. Peak flow measurement

C. Chest x-ray

D. CT Pulmonary Angiogram (CTPA)

E. Compression duplex ultrasound of the lower legs

2. A 39 year old woman who is 28 weeks pregnant presents with swelling of her left calf after she returned from Australia for a family visit. Her left calf circumference is 3.5cm greater than her right calf. A full blood count and renal profile are normal. Compression duplex ultrasound is pending, however this can not be performed until the following day. What is the next step in management?

A. Commence prophylactic dose LMWH based on the patients booking or early pregnancy weight

B. Commence treatment dose LMWH based on the patients booking or early pregnancy weight

C. Wait for confirmation of a DVT before starting treatment

D. Request that the patient remains bedbound until the ultrasound has taken place

E. Check D-dimer

Answers

1. Answer: C - Chest x-ray.

It is likely that this woman has had a pulmonary embolism given the acute nature of the shortness of breath and pleuritic chest pain, together with tachycardia and reduced oxygen saturations. The correct way to investigate a pregnant woman with a possible pulmonary embolism is to first perform a chest x-ray.

This is vital to ensure other diagnoses such as pneumonia and pneumothorax are identified. If the chest x-ray is normal and there is still clinical suspicion of a PE, a ventilation/perfusion scan should be performed. Compression duplex ultrasound of the lower legs should only be performed if there are signs or symptoms of a DVT.

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2. Answer: B - Commence treatment dose LMWH based on the patients booking or early pregnancy weight

This patient has clinical features of a DVT. This has most likely been caused by the long haul flight from Australia. There is no suggestion of any contra-indications to LWMH and therefore starting treatment is appropriate. She should continue on anticoagulant treatment until the diagnosis can be excluded. The treatment dose of LWMH should be based on the woman's booking or early pregnancy weight.

LMWH is considered safe in pregnancy as it does not cross the placenta and therefore lower doses of LMWH are not needed in pregnancy unless the creatinine clearance is <30ml/minute.

This is a common scenario in the investigation of DVT, with compression duplex ultrasound imaging only being performed within working hours. Many patients are managed within an ambulatory pathway.

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A CASE OF ACUTE PSYCHOSIS

M Butler, S Ali, EL Sampson

Abstract

We describe the case of an 80-year-old man who presented to the emergency department with symptoms of acute psychosis. His presentation followed a period of deteriorating day-to-day functioning, worsening mental health and increasing social withdrawal. His subsequent admission presented complex diagnostic and management challenges to medical and psychiatric teams.

Case Report

HT was an 80-year-old man found at home by police. His brother had contacted the emergency services with growing concerns for HT's safety as he had not heard from him for several months. HT was found with an unkempt appearance in a cluttered environment, full of items that had been hoarded over several years. Messages reading 'no friends, only spies' and 'real friends don't turn nasty' were scrawled on the walls.

HT was brought into the emergency department, in his best interests, for assessment and treatment. The clerking doctor identified HT's disorientation and agitation, and that he was at risk of absconding. He was given 5 mg of intramuscular (IM) haloperidol.

A CT head showed evidence of mild small-vessel white matter disease, but this did not fully account for his symptoms and presentation. Initial blood tests showed only a moderately raised C-reactive protein of 44 mg/L, with nil else of note. The patient was admitted under the medical team for further investigations.

Collateral histories were obtained from HT's brother and a neighbour, who described HT as a pleasant gentleman who 'kept himself to himself'. It emerged that HT had experienced persecutory delusions in the past, for example in the belief that the Freemasons were trying to break in to his house, but these had not previously warranted investigation.

HT remained disorientated and exhibited a severe non-fluent expressive dysphasia. This was clearly unusual for him, and he was referred to the hospital's liaison psychiatry team. He underwent neuropsychiatric tests and it was apparent that his orientation to time, place and person fluctuated. Importantly, the patient was able to list the months of the year backwards, indicating preserved attention and therefore making a diagnosis of delirium less likely (1).

It was not possible to complete full detailed cognitive testing because of dysphasia, however there were no clear signs of clinical depression. The team concluded that the patient was suffering from late-onset acute psychosis of unknown aetiology.

During admission, the patient's bright mood and engaging manner contrasted with his inability to coherently answer simple questions. He was noted to have logopenia, a distinct form of expressive dysphasia, with sentences tailing off after one or two words. The speech problems, development of symptoms relatively rapidly at an older age, functional decline and self-neglect suggested an organic cause for this presentation. Differential diagnoses included neurodegenerative diseases, particularly frontotemporal lobar degeneration or cerebrovascular disease, encephalitis, paraneoplastic or autoimmune disease.

A series of further investigations were requested at this point to attempt to determine the cause of these ongoing symptoms. A lumbar puncture showed only a raised cerebro-spinal fluid protein. Test results for bacterial or viral meningo-encephalitis, and autoimmune causes, e.g. anti-NMDA encephalitis, were negative. Electroencephalography (EEG) recordings suggested non-convulsive status epilepticus, and the patient was loaded on a range of anticonvulsive medications, including levetiracetam, sodium valproate and carbamazepine.

Neurological review of an MRI head taken suggested cortical ribboning in the left hemisphere, an sign which strongly indicative of sporadic Creutzfeldt-Jacob Disease (sCJD), a fatal prion disorder (2).

Twenty-six days post-admission, HT's Glasgow Coma Score (GCS) began to fall. An NG tube was inserted after a Speech And Language Therapy (SALT) review suggested deteriorating swallow, an important neurological sign in this patient's case. A Deprivation of Liberty Safeguarding (DOLS) was completed in order to allow treatment (and where necessary restraints) in his best interests. Mittens were subsequently put on to prevent HT removing the NG tube. After a two-week period of declining GCS, it was evident that he patient required escalation of medical treatment and care.

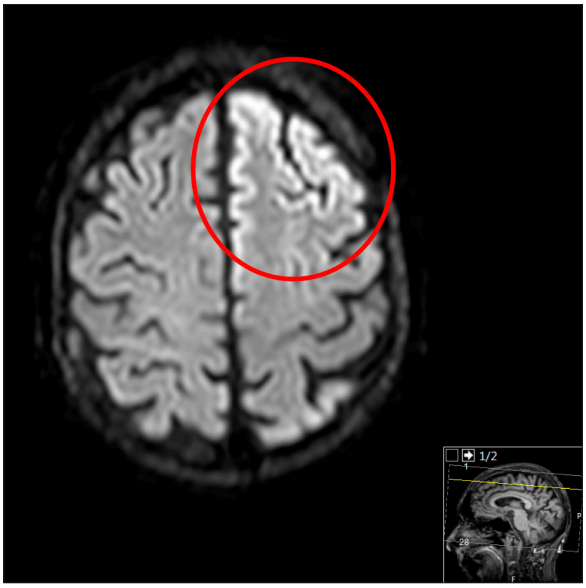
At this point HT's ceiling of care was considered, and after discussion between the teams involved in his care and his brother, it was decided that the patient should have a Do Not Resuscitate form completed, as well as treatment being escalated to limited high-dependency unit (HDU) input.

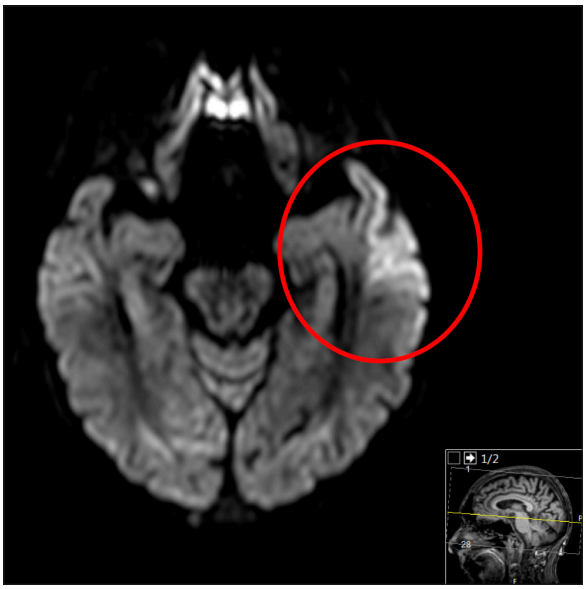
Further EEG recordings indicated that HT had generalised periodic discharges, mostly originating from the left hemispheric fronto-temporal region, an area of the brain which corresponded with the area of cortical ribboning seen on the MRI head. The EEG pattern suggested a progressive encephalopathic picture with prion disease high on the list of differential diagnoses.

HT underwent further decline whilst on HDU, developing a hospital acquired pneumonia. His ability to maintain his airway was compromised, and he died 49 days post-admission.

A CASE OF ACUTE PSYCHOSIS

M Butler, S Ali, EL Sampson





Images 1 and 2: These axial DWI images show evidence of cortical ribboning in the fronto-temporal regions. This sign is indicative of sCJD. The left-hemispheric position may explain the patient's expressive dysphasia. The EEG recordings highlighted corresponding areas of the brain as the sources of electrical discharge.

Discussion

This case provides examples of where a novel psychiatric presentation led to a diagnostic challenge for a variety of hospital specialities.

Sporadic Creutzfeldt-Jakob Disease (sCJD)

The likely underlying cause of this presentation was sporadic Creutzfeldt-Jakob Disease (sCJD). This is a disease caused by defective proteins, known as prions. In the sporadic forms of the disease, the pathogenic prion protein spontaneously arises in the neurological tissue. The misfolded prion proteins form beta-pleats, which are insoluble. This leads to precipitation and accumulation of amyloid aggregates in the brain, similar to those found in other neurodegenerative diseases, for example Alzheimer's disease, which can cause psychiatric presentations (3).

Prion diseases are very rare. The sporadic form (sCJD) is the most common, and typically affects those aged 45-75. Presentation of prion diseases usually encompasses a rapidly progressing dementia syndrome which affects multiple aspects of physical and psychological functioning. There is usually an insidious onset, featuring non-specific neurological and psychiatric symptoms. These primary symptoms, for example hoarding, are key alarm bells for frontal lobe pathology.

The illness course is varied, but it is not uncommon to see florid deterioration over as short a time as a few weeks. Loss of neurological coordination may follow, meaning patients lose the ability to perform complex coordinated movements such as swallowing. These are then proceeded by a rapid decline towards the terminal stages of illness (4).

Diagnostic challenges

There were many diagnostic challenges faced in this case: the lack of reversible causes of delirium found in blood tests, a negative septic screen, and an unremarkable CT head. HT also demonstrated preserved attention, a key finding pointing away from his initial working diagnosis of delirium. These negative investigations meant that a firm diagnosis remained elusive.

It is helpful to seek an opinion from the mental health team early with disorientated, confused or agitated patients where the presentation is atypical and the cause is not clear, as they may help in establishing whether symptoms may have an organic cause. It may be difficult, for example, to distinguish delirium from psychosis in an acute setting. Collateral history is also vital in gaining history of self-neglect, apathy or problems in the home such as hoarding.

A CASE OF ACUTE PSYCHOSIS

M Butler, S Ali, EL Sampson

Indications for medical sedation

HT was sedated in the emergency department. Doctors must always consider the risks and benefits when using medical restraint. The side effects profile of the medications should be weighed up against the potential reduction in harm to patients and those around them in the acute phase.

Sedation should always be prescribed with caution in agitated patients. Note that antipsychotics should be avoided in the elderly and in people with neurodegenerative disease, particularly those with Parkinson's disease or Dementia with Lewy Bodies.

If necessary, sedation should be given with medicines such as lorazepam, rather than antipsychotics such as haloperidol. With agitated patients, start at the lowest dose and titrate upwards, and only prescribe short courses to prevent over-sedation or dependence. (5).

Medico-legal aspects

HT was subject to a (DOLS - Deprivation of Liberty Safeguards). These should be utilised when a patient lacks capacity to consent to their care, and require restriction or restraint in order to receive treatment under the Mental Capacity Act (2005). It is of note that this Act, and the Mental Health Act (1983), apply to England and Wales only; the rest of the United Kingdom uses separate legal framework (however in practice similar principles apply).

These DOLS are an important part of the foundation doctor's work. They should be completed clearly and placed in the patient's notes as well as being sent to the local authority (6).

Consideration of this patient's autonomy was vital in this case. HT lacked the capacity to make many, and ultimately any, decisions about his care. Therefore, it was imperative that the multiple teams who cared for this patient had good communication and clear documentation to continue to act in his best interests, consulting with next of kin wherever possible. Documenting the medical rationale for any intervention (or lack of) is imperative, as well as the outcome of consultations with a patient's next of kin.

Multiple choice questions

1. Under which section of the Mental Health Act (1983) are doctors, including fully registered foundation doctors, able to hold patients against their will for 72 hours in order for psychiatric assessment in hospital?

a) Section 135

b) Section 136

c) Section 4

d) Section 5(2)

e) Section 5(4)

2. What finding would best support a diagnosis of delirium as opposed to psychosis in an acutely confused patient?

a) Inability to count backwards 10-1

b) Persecutory delusions

c) Younger age

d) Auditory hallucinations

e) Family history of psychosis

3. What pharmacological class does haloperidol belong to?

a) First generation antipsychotic

b) Anticholinesterases

c) Dopamine agonists

d) Serotonin-noradrenaline reuptake inhibitors

e) Central nervous system stabilisers

4. Of the following, which is the preferred first-line pharmacological therapy for rapid tranquilisation of a non-psychotic patient?

a) IV diazepam 10mg

b) IM olanzapine 2.5mg

c) PO haloperidol 10mg

d) IV morphine 5mg

e) PO lorazepam 1mg

5. What proportion of CJD diseases are thought to be iatrogenic?

a) 0%

b) 5%

c) 15%

d) 25%

e) 50%

A CASE OF ACUTE PSYCHOSIS

M Butler, S Ali, EL Sampson

Answers

1. Answer – D

Patients can be held in hospital by doctors who are concerned about their acute mental state sufficiently that they believe that the patient poses an immediate risk to themselves or others (7). Please note that the Mental Health Act (1983) applies to England and Wales only, with different but similar legal framework in the rest of the United Kingdom.

2. Answer – A

This test, as well as counting the months of the year backwards, are sensitive indicators of lack of attention which is characteristic of delirium (1).

3. Answer – A

Haloperidol is a first generation antipsychotic.

4. Answer – E

Oral medications are first line for rapid tranquilisation. If the patient is exhibiting no features of psychosis, lorazepam is indicated. Antipsychotics such as haloperidol or olanzapine are indicated if there is psychosis present. IV diazepam can be used but only in exceptional circumstances (8).

5. Answer – B

This occurs for example in transplantation of neurological tissue, for example dura, corneal grafts or pituitary hormone, infected with prion disease into a healthy recipient (8).

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DOCTORS FOR DOCTORS: A REFLECTIVE ARTICLE ON THE ROLE OF OCCUPATIONAL HEALTH IN MENTAL WELL-BEING

P Jha, R Janarthanan

Doctors will inevitably experience difficulties with their own health during their training. Transition periods are a particularly vulnerable time for mental health issues, especially when transitioning from medical students to first time doctors (1,2).

Most have little understanding of the process of seeking healthcare as a doctor until they themselves are engaged in it.

Case Example

MJ is a Foundation Year 1 doctor who has kindly allowed us to share her experience with you. MJ noticed she was getting increasingly fatigued and struggled to get through the day. This started to impact on her ability to carry out her regular activities and she had little energy to socialise. She complained of tiredness to her General Practitioner (GP) who ordered blood tests but the results were normal.

MJ previously suffered from depression and became wary that these symptoms may indicate the early signs of a relapse. She decided to see Occupational Health (OH) as they were already aware of her background from a Transfer of Information form. They offered her adjustments to her existing training programme including removing night shifts from her rota and providing regular follow-up appointments. They advised that she declare her involvement with OH on e-Portfolio and inform her Foundation Trust Programme Director and the Director of Medical Education.

MJ learnt that should further symptoms arise, a legal requirement meant that an independent Psychiatrist would need to review and diagnose her in addition to the OH doctor. MJ's previous rotation was in Psychiatry and she expressed concerns that she could be assessed by a Consultant she had worked alongside. In response to this, OH offered an assessment by a retired Psychiatrist who often sees doctors in her position as an alternative.

After her initial appointment MJ took annual leave every 2 weeks as advised by OH and declared she was under the care of OH on her e-Portfolio. She passed her ARCP without incident, attended her OH follow up one month later and self-discharged as she was handling her tiredness better.

Stigma

Stigma of mental illness is a pervasive phenomenon which exists in most cultures and communities, even amongst health professionals in the UK (3). It can impact on patient and physician behaviour in various ways including withholding help and avoidance behaviour (4).

MJ shared with us that although she would not be concerned if her physical health records were available on a GP electronic system she considered her mental health records to be more sensitive. Therefore, she chose to seek help from OH which could consult her on a more confidential basis. She also learnt that she needed to make declarations and inform seniors despite not having a formal diagnosis. Whilst these steps may be necessary to protect the health of patients they can detract from the care received by the patient, in this case, MJ.

Self-stigma can have damaging effects on self-esteem but also result in a feeling of injustice4. MJ has shared her story partly to reduce levels of stigma in the hope that awareness of her case can lead to candid conversations and create a sense of openness prompting a change in perception of mental health illness amongst medical staff.

Confidentiality

Confidentiality is one of the key principles of Good Medical Practice. The 2017 General Medical Council guidelines outline the possible justifications for breaking this confidentiality including for the direct care of the patient and for the protection of others (5).

MJ chose not to go to her GP to seek further help in an attempt to preserve her confidentiality. She was concerned that a colleague may stumble upon her records in the future. She described a sense of unfairness in the provision of care to her and the care she provided to her own patients on a daily basis. The possibility of a breach in confidentiality in this case would not have been justified to support MJ's care or for the protection of others.

It raises the spectre of stigma and issues around data protection principles. The perceived benefit here of an occupational health department is their ability to provide a greater level of confidentiality as they offer various ways of anonymising records.

DOCTORS FOR DOCTORS: A REFLECTIVE ARTICLE ON THE ROLE OF OCCUPATIONAL HEALTH IN MENTAL WELL-BEING

P Jha, R Janarthanan

Fear of disciplinary action

Despite growing prevalence of mental health problems amongst doctors, many are fearful to seek help. MJ reported her own fears stemmed from possible judgements on whether seeking help may affect her career progression. Maintaining trust in our profession requires safe and compassionate care which carefully balances the need for fitness to practise investigations and protecting doctors' well-being.

Conclusion

Prior to this experience, MJ had been unaware of the confidential services OH can offer such as rota adjustments and psychological therapies. Further to this, an integral part of their care is ensuring doctors' health does not compromise patient safety. Doctors are entitled to make informed decisions about seeking healthcare especially at this vulnerable point in training.

This can be achieved by providing appropriate education which focuses on confidentiality, data protection, training modifications and consequences of seeking care. We hope that sharing this experience raises awareness of prevalent issues and opens a dialogue between medical trainees and their healthcare providers to tailor the available services more closely to existing needs.

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ALCOHOL MISUSE IN OLDER ADULTS

L Bolton, J Bolton

Abstract

Alcohol misuse in older adults is often overlooked. We present two cases of older patients whose hospital presentations were contributed to by alcohol dependence and complicated by cognitive impairment. We discuss the importance of an age-sensitive approach to the assessment and management of problem drinking in older adults.

Case Histories

Case 1

Mr SM was a 73-year-old man who was admitted to hospital following a fall. He had sustained a fractured neck of femur for which he underwent surgical repair. Over the preceding two years he had presented to the Emergency Department on several occasions following falls and head injuries.

His wife reported that he had had a high alcohol intake since his early adult life. Although his consumption had reduced somewhat over recent years, his wife estimated that prior to admission he had been drinking 36 units of alcohol per day. She noted that he was often tremulous prior to his first drink in the morning. She also described how he had experienced increasing memory difficulties over the year before admission.

On cognitive testing Mr SM was markedly impaired. He had severe global impairment including deficits in the domains of orientation, attention and immediate recall. There was disproportionate impairment in his delayed recall (short term memory) consistent with the collateral history.

Case 2

Mrs JL was an 85-year-old lady who was admitted to hospital with acute confusion and drowsiness. She had a previous diagnosis of Alzheimer's-type dementia as well as several physical co-morbidities.

Mrs JL was treated for a urinary tract infection, but over the next two days she became increasingly confused and tremulous. On cognitive testing she had severe impairment including deficits in orientation, attention, memory and aspects of language.

This prompted staff to seek collateral history from her family. They expressed their concern about the patient's alcohol intake prior to admission, estimating that she had been drinking 60 units per day. Alcohol was purchased for her by a neighbour, at Mrs JL's request.

Discussion

There is increasing concern about drinking by older people, because of rising levels of alcohol consumption in those over 65 years and evidence that drinking is more likely to have a detrimental effect on health with increasing age.(1,2) Excessive alcohol consumption in older adults is often overlooked and fewer than 10% of people over 60 years of age receive appropriate support for problem drinking.(3) Those with alcohol dependency have been described as 'invisible addicts'.(4)

Clinical Assessment

A low level of detection of problem drinking in older adults may be contributed to by an erroneous assumption that alcohol misuse is uncommon in this age-group.

In addition, individuals may not report an excessive alcohol intake due to denial about the problem, perceived stigma about drinking, lack of awareness of safe drinking levels, and, as in our cases, cognitive impairment.

In clinical practice, we should be alert for any clues that may indicate previously unidentified alcohol misuse, particularly in cases such as ours where history from the patient is unreliable. It is recognised that older adults in alcohol withdrawal may present with behavioural problems rather than typical withdrawal symptoms.(3) Our cases illustrate two common complications of alcohol misuse in older adults, falls and cognitive impairment; others include poor nutrition and incontinence.

Screening

The most widely used screening instrument for problem drinking that is validated for an older adult population is the Short Michigan Alcoholism Screening Test – Geriatric Version.(3,5) However, if alcohol misuse is suspected it is preferable to proceed directly to a full assessment of alcohol use and possible dependence. In addition, all older people admitted to hospital should be screened for delirium.

History taking

Key areas to explore in a patient with alcohol misuse are listed in Figure 1. As in our cases, seeking collateral history is an imperative. Potential sources of information include family, carers, the patient's general practitioner, hospital records and discharge summaries, and results of previous investigations.(3)

ALCOHOL MISUSE IN OLDER ADULTS

L Bolton, J Bolton

Alcohol consumption

- *Age at first use and chronology of alcohol consumption over the patient's life*
- *Weekly alcohol consumption and daily pattern of drinking*
- *Symptoms of dependency, including physical withdrawal symptoms and relief of these by drinking*

Past psychiatric history

- *Previous contact with alcohol services, including health services, non-statutory services and support organisations such as Alcoholics Anonymous*
- *Psychological and neuropsychiatric complications of drinking, e.g. depressive illness, cognitive impairment*

Past medical history

- *Nutrition*
- *Physical complications of drinking, e.g. liver disease, falls, head injuries*

Social history

- *Activities of daily living*
- *Social support and social isolation*
- *Self-neglect*

Forensic history

- *Charges and convictions related to drinking*

Figure 1: Areas to explore when taking a history from an older adult with problem drinking.

Mental state examination

The commonest abnormalities of mental state that arise in older people with problem drinking are mood disorders, delirium, and cognitive impairment.(3) Mrs JL had acute cognitive impairment due to delirium, and both she and Mr JL had a history of chronic cognitive impairment .

Cognitive testing at the bedside should cover a range of domains, most commonly tests of orientation, attention, and memory. A number of standardised screening instruments suitable for use with hospital patients are available, such as the Mini-Mental State Examination, which was used with the patients discussed.(6) The advantages of such instruments include the potential to grade the severity of impairment and to measure changes in cognition over time.

Physical examination

Particular areas to assess or cover in the physical examination of an older adult with alcohol misuse are listed in Figure 2.(3)

- **Gait, balance, use of walking aids**
- **Self-care and hygiene**
- **Signs of alcohol-related cardiovascular disease, e.g. hypertension, cardiac arrhythmia, ischaemic heart disease**
- **Evidence of chronic liver disease, e.g. palmar erythema, spider naevi, hepatomegaly, jaundice**
- **Peripheral and central neurological manifestations of alcohol misuse, e.g. cognitive impairment, peripheral neuropathy, cerebellar syndrome**
- **Evidence of injury associated with intoxication, e.g. bruising**

Figure 2: Areas to cover as part of the physical examination of an older adult with alcohol.

Investigations

The need for and choice of physical investigations will be indicated by the history and examination. Screening blood investigations should include a full blood count, and tests of liver and renal function. If there is a history of chronic cognitive impairment or recent head injury, the need for brain imaging should also be considered.

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Differential Diagnosis

Alcohol dependency

Both patients discussed exhibited physical symptoms of alcohol withdrawal, particularly tremulousness. The occurrence of withdrawal symptoms is one of the key features of alcohol dependence syndrome, as listed in Figure 3.(7)

1. Narrowing of the drinking repertoire – an increasingly stereotypical daily drinking pattern

2. Salience of drink-seeking behaviour – prioritisation is given to maintaining alcohol intake

3. Increased tolerance to alcohol

4. Repeated withdrawal symptoms – frequency and severity vary with the degree of dependence

5. Relief of withdrawal symptoms by drinking

6. Subjective awareness of compulsion to drink

7. Reinstatement after abstinence

Figure 3: The seven key features of alcohol dependence syndrome.

Alcohol withdrawal is a potential cause of delirium in older adults that is often overlooked. It is recognised that older adults withdrawing from alcohol may present with behavioural problems rather than typical withdrawal symptoms.(3) This is particularly likely in patients with pre-existing cognitive impairment, such as Mrs JL.

Delirium tremens

Mrs JL had delirium against a background of dementia. This was probably due to both intercurrent infection and delirium tremens. The latter is a state of delirium that arises about two to four days after a dependent drinker becomes abstinent or reduces their intake.

Alcohol-related brain damage

Both patients under discussion had chronic cognitive impairment. In the context of alcohol-related brain damage this has a number of potential contributory factors (see Figure 4). Patients may have a discrete difficulty in making new memories (amnesic or Korsakoff's syndrome) or more widespread cognitive deficits and associated problems with manging day-to-day tasks (alcohol-related dementia). It is estimated that in the UK about one in 100 people in the general population and one in three heavy drinkers have some degree of alcohol-related brain damage.(8)

- **The toxic effects of alcohol on neurones**
- **Nutritional deficiency due to poor diet and malabsorption, especially vitamin B1 (thiamine)**
- **Cerebrovascular disease**
- **Head injuries sustained due to intoxication**

Figure 4: Causes of alcohol-related brain damage.

In Mr SM's case his wife described a gradual decline in his memory and other aspects of cognition and behaviour, indicative of an evolving dementia. In Mrs JL's case she had a previous diagnosis of Alzheimer's-type dementia. In both cases, alcohol was likely to be a contributory aetiological factor to the dementia and in Mr SM's case it may have been the primary cause.

Treatment

Patients such as ours in acute alcohol withdrawal should be prescribed a detoxification regimen to reduce the potentially medically dangerous consequences, including withdrawal seizures and delirium tremens. Untreated delirium tremens carries a high mortality if untreated, due to such factors as dehydration, metabolic derangement, cardiovascular strain and co-morbid infection. The preferred medication for assisted withdrawal is a benzodiazepine (chlordiazepoxide or diazepam).(9) Patients at high risk of developing or with suspected Wernicke's encephalopathy should also be prescribed parenteral thiamine.(9,10)

Brief interventions for patients with problem drinking, including hospital inpatients, have been demonstrated to be effective, with one in eight recipients making changes to their drinking.(3) One way of delivering such an intervention is to give basic information about alcohol and then advice using the FRAMES approach (see Figure 5).(11)

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Feedback: structured and personalised information about risk and harm

Responsibility: emphasising the patient's responsibility for change

Advice: on making a change to drinking habits

Menu: of strategies for making a change

Empathy: in approach to the patient

Self-efficacy: try to increase the patient's confidence in being able to change their behaviour

Figure 5: The FRAMES structure for giving advice to a problem drinker

Unfortunately, both of the patients we described had chronic cognitive impairment, which meant that they were unable to retain sufficient information for such an approach to be effective. However, we considered longer term strategies, involving their families and carers, to minimise future harmful drinking.

Follow Up

Following clinical assessment, the patient's longer-term care plan should include the management of comorbid conditions such as depression and cognitive impairment, and available social support.

With our patients we focussed on minimising the patients' access to alcohol on return home, and encouraging non-drinking social activities. This required the cooperation of family members and carers, who are an important source of support for older drinkers, particularly in monitoring their intake and facilitating their social interaction.(3)

In both cases, family removed alcohol from the patients' homes before they were discharged from hospital. In Mrs JL's case, the family ensured that a neighbour who had been buying alcohol for the patient as part of a weekly shop did not continue to do so.

Most adults with problem drinking which is recognised during a hospital admission can be referred to specialist community alcohol services for ongoing treatment to help them return to controlled drinking or to remain abstinent. Our patients were unable to participate in individual psychosocial interventions, but specialist services may be able to advise and support families and carers. When treatment is delivered to people in this age group it is as effective as, if not more so than, in younger people.(3)

Professionalism

Where there are concerns about possible alcohol misuse in an older adult, assessment and treatment should focus on the complex relationship between ageing and alcohol misuse.

Exploring the patient's history should be undertaken using a non-judgemental and non-ageist approach, demonstrating respect for the patient's dignity and individuality.(3) The assessment should consider the patient's needs, including any sensory or cognitive impairment.

Older people should not be denied treatment on the basis of their age. Older adults with problem drinking can be effectively treated with approaches similar to younger people and have similar, if not better, outcomes.(3)

As for our patients, care planning should include the management of comorbid conditions such as depression and cognitive impairment. We also considered available social support. Families and carers are an important source of support for older drinkers, particularly in monitoring their intake and facilitating their social interaction.

Clinical Judgement

Our cases highlight the risks of alcohol misuse in older adults being overlooked, particularly in patients with acute or chronic cognitive impairment. However, because older adults are more often in contact with health services than younger people, hospital admission provides an opportunity to identify and treat problem drinking.

A low level of detection of problem drinking in older adults may be contributed to by an erroneous assumption that alcohol misuse is uncommon in this age-group. In addition, older adults may not report an excessive alcohol intake due to denial about the problem, perceived stigma about drinking, cognitive impairment, and lack of awareness of safe drinking levels.(12)

Conclusion

There is a growing awareness of alcohol misuse in older adults. If we are alert for possible indicators of excessive drinking, contact by older patients with health services provides an opportunity for health professionals to identify and successfully treat problem drinking and its consequences.

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Questions

1) Which of the following statements about older adults with excessive alcohol consumption is false?

a) Alcohol misuse is often overlooked by health professionals

b) Fewer than 10% of those over 60 years of age receive appropriate help

c) Drinking is more likely to have a detrimental effect on health with increasing age

d) Treatment is less likely to be effective than in younger people

e) They may not disclose their drinking due to stigma

2) A 78-year-old lady is brought to the Emergency Department following a fall and staff notice that she smells of alcohol. The patient reports drinking two bottles of whisky and two bottles of wine each week. You determine that the bottles of whisky each contain 700ml of which 40% is alcohol. The bottles of wine are 750ml and 14% alcohol. How many units of alcohol is the patient drinking each week?

a) 51

b) 63

c) 66

d) 77

e) 93

3) Which of the following statements about recommended safer drinking levels for adults in the UK is correct?

a) Men and women should not drink more than 14 units of alcohol per week

b) Men should not drink more than 21 units of alcohol per week and women not more than 14

c) Men and women should not drink more than 21 units of alcohol per week

d) Men and women should not drink more than 28 units of alcohol per week

e) Drinking should be confined to three days or fewer per week

4) An 81-year-old man is admitted to a medical ward with a chest infection. He is judged to be dependent on alcohol. There is no evidence of chronic cognitive impairment. Which of the following is the optimal choice for the patient's management?

a. Alcohol withdrawal regimen

b. Motivational interviewing

c. A support group for problem drinkers

d. Individual meetings with an alcohol support worker

e. All of the above

5) Which if the following statements about alcohol-related brain damage is false?

a) Women who drink more than 28 units per week for five years or more are likely to have changes in memory or thinking

b) Men who drink for more than 35 units per week for five years or more are likely to have changes in memory or thinking

c) Alcohol-related brain damage effects about 1:1000 of the UK general population

d) The highest rates of alcohol-related brain damage are in people in their 40s and 50s

e) Women who drink heavily tend to develop problems earlier than men

Answer

1. Answer: d. Treatment is less likely to be effective than in younger people.

When problem drinking is recognised in older adults, treatment is at least as effective as for younger people.

However, a potential barrier to treatment is that specialist treatment services have historically tended not to see many older people or to make specific provision for them.

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2. Answer: d. 77 units.

The formula for calculating the number of units of alcohol is:

Units of alcohol = volume of drink (litres) X percentage of alcohol by volume

In this case the number of units of alcohol in each bottle of whisky = 0.7 x 40 = 28.

The number of units of alcohol in each bottle of wine = 0.75 x 14 = 10.5.

The overall total for the four bottles = (28 X 2) + (10.5 X 2) = 77 units (3).

3. Answer: a. Men and women should not drink more than 14 units of alcohol per week.

The national recommendation, published in 2016, is that it is safest for both men and women to drink 14 units of alcohol or fewer per week.(11) This replaced recommended limits of 21 units per week for men and 14 for women. It is currently advised that alcohol consumption is safer if spread over three days or more.

4. Answer: e. All of the above.

Older adults who drink respond as well and often better than younger adults who are provided with therapy. It is important to tailor what is offered to the patient as many older adults have physical or psychiatric comorbidities that preclude certain interventions.

It is important to start the patient on an alcohol withdrawal regimen following admission, to minimise the potentially dangerous complications of untreated withdrawal. Motivational interviewing may enable the patient to recognise the problem and agree to ongoing help. Following discharge, both individual and group interventions may help the patient to remain abstinent or return to controlled drinking.

5. Answer: c. Alcohol-related brain damage effects about 1:1000 of the UK general population

Alcohol-related brain damage effects about 1:100 of the general population and one in three heavy drinkers. The other statements illustrate key aspects of the aetiology and epidemiology of the condition.

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ASSESSMENT PATHWAY FOR DEMENTIA SYNDROMES IN A MEMORY CLINIC

RR Banerjee, MC Evans, RI Tobiansky

Abstract

Dementia is an ever-increasing burden on the NHS, and a good working understanding of dementia and its management is essential for most doctors in any specialty today. This review article explores how to perform a systematic memory assessment for patients with suspected dementia in an outpatient Memory Clinic setting. However, the basic principles apply to patients in other settings in primary and secondary care. This article describes the diagnostic assessment process, including a focused history, cognitive assessment, further investigations and multidisciplinary, holistic management of this important clinical syndrome.

Introduction

Ageing is one of the biggest challenges facing the National Health Service; improvements in medicine, social care, welfare, diet and lifestyle, as well as increased financial security on average, has led to a drastic shift in population structure over the past century. However, many medical conditions become more prevalent and carry a greater morbidity with age, and this is seen perhaps most dramatically with dementia.

Alzheimer's disease makes up some 75% of dementia diagnoses. Prevalence worldwide is estimated to be around 4% in those over the age of 60, rising sharply to affect 20-30% of people over 85 (1,2). The associated morbidity is substantial – dementia represents around 12% of years lived with disability, which is over double that associated with cardiovascular disease (3).

A distinction is made between young-onset dementia (YOD) and senile dementia, defined as those with onset of disease before, and after the age of 65 respectively. In the UK, patients with YOD are generally referred to specialist tertiary neurology services, due to the scope of differential diagnoses in this age group, which are likely to require more extensive investigations and may have a stronger genetic component (4). Patients with suspected senile dementia on the other hand are referred to memory services, usually run by Old Age Psychiatrists. It is the assessment of this latter group that we will focus on here.

Foundation doctors who complete a rotation in Old Age Psychiatry form an important part of the Multi-disciplinary Team (MDT) in Memory Clinic. This review aims to outline the scope of this role, and provide guidance with regards to how a comprehensive memory assessment should be completed.

Diagnosing dementia

The Diagnostic and Statistical Manual (DSM)-4-R criteria (5) are the most frequently used diagnostic criteria for dementia. This defines dementia as:

"Multiple cognitive deficits, which include memory impairment and at least one of the following: aphasia, apraxia, agnosia or disturbance in executive functioning. Social or occupational function is also impaired."

The criteria also state that the diagnosis should represent a decline from baseline functioning and not be made during the course of a delirium.

For Alzheimer's disease (AD), the preferred clinical criteria are the recently updated NINCDS-ADRSA 1984 criteria (6), which subdivide into "unlikely", "possible", "probable" and "definite" AD. "Probable AD" needs to meet the following criteria:

- Progressive cognitive impairment
- Deficits in memory and at least one other cognitive domain
- Onset between the ages of 40 and 90
- Absence of evidence of other diseases causing memory impairment.

Importantly "definite AD" is not a label that can currently be given in life, as it requires histological confirmation of typical Alzheimer's pathology.

Dementia Diagnosis Rates

(Alzheimers Society: Dementia 2015 (7))

The key themes of the National Dementia Strategy of 2009 were improving awareness of the condition; early and better diagnosis; improved quality of care and delivering the strategy. One of the key successes of the focus on dementia diagnosis has been the increase in diagnosis rates from an average of 42% in 2012 to over 61.6% by the end of Prime Minister's challenge on dementia in 2015.

There is now real potential to continue to increase diagnosis rates and the benefits a timely diagnosis provides. The increase of the average diagnosis rate is an important achievement, with the goal of average diagnosis rates of 75%-or-better a realistic target for Memory Services nationally.

There are many benefits of early diagnosis and referral, which include early lifestyle change, psycho-educational interventions (including cognitive stimulation), early treatment with medication and appropriate safety planning for patients. There is also a better opportunity for research enlistment, both for people with dementia and Mild Cognitive Impairment (MCI).

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What comprises an assessment in the Memory Clinic?

General Practitioners can refer directly to Memory Services, where patients are often assessed within 3-4 weeks of referral. This avoids a 2-3 month waiting list, which is typical for general psychiatry services. Protocols vary by centre, but broadly memory clinics require referring clinicians to complete a physical examination, medication review and routine investigations as part of the referral process.

At the memory clinic, an initial assessment consists of two main elements:

1. Taking a History

2. Performing a Mental State Examination and Cognitive Assessment

This typically takes 1 to 2 hours, depending on patient factors, availability of an informant and the complexity of the case.

Before the history: Optimise conditions

Conditions should be optimised for patients so their performance is the best reflection of their cognitive ability. This can be achieved in a variety of ways, including the following:

- Ensuring that the clinical room allows for privacy, is well lit and quiet
- Encouraging use of appropriate sensory aids (e.g. reading glasses, hearing aids)
- Organising independent language interpreters to sit in, if the patient is not fluent in English

The patient should be as relaxed as possible, as anxiety can affect performance in the cognitive assessment. Developing rapport and adopting a non-judgmental approach during the consultation is key. Collateral histories are also vital – e.g. from live-in relative or carer – in order to gain a full appreciation of the clinical problem. They can also be obtained after the assessment (over the telephone), provided the patient gives consent.

Taking the history

A thorough history forms the basis of a memory assessment. It should cover all aspects of a standard medical history, with additional focus placed on certain key elements. These include:

1. Characterising the nature and progression of memory problems

What specific memory problems have the patient or their relatives noticed, and how have symptoms developed over time? This allows consideration of the differential diagnoses. For example, a gradual onset of memory lapses and deficits in short-term memory, progressing to language difficulties, planning and orientation is most suggestive of Alzheimer's disease. A useful guide to picking up the salient features is to systematically "walk around the brain" asking for symptoms which tap onto focal neurological processes (see Table 1)

When open questions need to be supplemented by a more targeted approach at this stage of the history, it is useful to have specific questions in mind. Table 2 lists some useful questions that address commonly faced memory problems.

• Medial temporal lobe – episodic memory, orientation in space/time, spatial mapping
• Lateral temporal cortex – receptive (Wernicke's aphasia), semantic processing, word naming, object recognition, comprehension, paraphasias, depression, anxiety.
• Frontal lobe – Executive function, planning, personality, expressive language, articulation, motor function, verbal fluency, perseveration.
• Parietal lobe – visuospatial processing, somatosensory processing, finger counting, body part recognition, calculation, praxis.
• Occipital lobe – visual processing.
• Extrapyramidal – tremor, balism, tics, Parkinsonism, REM sleep disorder, ataxia, gait disturbance.

Table 1: Neurological symptoms in relation to Neuroanatomy.

Do you find that you forget things that people tell you?
Have you been told that you tend to repeat the same questions numerous times?
Do you feel that you mislay items around the house, more so than usual?
Do you find it difficult to find words in conversation?
Do you accuse people of not telling you things, even when they insist that they have done so?

Table 2: Example Closed Questions about Memory Problems.

2. Taking a thorough social and functional history

Dementia, by definition, causes impairment of daily function. Thus it is important to explore different aspects of daily routine, including the activities of daily living (ADLs), to check for functional decline. This also enables the assessor to judge how safe the home environment is, which has implications for risk assessment and further management. Tables 3 and 4 have examples of useful questions to ask at this stage (this information should be corroborated with the informant).

The social history also involves asking about the family network and any valid Lasting Power of Attorney or Will, which ensures that essential elements of advance care planning have been addressed.

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Can you tell me about your typical day, from when you wake up in the morning until you go to bed at night? **Do you need any help with eating/washing/ dressing/toileting/walking? (ADLs)** **Who does the shopping/cooking/laundry/cleaning?** **Who manages the finances/bills?** **Have you had any trouble with this recently?** **Can you tell me about your social network of family and friends?**

Table 3: Example Questions in the Social History.

Have there been any instances where the gas stove has been left on, by accident? **Have you ever forgotten to lock the front door?** **Do you still drive? If so, have you had any recent near misses or accidents?** **Have you ever felt lost after leaving the house and had trouble finding your way home?** **Do you have trouble remembering your Bankcard PIN number or withdrawing money from your account?** **How do you deal with the household bills?** **Can you manage simple purchases at the shops?** **Do you have any problems managing with small change?**

Table 4: Safeguarding Questions.

3. Examination - Screening for mood disorders, psychosis and performing a risk assessment and Mental State Examination (MSE)

Psychosis and mood symptoms may be part of neuropsychiatric symptoms in Dementia and are important to screen for. This includes enquiring about the presence of delusions and/or hallucinations and performing a suicide/self harm risk assessment. Standard questions to elicit symptoms of depression can be supplemented by a depression screening tool, such as the Geriatric Depression Scale (GDS).

Finally, a full Mental State Examination (MSE) should be documented in all memory clinic assessments. This adds vital information that helps form the initial impression, but is also useful for future follow up appointments for comparison.

4. Cognitive Assessment

The next task is to complete a formal cognitive assessment, which provides an objective measure of cognitive impairment. Patients will often have been screened with the Abbreviated Mental Test Score (AMTS) and/or the Mini-Mental State Examination (MMSE) prior to the referral process. In memory clinic, there are a number of tools to choose between, which take into account relevant patient factors:

Addenbrooke's Cognitive Examination (ACE)-Revised or Version 3:

The Addenbrooke's Cognitive Examination (ACE) is a dementia assessment tool that is easy to use, sensitive and reasonably specific (8). It is widely used and available without copyright restrictions. The examination is scored out of 100, with a higher score indicating more preserved cognition. There are 5 domains: Attention, Memory, Language, Fluency (executive) and Visuospatial. Importantly, a patient's education level has an effect on performance (9) and, as such, it is more reliable with patients who have at least a primary level of education.

Cut off scores:

< 88/100, highly sensitive for dementia (1.0)

< 82/100, relatively specific for dementia (0.72 [0.60-0.84])

Mini-Mental State Examination (MMSE)

The MMSE is a 30-point scale that tests 7 domains: orientation (time and place), registration, attention and calculation, short-term recall, language and visual construction. It is widely used in both primary and secondary care, but is prone to bias from education, cultural background and socioeconomic status (10). It has also been criticized for 'low reliability' and should therefore be used as a screening tool rather than a diagnostic one (11).

Cut off scores/ranges:

≤ 23, associated with dementia diagnosis in 79% (10)

Grading of severity: 21-26 (mild), 11-20 (moderate), ≤ 10 (severe) (11)
Unfortunately, the MMSE is now subject to copyright restrictions.

Rowland Universal Dementia Assessment Scale (RUDAS):

The RUDAS is a 'multicultural cognitive assessment' that is easily translated into other languages, culturally fair and unaffected by variables such as education and gender (12). The examination is scored out 30, with a higher score indicating more intact cognition, and covers 6 domains: memory, praxis, language, drawing, judgment and body orientation. It is the preferred assessment for those requiring an interpreter, from different cultural backgrounds or who have a limited education.

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Cut off score:

< 24, sensitivity 0.89, specificity 0.98 (12)

The Montreal Cognitive Assessment (MOCA)

The MOCA is a 10-minute screening tool useful for diagnosing Mild Cognitive Impairment (MCI) and early Dementia. It is scored out 30, with 30 being the ceiling of cognitive performance, and covers a number of domains including memory, language, attention, orientation, visuospatial and delayed recall. Using a cut-off score of <26, the MOCA is noted to be far more sensitive than the MMSE in detecting MCI (83% compared to 17%) and dementia (94% to 25%) (13). However, this comes to the detriment of specificity (13,14).

Cut off score:

1. < 26, sensitivity 0.94, specificity 0.50 for Dementia (13)

Neuropsychometry

Whilst the tests above are generally adequate when combined with the other elements of the assessment, there may occasionally be subtle signs and symptoms of unknown relevance, making specific subtype diagnosis difficult. It may also be difficult to interpret assessment scores in individuals with a very high or low baseline of intelligence or education, or when scores are borderline. In these situations, a Clinical Psychologist specializing in cognitive assessment for memory can be extremely useful, using in-depth batteries to give more information about specific cognitive processes (e.g. frontal lobe function in FTLD) or to help guide diagnosis.

5. Investigations

Investigations in the memory clinic include blood tests, other laboratory investigations, and neuroimaging.

Blood Tests

Blood tests are predominantly completed in primary care before the patient is seen at the memory clinic, and are exclusively to rule out reversible causes of dementia syndromes. These are summarized in Table 5:

- **Full blood count (FBC) – anaemia, infections**
- **Urea and electrolyes (U&E) – electrolyte imbalances**
- **Liver function tests (LFT) – alcoholic hepatitis, Wernicke-Korsakoff**
- **B12, folate**
- **HIV serology, VDRL, specific Treponemal assays (if risk factors)**
- **Iron studies**
- **Glucose and HbA1c**

**Note, Urine dip, urine culture, blood culture, chest X ray – should be completed if clinical suspicion of infection as delirium must be ruled out prior to assessment.*

Table 5: Blood tests and reversible causes of memory problems.

Neuroimaging

The main investigation organized at the memory clinic is neuroimaging. The nice guideline *CG42 (2006)* states:

1.4.3.2 Structural imaging should be used in the assessment of people with suspected dementia to exclude other cerebral pathologies and to help establish the subtype diagnosis.

A. Magnetic resonance imaging (MRI)

The same NICE guidance states that MRI should be the gold standard investigation. Structural MRI is, indeed a powerful tool, with a sensitivity and specificity of over 90% each for moderate-severe dementia (15,16). Perhaps the greatest strength of structural MRI is to help prognosticate patients given a label of mild cognitive impairment (MCI). It is difficult to predict which of those with mild memory problems will gain a diagnosis of dementia, but serial MRI scans separated in time can predict which patient with MCI progress to dementia (17). Thus in our memory service, we restrict the use of MRI to these challenging patients.

B. Computerised tomography (CT)

Given the need to ration MRI services, CT is a good substitute in most patients, and has a sensitivity of 80% and a specificity of 93% for AD. Because of natural variation in brain structure, one-off CT scans have limited value in making subtype diagnoses, but CT nevertheless has two important functions:

- *To evaluate the vascular burden, to make a diagnosis of vascular or mixed dementia. This is important for further management as tight control of risk factors can help delay progression in these patients.*

- *To exclude other pathologies that could mimic dementia, such as hydrocephalus or a space-occupying lesion. Whilst the yield for mimics is low, they can be difficult to pick up on clinical examination alone, so this is a useful safety net.*

C. Specialist neuroimaging

In patients presenting with subtle neurocognitive signs and symptoms suggestive of frontotemporal lobar degeneration (FTLD) or Lewy body dementia (LBD), a number of specialist neuroimaging modalities are available to help distinguish from AD. In the case of FTLD, 99Tc-hexamethylpropyleneamine oxime (HmPAO); a ligand that shows decreased blood flow in the fronto-temporal cortices in FTLD patients. Similarly, during the progression of LBD, levels of the dopamine transporter (DaT) in the basal ganglia decrease as the disease progresses, which can be demonstrated using a specific DaT-binding ligand (DaT scan).

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D. Cerebrospinal fluid analysis

AD is associated with decreased CSF amyloid ß42, elevated tau/ phosphorylated tau, and an increased tau/amyloid ß42 ratio, which are present substantially before onset of the symptoms (18), and are associated with typical AD pathology (19,20). However, given that CSF levels of these markers alter with normal aging, their use is mostly limited to the assessment of young-onset dementia.

Differential diagnosis

The main differentials for dementia are Alzheimer's disease (70%) and vascular dementia, or mixed Alzheimer's/vascular type (20%). They are listed below, along with less common causes, with the most salient clinical features:

Alzheimer's disease: *Episodic memory problems predominate, with visuospatial processing issues and early wandering. There is often marked apraxia (parietal). Neuroimaging: selective atrophy of medial temporal lobe structures, and parietal cortex. CSF: decreased Aß42, increase tau/ phosphorylated tau, and increase tau/ Aß42 ratio.*

Vascular dementia: *Progresses in stepwise fashion rather than gradual decline. Cognitive deficits often wide-ranging and difficult to localize, with prominent confusion and inattention. May have basal ganglia signs. Vascular risk factors. Neuroimaging: marked microvascular changes in subcortical white matter. Often overlap syndrome with AD.*

Dementia with Lewy bodies (DLB)/dementia in Parkinson's disease: *Bradykinesia, tremor, gait disturbance, postural instability, prominent mood symptoms and Rapid Eye Movement (REM) sleep disorder. Neuroimaging: CT/MRI often unremarkable, DaT scan shows decreased basal ganglia binding.*

Fronto-temporal lobar degeneration (FTLD): *numerous sub-syndromes. Executive dysfunction, personality change, perseveration, decreased verbal fluency, anomia, receptive or expressive aphasia, articulation problems. Neuroimaging: MRI/CT shows frontal and/or temporal atrophy, HmPAO scan shows decreased fronto-temporal perfusion.*

Other differentials: *We have purposefully focused on the differential diagnoses likely to be encountered in the elderly memory clinic population. However, other, rarer, causes include dementia in Huntington's disease, traumatic brain injury, prion diseases and Wenicke-Korsakoff syndrome. In particular, HIV-associated neurocognitive disorder (HAND) can present with a wide variety of cognitive defects and can therefore mimic many dementia syndromes. Due to space demands, we have avoided discussing these rare causes in more detail, but there are many review articles and textbook chapters that cover these topics in depth.*

Management

The first consideration in management is whether or not patients meet the criteria for a Dementia Syndrome.

Mild Cognitive Impairment: In patients who do not meet these criteria, they can either be reassured that their symptoms are part of the normal ageing process and discharged back to the community, or, in certain cases, are given a diagnosis of Mild Cognitive Impairment (MCI). MCI is a syndrome in which patients exhibit "cognitive decline greater than expected for an individual's age and education level, but that does not interfere notably with activities of daily life" (21).

It is often a pre-dementia state, as there is a 5-15% annual conversion to AD, with 50% of these patients having an AD diagnosis at 5 years. These patients may benefit from 6 to 12 monthly follow up appointments to check for signs of deterioration, physical exercise, control of cardiovascular risk factors and engaging mental activities (with no current role for pharmacological therapy) (22).

A baseline MRI may be justified, as serial MRI comparison can help aid diagnosis (as discussed above (17))

Dementia Syndrome: For patients diagnosed with dementia, management should be dictated by the multidisciplinary team (MDT), which includes old age psychiatry (psychiatrists and specialist nurses), social services, occupational therapy and clinical psychology, using a bio-psycho-social approach. Broadly speaking, management options can be divided into non-pharmacological and pharmacological.

Non-pharmacological management

There are a multitude of non-pharmacological interventions that can be delivered by members of the MDT. A priority from the outset should be ensuring a safe home environment. This requires input from occupational therapy, who can perform a home assessment and implement necessary modifications, and social services, if patients or carers require additional help, for example with a package of care. In addition to supporting safety, these measures provide necessary functional support, which becomes increasingly important as dementia progresses.

It is important to make patients and families aware of support groups and charities, such as the Alzheimer's Society and Age UK. These groups serve as a huge source of information and guide to accessing services for patients and carers. Specialist Dementia Advisers can also help families navigate the confusing pathways of care between health and social services.

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Some other non-pharmacological options available are described below:

Cognitive Stimulation Therapy (CST): *structured and organised group therapy that looks to engage patients with memory impairment through mental stimulation. Shown to improve function and quality of life (23).*

Psychological Therapy / Psycho-educational Interventions / Counselling: *Psychological therapy can be useful for patients with dementia but also to address carers' needs and wellbeing.*

Alternative Therapies: *Music and art therapy, activity therapy and aromatherapy are all popular interventions that encourage social interaction, augment self-expression and increase physical exercise, all of which have positive outcomes in terms of quality of life and sense of well-being (24).*

Pharmacological Management:

Current pharmacological therapy is aimed at slowing disease progression or addressing mental or behavioural symptoms in dementia syndromes. Patients and/or carers should be provided with sufficient information about the proposed drug in the memory clinic itself, and the assessing clinician should assess for any relative or absolute contraindications.

If the decision is to commence a drug, proper titration guidelines should be followed, and it may be necessary to book patients follow up appointments with clinical nurse specialists, to review any drug side effects and consider dose titration. The main drug options are summarised below:

Cholinesterase inhibitors

Examples: *Donepezil, Rivastigmine, Galantamine*

Indication: *Mild-moderate Dementia (Usually Alzheimer's Disease)*

Evidence: *Demonstrated efficacy for improving cognitive symptoms in Alzheimer's Disease, Dementia of mixed type, Vascular Dementia and Parkinson's Disease Dementia (25). However, no clear effect on underlying disease progression or life expectancy.*

Common side effects: *Nausea, vomiting, diarrhoea*

N-methyl-D-asparatate receptor antagonists (NMDA antagonist)

Examples: *Memantine*

Indication: *Moderate-Severe Dementia (usually in Alzheimer's Disease)*

Evidence: *Modest benefits in moderate-severe Alzheimer's Disease in terms of function, cognition and behavioural symptoms, including aggression and agitation (26). Evidence of benefit in Lewy Body Dementia (25)*

Common side effects: *Dizziness, headaches, constipation*

There are also drugs that target non-cognitive symptoms, or the so-called behavioural and psychological symptoms of dementia (BPSD):

Atypical antipsychotics such as Risperidone, for example, helps treat psychosis and aggression in dementia. Unfortunately, significant adverse effects, including an increased mortality, (mainly via a four times increased stroke risk in the short-term), means a careful risk-benefit analysis must be calculated before prescription (27). Note that neuroleptics are contra-indicated in Parkinson's disease and related dementias due to a worsening of Parkinsonism.

Selective Serotonin Reuptake Inhibitors (SSRIs) are useful for depression in dementia but also to address other associated neuropsychiatric symptoms (28). They are particularly useful in managing the behavioural effects of FTLD and DLB (29). SSRIs have a far safer side-effect profile than antipsychotics and perhaps have a greater role to play in dementia.

Conclusion

An increasing elderly population coupled with growing awareness of dementia has led to an unprecedented increase in numbers of referrals to memory services nationally. This article has considered the standard diagnostic assessment of such patients. The involvement of trainee doctors at all levels in memory clinics, including Foundation Years, provides a valuable training opportunity in this important area.

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MCQs

1. Which of the following cognitive assessments is most appropriate for a patient who does not speak English as a first language and has recently migrated to the UK?

a) MMSE

b) RUDAS

c) AMTS

d) MOCA

e) ACE-III

2. Which one of the following statements is true about Mild Cognitive Impairment (MCI)?

a) It is synonymous with early stage dementia and donepezil should be prescribed

b) A very small minority of patients with MCI will go on to develop dementia in the future

c) A baseline MRI and serial MRIs may be useful to aid diagnosis and guide prognosis

d) The MMSE is a very sensitive tool used in the diagnosis of MCI

e) There is currently no evidence of any effective interventions for patients diagnosed with MCI

3. Which of the following is part of the NINCDS-ADRSA 1984 diagnostic criteria for 'Probable Dementia'?

a) Onset above age 65

b) Histological confirmation of typical Alzheimer's pathology

c) Deficits in memory and at least one other cognitive domain

d) ACE-III score < 88

e) Cognitive impairment associated with Parkinsonism

4. Which of the following investigations is essential in all patients presenting to memory services (select as many as apply)?

a) Magnetic resonance imaging (MRI)

b) Computerised tomography (CT)

c) Full blood Count (FBC)

d) Liver function tests

e) Venereal disease research laboratory (VDRL) test

Answers

1. A)

The Rowland Universal Dementia Assessment Scale (RUDAS) is the assessment of choice as it is least affected by prior education, cultural background and language.

2. C)

A baseline or serial MRIs may be useful in patients with MCI, particularly those with amnesic MCI who are at higher risk of progression to Alzheimer's Disease.

3. C)

Probable AD requires a deficit in memory and at least one other cognitive domain (e.g. Language). Onset should be between the ages of 40 and 90. Histological diagnosis is only required to diagnose Definite AD.

4. C) and D): Full blood count and liver function tests are essential investigations.

FBC can help screen for infection as a cause of delirium (high white cells) and anaemia (low Hb, variable MCV). Chronic liver disease can cause cognitive disturbance in numerous ways, including hepatic encephalopathy and Wernicke-Korsakoff syndromes. Current guidelines suggest imaging should be considered in all patients, but is not always necessary if the diagnosis is clear (making A) and B) incorrect). Similarly risk factors should be sought for sexually transmitted diseases, and HIV and syphilis screened for only if clinically indicated.

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ATTENDING CORONER'S COURT: REFLECTIONS & LESSONS LEARNED

D Dineva, G Dell'Erba

Abstract

During my psychiatry rotation I was given the opportunity to attend an inquest into the death of a patient which had occurred a year before the inquest. Coroner's inquest is the final outcome of a referral to coroner's for unnatural death. It's led by the coroner who is either legally or medically trained. This reflection describes my experience as uninvolved attendee, and describes lessons I took away from that experience in order to improve my competencies, including being a professional witness in court.

Introduction

A coroner's inquest takes place when there is an unexplained or unnatural death, the cause of death is unknown or the person dies in custody or detention. The latter applies to those patients, detained under the Mental Health Act (MHA) or not, who die in hospital.

Death of a psychiatric patient can be unexpected; with the potential of suicide, although most deaths of psychiatric patients are due to physical health disease, for example sepsis, myocardial infarcts, strokes, arrhythmias (for example torsade) and venous thromboembolism (1). According to the national inquiry on suicides and homicides in England, in 2015 there were 3,899 rulings of suicide in coroners' courts and this represents the highest annual number since records began in 1995 (2).

The coroner's court has various aspects in common with a criminal or civil trial, such as the line of questioning, the presence of lawyers, family members and the public, however a coroner's inquest is not conducted to apportion blame or absolve anyone. It's a facts finding investigation using witnesses, post-mortem examination including toxicology and written documentation (clinical files, reports or patient's letters) to find answer to the following 4 questions:

1. Who was the diseased?

2. When did they die?

3. Where did they die?

4. How did they die?

Sometimes, when the patient dies in custody or State detention, the death is violent or the cause is unknown, the coroner may decide to hold the inquest with a jury. The verdict comes in several categories: narrative verdict which sets out the facts surrounding the death in narrative form, natural cause (s); accident or misadventure; suicide; unlawful killing; drug/alcohol related; or open verdict when a coroner affirms the occurrence of a suspicious death but does not specify the cause. (3).

Neglect can be part of a verdict conclusion when there is a gross failure to provide basic medical attention to a person in a dependent position which directly causes or materially contributes to the death (i.e. pressure sore assessment done but care plan not implemented) (4). Indeed, Human Rights Act Article 2 (right to life), may trigger an enhanced inquest if the coroner is concerned about neglect (5). It is important to know that Mental Health Trusts are often open to litigation with the family under the Article 2, as the State has a duty of keeping the patients safe when in their care.

The latest statistics of the Ministry of Justice (2015) report that the most common verdict is natural death in 31% of cases, followed by accident/misadventures and unclassified at 22% and 14%, suicide and drug/alcohol related deaths at 11% and 6% respectively (6-8).

As part of the inquest's outcome the coroner might issue an Article 28 which is a report asking the Trust to take action on certain issues specified by the coroner to prevent further deaths and response is needed from the trust within 56 days (3). The coroner can also decide to refer a certain professional to their professional bodies for investigation about incompetence or negligence.

An inquest also has very important role in the family's grief process as a form of closure in enabling them to ask questions to the healthcare professionals involved in their loved one's care. A civil proceeding can also run alongside but separate from the inquest but typically it's after the inquest so that solicitor present at the inquest can gather evidence during the inquest and be instructed at a later stage to investigate a claim.

Clinical Summary

The inquest I attended was related to the death of a 32 yr male admitted to a general hospital following an overdose of prescribed medication (details of the deceased have been omitted to maintain confidentiality). His past psychiatric history included recurrent depression and personality disorder traits. He had served time in prison for armed robbery. He had an extensive history of substance misuse since the age of 13.

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Prior to his transfer to the psychiatric ward he had mental health assessment and was deemed to have capacity to be admitted as an informal patient. During his stay he agreed to have his urine tested randomly for illicit substances and to be reviewed by the substance misuse team.

His mental state was improving: didn't feel suicidal and had plans for his future; a full risk assessment was conducted and risks identified and discussed, so he was granted short unescorted leave off the ward. He bought heroin when on leave of absence and took it on the ward in the evening prior to his death. He died suddenly during the night and was found in the early hours of the morning by a member of staff doing their routine hourly checks.

The cause of death was thought to be due to "drug toxicity and abuse", probably due to underestimating the purity of the drug.

How is an inquest conducted?

On the day of the inquest you will be oriented by an usher as to when to enter and where to sit but prepared to wait as there may be a delayed start (i.e. coroner requesting new witnesses to attend). The coroner invites people to the inquest based on their statements; however they might not invite all the staff involved in the inquest especially if the statements are fairly similar. Statements sent to the coroner would have been looked at by the legal representative of the Trust prior to being sent.

The coroner starts the proceedings by giving an opening statement which asks the 4 questions, and then the witnesses are called, typically starting with the family members. The family of the deceased have the right to ask for any specific witnesses to be questioned. They can also have a solicitor in attendance, asking questions on their behalf and have the right to examine any medical records, the trust investigation report, witness statements and to see the post-mortem report with or without the assistance of a solicitor.

Each witness is asked to swear an oath choosing between a religious or personal oath; the witnesses are then questioned by the coroner, lawyer for the family and the trust lawyer after confirming their name and relationship to the deceased. Witnesses don't necessarily give a narrative as written in their statement, although they are allowed to look at it when they answer questions. It is important that witnesses are well prepared and read the case notes and statements/reports in advance, speak in clear language, think about causation, use documentary facts and understand the family's perspectives.

Once the coroner and the lawyers have finished asking the questions the family might also ask questions. Inquests can extend up to few days if there are several witnesses and evidence that is examined. The process also allows the witness to express their condolences to the family.

In this particular case the coroner focused on how often and what circumstances should trigger requesting a patient to give a sample of urine for illicit drugs screening: and how long after use do drugs show up in urine screen. Further questions raised by the coroner were about the quality of the observations during the night the patient died and the property and personal search of a patient returning from unsupervised leave.

Lessons learned

Seeing how this type of inquest is conducted has helped me to reflect about the process in its entirety; there are various learning points: some are general pertaining to the legal process and some are more specific to the case in discussion.

1. I have found that the Trust lawyer was helpful in guiding staff through the whole inquest.

In preparation for the hearing it will be most important to know that you will be asked logical, non-accusatory but uncomfortable questions about your clinical decision making. At the inquest, the coroner would be the main person asking the questions however the family would be allowed to ask the witnesses questions directly (if they don't have a lawyer to represent them) but if they are making statements rather than asking questions then the coroner will stop them.

The family can also request for specific witnesses for whom they have questions and they can see all the evidence submitted to the coroner. Prior and after the inquest, the trust might decide to support the witnesses with follow up sessions. The whole inquest and its outcome, however, may have major impact on the emotional wellbeing of staff that can experience a range of feelings, including mourning for their patient, guilt that they have failed to protect the patient and fear of professional humiliation (9).

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2. The salient and defensible documentation of discussions of clinical reviews is absolutely vital, including updated risk assessment and mental state examination as they form crucial part of the management of the patient.

Risk assessment is more likely to be realistic when it is multidisciplinary, and involves input from the patient and carers. Typically psychiatric risk assessment focuses on risks to self (suicide/self harm), neglect, absconding, harm to others and child protection (especially in the context of drug misuse).

However, physical health issues are often ignored by mental health staff, despite a majority of deaths being caused by physical disease as described above. Static and dynamic risk factors, protective factors and management strategies to reduce the risk all of which are taken into account when formulating the risk assessment (10).

3. The leave, post leave review and observations policies are important in ensuring safety and in planning future leave.

At present there are no agreed national guidance as to how the psychiatric observations are carried out and how compliance with those policies is maintained (11). The search policies are also local with 39% of wards surveyed by Bowers et al reporting that they always search and 49% sometimes, 9% always conduct return from leave search, 70% sometimes and 10% of the wards report they never do return from leave searches (12).

Leave of patients detained under any of the sections of the Mental Health Act is governed by section 17 of the act and the same act outlines who grants leave and under what circumstances and those patients not detained have the right to leave at any time (Code of practice, Mental Health act 1983, DoH) (13).

4. The case in question helped me to understand that management of psychiatric illness with substance abuse as co-morbidity can be challenging.

Drug use and dependence are known causes of premature mortality, with drug poisoning accounting for 1 in 6 deaths among people in their 20s and 30s in 2015 and implicated as the main cause of death in 6% of all deaths (6-8). For instance, in 2015 there were 3,674 drug poisoning deaths (involving both legal and illegal drugs) registered with two thirds of them being in men (2,547 male deaths and 1,127 female deaths) and in 54% the primary cause of death was secondary to opioids misuse (6-8).

5. Staff training on dual diagnosis and local joint strategies together with drugs and alcohol Trusts/teams, are extremely important, including shared discussion with patients and their family on immediate and future safety plans (14).

6. The process is absolutely transparent and in line with the Duty of Candour, to "provide to the service user and any other relevant person all necessary support and all relevant information' in the event that a 'reportable patient safety incident' occurs" (15).

Conclusion

When I planned to attend the inquest, similar to my colleagues I expected it to be an intimidating process because of the fear of facing distressed and possibly angry family, questioning professionals 'decisions and associated rationale.

However, I found the process reasonably controlled and any reproaches from the family contained by the coroner, with emphasis on non-apportion of blame. The inquest is an opportunity for all the family and friends to have a better understanding of the circumstances of their relative's death.

Last but not least, as also emphasized by O'Hagan (15), the coroner's inquest offers a sense of closure to the family and helps clinicians to reflect on causation, mistakes and ultimately learn lessons for the future. It is easy to underestimate the emotional impact on mental health staff as deaths from suicide, unlike deaths in general medicine, are treated as 'never events' that require investigations.

Coroners court attendance should be made as part of medical school education so that the students can familiarise themselves with how the inquest proceedings are conducted because each case is a source of valuable learning lessons.

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HOMICIDE IN DEPRESSIVE CONDITION

FH Saleh, A Dave

Abstract

Mr A is a 56 year old gentleman with diagnosis of bipolar affective disorder. He has had a number of relapses of both depressive and manic phases, which has led to a significant forensic history. The majority of this history has been during a manic phase, however the most serious, which lead to Mr A being charged with manslaughter for killing his wife, was during a depressive phase.

This case based discussion will discuss Mr A's history, in particular his forensic history and subsequent management. It will also discuss the risks that can contribute to homicidal behaviour in a major depressive episode.

Case History

Mr A is a 56-year-old gentleman. He was diagnosed with bipolar affective disorder in 1983 after a period of depressive symptoms at the age of 21 followed by a manic episode, which lead to an arrest.

He was initially started on an antidepressant, amitriptyline and electric convulsive therapy (ECT). However this was later switched to Lithium, as the antidepressant was contributing to his manic phases. He went through various treatment regimens over the years and is now currently on an antipsychotic depot (fupetixol decanoate), an oral antipsychotic (olanzapine), an anticonvulsant (lamotrigine), and two more mood stabilisers (sodium valproate and lithium carbonate).

From the age of 34 he had a number of hospital admissions, the first following an attempted suicide, where he placed his fingers in a plug socket and self-strangulated. He has had a number of admissions since, both informal and under sections. These admissions were due to assault, arson or attempted suicide. He suffers from alcohol misuse and was usually under the influence during these episodes.

Mr A's forensic history is quite significant, with his first offence at the age of 24 (1983), where he was charged with theft, deception, threatening behaviour and criminal damage. He then accumulated a string of offences, including assault on his 7-year-old son, arson and breaking into Kensington Palace. These were all during a manic episode of his condition.

He also physically assaulted his wife a number of times over the years. On 13th June 2002, Mr A killed his wife by strangulation. The months leading up to his wife's death, Mr A was in a depressive phase of his condition. Prior to the offence, in April 2002, he had strangled her to the point of loss of consciousness. He then contacted services as he realised what he had done. He reported to be low in mood and was treated as an informal inpatient. He appeared to be responding to antidepressants well, and was granted leave home. It was during this leave that he got in an argument with his wife and strangled her to death.

He was initially charged with murder, but was eventually convicted with manslaughter, as he was considered to have diminished responsibility. On 17th June 2003, he was put under a section 37/41 restricted hospital order. He was treated at a medium secure facility from 2003 to 2008. He was then discharged to the community, only to be arrested and readmitted again a few months later with symptoms of mania.

Currently he is still under section 37/41 in a psychiatric intensive care unit for an on-going depressive episode. He is awaiting decision from the ministry of justice regarding unescorted leave and eventual transfer to a rehabilitation unit prior to discharge to the community.

Discussion

This case is interesting as homicide and violence is seen mainly in mania. In clinical practice it is unusual to see such behaviour during a depressive phase. The symptoms of depression, namely; low mood, lack of energy and anhedonia are not typically associated with aggressive actions. The symptoms of mania, for example; pressured speech, flight of ideas, irritability, excessive spending and dangerous, promiscuous activity, are more likely to result in violent behaviour.

It has been documented that in cases of depression, the condition has more of an effect on the individual rather than others. This is demonstrated by an article by Rowe et al, who analysed 49 articles relating to depression. From these 49, only 1 article mentioned harm to others (homicide). However, one third mentioned self-harm or suicide. (1)

Homicide is seen in conditions such as schizophrenia type disorders, drug induced psychosis and manic phase of bipolar affective disorder. As homicide in depression is rare, it can be overlooked as a potential risk. However in major depressive episodes such as this case, the risks are very real.

One of the reasons why homicide or violence is a risk in major depressive episodes is how individuals cope with their depression. Many resort to self-medication with alcohol or illicit substances, which is well known to promote aggressive behaviour.

Another reason could be one of the proposed mechanisms for emotional dysregulation associated with bipolar affective disorder, namely hypofrontality. This is the reduced utilisation of glucose and blood flow to the prefrontal cortex, which is thought to contribute to lack of emotional control. (2) This could lead to despair, frustration or even rage and in turn result in violent, homicidal behaviour.

In some major depressive episodes, individuals can become psychotic. Although this doesn't appear to be the case for Mr A, it is a risk for homicidal behaviour.

There is also a question of whether Mr A has psychopathic traits. Even to this day he fails to show any remorse or empathy for his actions.

Mr A was treated appropriately and was showing good clinical response to his medication. Although now his depression is settling and his mood stabilising, his prolonged hospital admission has led him to become institutionalised, something even he recognises. As well as treating his condition pharmacologically, there are other social and functional factors that need to be addressed. He is working with occupational therapists to address these issues and is using escorted leave appropriately, with a view to progress to unescorted leave pending decision by the ministry of justice.

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An appropriate progression from this to would be to transfer to a rehabilitation unit, so Mr A can gradually become more independent and integrate as a functioning member of society.

Conclusion

It has been well documented that individuals in their manic phase of bipolar affective disorder, schizophrenic type disorders and drug and alcohol induced psychosis can be aggressive and impulsive. This can at times lead to serious consequences, such as homicide. Homicide during a depressive phase of bipolar affective disorder is less common, however the risks are still very real.

Test yourself

1. Which one of the following medications is recommended in the depressive phase of bipolar affective disorder?

a. Haloperidol
b. Sertraline
c. Promethazine
d. Procyclidine
e. Buspirone

2. Which of these symptoms are most specific for depression?

a. Low mood
b. Loss of appetite
c. Sleep disturbance
d. Anhedonia
e. Low energy

Answers

1. Correct answer - b. Sertraline.

Sertraline is a serotonin reuptake inhibitor (SSRI) antidepressant. It is commonly used to treat both unipolar and bipolar depression. Antidepressants must be used with caution in treating bipolar depression and usually prescribed with a mood stabiliser, to reduce the risk of individuals switching to a manic phase. The other options would not be appropriate for the treatment of depression. Haloperidol is a typical antipsychotic.

Promethazine is a neuroleptic medication, with strong sedative and weak antipsychotic effects. Procyclidine is an anticholinergic drug, used to treat EPSE side effects from typical antipsychotics such as haloperidol. Buspirone is an anxiolytic and used mainly to treat generalised anxiety disorder. It can be used as an adjunct to antidepressants in major depressive episodes.

2. Correct answer – d. Anhedonia.

Although all options are common symptoms of depression, anhedonia is the most specific. Anhedonia is the inability to experience joy or pleasure from things you normally would. This is a specific, characteristic sign of depression. Low mood, loss of appetite, sleep disturbance and low energy can be symptoms of many different disorders, both organic and non-organic.

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UNDERSTANDING CRITICAL PSYCHIATRY: A GUIDE TO FOUNDATION DOCTORS

PN de Silva

Abstract

This article has been specifically written for Foundation Trainees, in order to change their perceptions, and hopefully increase their interest in psychiatry by realising that major changes are being thought through to make the speciality fit for the 21st century, thereby being able to join other specialties in so called multi-specialty community hubs, where most doctors will be working in the future.

Critical Psychiatry is defined, and approaches the 3 domains of psychiatric work; how psychiatrists think, act and reflect from a Critical Psychiatry perspective. The issues of assimilating new knowledge in neuroscience, recent improvements in communication, consultation, collaborative risk management, as well as methods of objective reflections on outcome are discussed. Specific recommendations for trainees and their trainers are suggested in terms of knowledge, skills and attitudes.

Context

Of late, psychiatric services have been going through a period of introspection due to 3 factors. Firstly, the Care Quality Commission (CQC) has made suggestions to help mental health trusts gain a 'good' (satisfactory) rating (1). Secondly, along with Primary Care, Psychiatry is faced with reduced trainee applications, with increasing evidence of unfilled senior trainee and consultant posts around the country.

Furthermore, the Five Year Forward View on Mental Health (2) directs most community mental health work (about 80% of the total) be moved to primary care settings, co-localised in multi-speciality 'hubs' with District Nursing, Midwifery, Health Visiting, Social services, Pharmacy and Chronic Disease services.

A new post of a hybrid Community Consultant has been proposed (3) by the colleges of Medicine, Psychiatry and General Practice involving 18 months training in general medicine with 9 months each in Primary Care and Psychiatry. In line with this the College of Psychiatry intends to update their curriculum, which also needs revision in the rapidly developing field of neuroscience.

The key concerns of the CQC following the 2 year full inspections of all 56 mental health Trusts were inadequate joined up care with primary and acute services, poor physical health care of psychiatric patients and polypharmacy in managing challenging behaviour by Learning Disability and Old Age sub-specialities, typically involving off-label prescribing of anti-psychotic and anti-epileptic drugs.

The CQC also commented on the lack of shared decision making ('co-production') between patients, carers and clinicians on treatment and risks management. Perhaps this lack of co-production is consistent with increasing numbers of detentions under the Mental Health Act in England over the last 5 years. It is hoped that the emerging strand of critical thinking by psychiatrists themselves can help improve services. Perhaps some of the insights could also help non-psychiatrists in their work.

Critical psychiatry – what it is and is not?

The term Critical Psychiatry has been in place since the onset of the UK Critical Psychiatry Network (CPN) in 1999 (4). This is now a worldwide network of interested psychiatrists, with links to other networks such as 'Mad in America' (5). CPN is a broad church, with interests in political, philosophical and spiritual underpinnings of psychiatry, alongside critique of clinical activity including the potential implications of new technology and neuroscience. Therefore contemporary Critical Psychiatry can be defined as an **evidence based critique of how psychiatrists think, act and reflect,** with recommendations on competencies linked to these key functions.

It is perhaps useful to view critical psychiatry in the context of critical thinking in general medicine and surgery; of acute clinicians questioning the validity of treating (or remediating) lifestyle choices, for example on diet and physical exertion, encouraged by unfettered commercial advertising, and tax breaks (for example on sugar). Physicians are increasingly discussing the value of, for example, 'intermittent fasting' for preventing diabetes and managing obesity, and remediating nutritional deficiencies by supplements, for example Magnesium and Vitamin D3, both deficient in a majority of the population.

What Critical Psychiatry is not is the belief system called Anti-Psychiatry which was popularised by Thomas Szasz (6). The core belief of anti-psychiatry is that psychiatric illnesses and associated diagnostic classifications are myths, which get progressively dismantled as neuroscience finds underlying biological deficits and associated curative treatments (as opposed to palliative symptom relief and containment as offered by psychiatrists).

The evidence for anti-psychiatry rests on management of epilepsy, moving from the Psychiatry to Neurology (7). Unlike Anti Psychiatrists, critical psychiatrists hope to rejuvenate the speciality in order to make it relevant to the 21st century, and acceptable to the general public.

How psychiatrists think?

Psychiatric conditions rarely have specific and sensitive biomarkers. Even in Dementia sub typing, the sensitivity afforded by modern scanning is around the 80% mark (8). The best fail safe for over-diagnoses is research based operational criteria, but practicing psychiatrists rarely use these due to limitations in time (9).

Psychiatrists are considered to have expertise in predicting another's motivations and future behaviour; the so called 'theory of mind' competency (10). This skill appears to be related to the ability to 'see ourselves as others see us'. In general, this skill appears to be more accurate when predictions are made using an abstract rather than an emotional mind set (11); relevant for example in risk assessment.

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All humans have thinking errors, both in individual and group settings. These can result in incorrect assumptions unless due diligence is practiced. For example, doctors tend to look for evidence to support a diagnosis, rather than evidence which would contradict it. This is called 'confirmation bias (12). Furthermore, 'misuse of heuristics' (13) occurs when a doctor applies treatment guidelines to patients who do not fit inclusion criteria of trials used to formulate these.

This bias is compounded by the doctor not disclosing this limitation of evidence to the patient because of losing face - which is known as 'affective' bias (14). National guidelines on treatment are often arrived at by comparing effect sizes between different trials under differing conditions including control groups. This leads to a bias called 'overconfidence' (15). Slavishly following such guidelines due to fear of peer disapproval leads once again to affective bias.

Group biases can originate in Multi-Disciplinary Teams (MDT's). The best known of these is 'groupthink' (16) when there is unquestioned agreement on a judgement or decision due to various influences of group members. The other main group bias is 'escalation of commitment' (17), where a treatment plan is continued despite evidence of ineffectiveness due to fear of consequences if the direction is changed or reversed.

New knowledge

On the emerging field of Neuroscience, there is evidence of excess activity of immune responses in the brain as part of common psychiatric conditions such as Major Depressive Disorder and Schizophrenia. This involves excess synaptic pruning due to activation of microglia, especially in frontal areas of the cortex. This process is added to by activation of the complement system.

Furthermore, it is now recognised that around 6% of acute psychoses are accounted for by 'limbic encephalitis' typically resistant to antipsychotics, caused by excess anti NMDA receptor and Potassium channel antibodies. Consequently, trials have commenced on using microglial deactivators such as Minocycline, and routine checks on auto-autoantibodies in acute psychoses to decide on the use of steroids and immunophoresis in limbic encephalitis.

It is also being increasingly recognised that there is a 'toxic triad' of depression (associated with persistent excess cortisol production), central obesity (Insulin resistance, hypertension, dyslipidaemia and reduced growth hormone production) and cognitive impairments in attention, memory retrieval and executive function (associated with microglial activation, reduced brain tropic factors such as BDNF). As yet the various clinical departments dealing with these previously disparate conditions have not teamed up to work collaboratively, despite existence of liaison psychiatry services in most general hospitals.

Regarding trainee competencies, knowledge about biases needs to be in the Part 1 MRCPsych curriculum. The RCPsych eCPD portfolio has 2 modules dealing with bias, with the latter focussing on how these can compromise effective leadership in teams. In terms of clinical practice, clinical leaders and supervisors need to be conscious of bias when making diagnoses and decisions. Furthermore, Case Based Discussions (CBDs) need to examine potential biases, and how these were safeguarded against.

Knowledge of Neuroscience developments entails a steep learning curve for both trainees and trainers, aligned to CQC requirements to upskill psychiatrists knowledge and competency in identifying and managing common medical conditions, such as those involved in the 'toxic triad' mentioned above. The expectation of the 'parity of esteem' agenda is to eliminate the morbidity and mortality gap between the general public and mental health patients, this needs focussed training and possibly continuing assessment of career psychiatrists as well as trainees.

How psychiatrists act

The key aspect of psychiatry is communication. However, a common theme based on general practitioner (18) and hospital doctor (19) feedback is that written communication by psychiatrists tends to be disorganised, unnecessarily lengthy and inadequately headlined with 'key items' such as diagnosis, risk management, treatment and follow up.

On interviewing, service users often describe 'passive listening' by trainees, who ignore repeated questions (20). In some instances, trainees appear to respond to direct questions with a further question. This might be due to anxiety to achieve a diagnosis.

Similar findings have been elicited with qualified psychiatrists (21) with younger and female doctors performing better in handling patient questions. Care Planning (CPA) meetings have also had mixed feedback from service users (22), with concerns about being interrogated, not having specific questions addressed, not knowing staff in attendance, not seeing the consultant beforehand, and being expected to wait without a set appointment.

Full disclosure of benefits and side effects of treatments leading to shared decision-making is stipulated in national guidance for major psychoses (23). Evidence of this actually taking place consistently is lacking (24). Particular concern has been expressed about psychiatrists not discussing metabolic, cognitive and stroke risks associated with antipsychotic medication (25).

Furthermore, appropriate discussion leading to shared decisions respecting a patient's right to take risks in order to maintain their privacy and family life (article 8 of the European Convention of Human Rights) is recommended (26), but not always achieved.

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A specific example of where 'co-production' could be helpful is in the field of risk remediation. There is no evidence that clinician generated risk assessment (including the use of structured risk scales) is effective in predicting actual suicidal behaviour (27). Recently, co-production; jointly writing a suicide safety plan for all service users in receipt of mental health services has been devised (28). This includes documenting resilience factors, harm reduction strategies and agreeing reliable points of contact if suicidal thoughts arise.

On trainee competencies, demonstrating sensitivity and flexibility when taking a history or giving information is a valuable competency. There is a role for 'experts by experience' (patient and carers) to teach and assess consultation skills (29). Furthermore, the recent adoption of 'Open Dialogue' (30) in admission prevention provides trainees with consultation skills aimed at helping patients and families to formulate their understanding of the current problem, leading to their own solutions. Furthermore, learning how to complete a suicide safety plan with a patient and carer should perhaps be a competency for all trainees, independent of speciality.

Learning to use a template such as SBARD (31), in handovers, CPA meetings, routine documentation and letters will help in improving salience and brevity. Templates are used increasingly in other specialities, for example in Radiology and Geriatric Medicine. The SBARD format will also facilitate efficient telephone triage of new assessments, and in skype consultations with patients either accompanied by carers, GPs or nurses (32).

Competencies in knowledge include understanding cardiovascular protection via medication, exercise and nutrition, so an informed discussion on health promotion can take place with patients, for example using 'Q Risk'. Understanding sleep disorders (33) should perhaps be mandatory for psychiatric trainees, as it is for trainee neurologists. Regarding medical topics, knowledge on metabolic syndromes, as well as 'neuroinflammation'; the relevance of activated microglia and changes in the complement cascade in major depression and non-affective psychoses could be potential sources of examination questions for the MRCPsych part 1 exam.

How psychiatrists reflect

Objective reflection, using outcome data is difficult to collect due to 'new ways of working' leading to prompt discharge, and follow up by a separate team (34). Furthermore, publication of outcomes of Consultant led teams is often lacking, so analysis of 'outliers' cannot take place. This is despite all provider organisations collecting information on time to be diagnosed, medication errors, complaints, ratio of new assessments to discharges, friends and family test results etc.

The usual method of reflection, the Case Based Discussion (CBD), is a snapshot of process rather than outcome, with no feedback from patients (35). However, it provides a framework to review the logic leading to a diagnosis, and the rationale for treatment selection and follow up arrangements. Defensibility of documentation can be examined although checking validity of contents, although examining documentation of other professionals is rare. The process of selecting cases for a CBD varies, but often a case is selected by the psychiatrist rather than a random selection by another person.

All doctors are subject to 360 degree feedback on personal qualities, involving anonymised input from colleagues, patients and managers. However, feedback provided can simply reflect an isolated contact, and might not reflect a longer term experience of the doctor, as provided in a reference. There is also the potential for false assessments by respondents associated with affective bias (36).

Reflection on effectiveness of various treatments rests on awareness of relevant research findings. There is limited understanding 'publication' bias (37) - especially awareness that publication rests on financial and academic interests of the authors, journal editors and pharmaceutical companies. Trainees might not appreciate the constraints of discussion led by paid speakers and chairs at meetings sponsored by the pharmaceutical companies due to 'commercially sensitive' issues.

Reflecting on history and ethics of psychiatric practice is rare, largely due to its neglect in the curriculum. Previous psychiatric involvement in Eugenics and Social Darwinism are not considered by most trainees (38), and not part of the current curriculum. Ethics of enforced treatment is taught mainly on the basis of legal requirements - i.e. how restriction can be carried out - rather than if restriction is in the best interest of the person. Furthermore, the social and governmental expectations of psychiatrists are rarely discussed due to the fear of appearing overtly political.

Trainee competencies for reflection include being able to critically appraise a research paper. Trainees can join a team carrying out a systematic review via the Cochrane Collaboration, which will provide the necessary training and mentoring needed. History of Psychiatry lends itself to MCQ type questions for the part 1 exam, and will help inculcate an appropriate ethical framework.

A further competency is the ability to be aware of the various influences restricting independent thought, including requirements of the training curricula and peer expectations. Being able to balance powers afforded by the Mental Health Act with human rights of individual patients, including the right to take risks in order to return home is a key competency for senior trainees. Independent thinking requires support; perhaps group reflection - the equivalent of Balint groups in General Practice (39) could also be helpful.

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Conclusions

Critical Psychiatry often elicits a combination of fear and irritation amongst some psychiatrists; hopefully this article can dispel some of the accompanying myths about the approach, and encourage critical thinking by all psychiatrists.

Dualistic thinking remains a problem in all branches of medicine, including psychiatry, despite evidence to the contrary (for example between Schizophrenia and Bipolar disorder, Vascular and Alzheimer's dementia, physical 'disease' and 'medically unexplained' symptoms). There needs to be an attitudinal shift which could be inculcated via teaching rounds involving sub specialities. Joint working to target the so called toxic triad described above would be a good place to start.

Perhaps another attitudinal shift is to 'think outside the box' about psychotropics; moving away from seeing these drugs as 'treatment' for diseases, towards methods of temporarily reliving specific symptoms independent of diagnoses.

Moncrieff (40) has described psychotropics as legal mind altering chemicals, capable of changing a person's mental state for the better or worse (sometimes a bit of both). Impartially summarising the effects of a drug to service users using layman's language is a key general competency for psychiatrists and other doctors alike, going back to the essence of the Hippocratic Oath 'primum non nocere'.

MCQs – Best out of 5 answers

1. Critical Psychiatry

a. Is a belief system

b. Critiques how doctors think (Best)

c. Is against biological approaches

d. Hopes psychiatry will implode

e. Is against use of antipsychotics

2. Common thinking errors include

a. Delayed gratification

b. Need for classification

c. Confirmation bias (Best)

d. Use of feelings

e. Use of heuristics

3. Recent neuroscience findings include

a. Autonomous circuits

b. Stress responses causing depression

c. Hypercortisolaemia

d. Synaptic overgrowth in depression

e. Synaptic pruning by microglial activation (Best)

4. Research on interviewing skills of psychiatrists

a. Recommends more structuring

b. Suggests older psychiatrists do better

c. Younger psychiatrist are more responsive (Best)

d. Female psychiatrists no better than male

e. Feedback from users unhelpful

5. Study of history and ethics of psychiatry

a. Includes study of eugenics (Best)

b. Excludes human rights

c. Is associated with anti-psychiatry

d. Teaches when not to declare side effects

e. Is part of the current psychiatric curriculum

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GCP & ETHICS IN THE MANAGEMENT DIFFICULTIES OF COMORBID BIPOLAR DISORDER & ALCOHOL USE DISORDER

A Roe

The comorbidity of heavy alcohol consumption with affective disorder presents considerable diagnostic challenges and warrants much patience, gentle empathy with the patient, expert engagement, caution, thorough case note review and scientific thought on the part of junior and senior clinicians. Without all of these, misdiagnosis is easy, risk assessment readily gets flawed and subsequent erroneous clinical management can easily be disastrous.

Service planning and training should allow for safe assessment of these patients until alcohol versus affective diagnostic issues are clear. Alcohol abuse cannot be used as a diagnosis of exclusion from treatment and might still warrant emergency detox contrary to policy, where the affective disorder presents additional risks.

Case History

A 27 year-old unemployed musician who lived with his girlfriend was referred directly to a new Consultant Psychiatrist in General Psychiatric Outpatients by his GP with a 1 month history of low mood most of the day, insomnia, poor appetite, pessimism, no confidence and feeling people were getting at him without being convinced of clear sinister ideas. He had drunk minimal alcohol in that period, apparently substantiated by his partner. He was being prescribed Citalopram 20 mg at night and Zopiclone 7.5mg at night from his GP.

One month previously he had been admitted to hospital for a chlordiazepoxide alcohol detox with low mood. He had managed to obtain his father's shotgun by watching and searching for the keys to the gun cabinet. These he kept hidden until he chose to use them. He contemplated suicide and a crisis escalated with him blasting a hole in his parent's floor with the weapon. Straight after discharge home from the admission, he switched into hypomanic symptoms on the basic therapeutic dose of citalopram in the absence of alcohol consumption. His mood elevated into glee. Overactive, he wrote lots of songs for a number of weeks, frequently crashing into exhaustion.

In the new outpatient assessment, he was commenced on slow-release Valproate once again, increasing to 250mg three times daily and his family reported that his mood stabilised. Guardianship and sheltered accommodation placement was recommended to Social Services who took no action. An MRI brain scan showed signs of atrophy consistent with alcohol encephalopathy, though in the absence of measurable cognitive impairment and any other signs. He sustainedly had abnormal liver function tests.

Within a month of more stable mood he drank again with no clear precipitant and became anxious. Shortly afterwards, he presented himself to Accident and Emergency describing heavy drinking and considering harming himself with a knife. He described feeling out of control and wanting to lash out. Without being seen by a psychiatrist, he was interviewed and sent home by a generic mental health worker on the basis that alcohol dependence protocols did not allow for emergency detoxification admission.

That assessment was extensive and assiduous, evidently with the records to hand, though it was bounded by training to a level of dealing with cases of limited complexity and by protocols of who saw what problems and which patients went where.

Extensive symptom screening 6 years previously by a professorial inpatient consultant team led to a diagnosis of Rapid Cycling Bipolar Disorder and Alcohol Abuse viewed by treating clinicians as self-medication. He overspent and had grandiose delusions. He then took valproate from his GP for several years though with discontinuity of follow-up and episodic alcohol dependence his response to mood stabilisation was not systematically appraised.

It was partly a manifestation of the patient's own inability to settle and engage that he saw many consultant psychiatrists. Three of those consultants who did not witness the hypomanic symptoms without alcohol were understandably sceptical about the bipolar diagnosis, which highlights the need to see all records and understand other colleagues' reasons for diagnosis.

The alcohol consumption was an 8-year history of 8-10 cans of beer or heavy Vodka consumption in stereotypic patterns all day long. He had a florid hallucinatory psychotic episode which must have been delirium tremens and often heard low-key background derogatory voices. He was tried on Olanzapine but did not like the sedation and stopped it himself without a clear new plan.

He went through normal pregnancy and birth, being brought up as an only child by both parents who were caring and nurturing, in a happy professional family. He achieved normal developmental milestones and attended mainstream school. He put tremendous energy into pestering friends and family as well as a local jeweller in collecting 86 clocks and watches, around age 7.

Then, at age 8, he had a winter onset depression, isolating himself, going very low in spirits and being quietly preoccupied with distress and fear about the supernatural. That was a very important part of the history diagnostically. He had attention from child psychiatrists at age 11 presenting with repeated descriptions of early onset obsessive compulsive symptoms, depression and hypomanic symptoms in the absence of alcohol abuse.

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A Roe

He missed 18 months of school with depression prior to his GCSE exams only attending sporadically, but took exams on the due dates and achieved good grades. He was seen at age 16 by a psychiatrist who decided that he had OCD and gave him medication for obsessive compulsive disorder. There was no follow up.

There was a clear family history of major depressive disorder in one second degree relative and of possible bipolar disorder in another, though that was not substantiated. That information was important in weighing up the aetiology of a diagnosis of alcoholism versus alcohol and affective disorder.

He left the new outpatient arrangements and was seen by different teams who, adhering to due process and justifying their decisions, worked with him with a diagnosis of alcoholism. Later staff reverted to a diagnosis of comorbid affective disorder and Substance Use Disorder. He died at age 31 of physical complications of alcohol without ever remitting from his drinking or bipolar disorder.

Discussion

Three high quality recent papers have substantiated important scientific background to this case. Self-reported alcohol use in adolescence predicts the future onset of hypomanic/manic symptoms. (1) In a thorough meta-analysis, males with a history of a higher number of manic episodes and suicidality are associated with a higher susceptibility to Substance Use Disorder. (2) Analysing 16 studies of substance use in bipolar disorder, valproate or naltrexone may decrease alcohol use. (3)

It is possible that a degree of organic brain change was contributing to treatment resistance in his affective symptoms and inexorable self-medication and dependence with alcohol. That is important in appraising vulnerability and social care planning.

The impact of this patient's crises on his caring family over many years was catastrophically stressful.

The onset of severe complex mental disorder in childhood in individuals of normal intelligence and the absence of organic psychiatric disorder is often the herald of such severe complex disorder in adulthood. A thorough history of symptoms in childhood from the adult patient is crucial to understand that and can help untangle the underlying condition being masked by current heavy drinking.

It is helpful that the latest NICE guideline (4) on comorbid mental illness and substance abuse emphasise the need for social care and not using substance abuse as a criterion of exclusion from such.

As with individuals with alcohol dependence syndrome who do not have affective disorder, comorbid alcohol-affective disorder patients can still prove impossible to help in sustaining alcohol abstinence. Clinicians need to try and to keep trying, because the results of appropriate medication, risk management and alcohol treatments can be immensely beneficial.

Use of the Mental Health Act in crises requires extra consideration in comorbid substance abuse and mental illness. Again, alcohol use cannot be used to justify treatment exclusion in applying the Mental Health Act to those who are also mentally ill.

Clearly all domains of good clinical practice come to the fore in these cases. It makes them hard and harder still when colleagues may struggle with those issues. All clinicians who are involved in these dual diagnosis cases need detailed knowledge of diagnosis and treatment, competent skills and tenacious performance.

Safety and quality are paramount and it can be a struggle to maintain communication, partnership and teamwork whilst holding the patient's trust. Breaches of continuity of care are a common manifestation of the complex behaviour and social chaos.

It needs a conscious effort in meeting and crafting clear letters to all agencies to the point that you can reasonably do no more, from the senior clinician's perspective. Care plans in what can be complex community team working need to be clear and shared across the disciplines. The same goes for communication to, from and within any hospital departments and GPs.

MCQ's

1. Which one of the following is true?

A. It is safe practice to send a fluctuatingly-suicidal alcoholic home from A&E without checking past psychiatric history.

B. A confused man smelling of alcohol in A&E cannot have had a subdural haematoma.

C. A confused adolescent female holding an empty vodka bottle on a home visit has not had a brain injury.

D. A suicidal, alcohol-intoxicated patient with a known history of major depressive disorder presenting to the GP can be sent home without follow-up.

E. Patients with Bipolar Disorder are at extra risk of self-medicating with alcohol.

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2. Which one of the following is false?

A. Intoxicated patients with depressive symptoms can be considered for detention under the Mental Health Act.

B. Alcohol dependence can maintain depressive symptoms below the threshold of Major Depressive Disorder.

C. It is not possible to carry out pharmacological management of alcohol dependence and Bipolar Disorder simultaneously.

D. Psychotherapy for Depression and problem drinking can be done simultaneously.

E. Early onset of severe affective disorder in children has a greater risk of the same presentation in adulthood.

Answers

1. E

2. C

I am grateful to Professor Stephen Martin for his supervision with this report and to this patient's family who have been immensely supportive of the need for such difficult clinical issues to be published and most understanding in their tolerance of the differing views of clinicians.

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POSTPARTUM PSYCHOSIS

R Al-Bader, R Moore

Abstract

Childbirth is a period of rapid physiological change that can provoke a wide variety of psychiatric illnesses in new mothers. Arguably the most severe of these illnesses is postpartum psychosis (PP), a condition that begins suddenly in the days or weeks after birth. PP can become very serious within a matter of hours or days. Women suffering from PP are at increased risk of both suicide and infanticide.

Early diagnosis is key to mitigating the severity of PP and prompt instigation of treatment leads to more rapid recovery. It is therefore vital that junior doctors are aware of the symptoms of PP and the appropriate referral pathway that will ensure these patients receive specialist care quickly.

Case History

Mrs X was a 29 year old married lady who presented in accident and emergency (A&E) 48 hours after the birth of her first child. She had no prior psychiatric history of note.

Mrs X presented at 3 am with her husband and newborn baby, asking for help with regards to housing. Whilst in A&E her behaviour was noted to fluctuate hourly with episodes of elated mood, tearfulness, paranoia and aggression towards staff. She was irritable towards her husband and said she wished to divorce him.

She became progressively more restless and elated over the next few hours and would not sleep or eat.

She then began to strip herself of her clothing and was attempting to leave A&E. This led to an emergency Mental Health Act 1983 (MHA) assessment. She was detained under Section 2 of the MHA.

Mrs X was transferred to the local Mother and Baby Unit (MBU) and made a good response to treatment with oral lithium and olanzapine. She was not able to breastfeed. Her mood settled over the next three months and she had intensive nursing and psychological support prior to discharge home. There was no Children's Social Care input on discharge and she was parenting with family support.

Epidemiology

Around 1 in 1000 women who give birth in the UK will experience PP (1). Though the condition is rare relative to other perinatal mental health conditions such as postpartum depression, it is considered a psychiatric emergency and should be considered in any patient presenting with early postpartum psychiatric symptoms.

Risk Factors

Several risk factors for susceptibility to PP have been investigated. The best-established risk factor is a history of bipolar disorder (BD). Women with BD have a greater than 20% risk of developing PP after delivery (2). Women who have both BD and a family history of PP are at an even higher risk, with over 50% of deliveries to women in this group leading to PP (3).

The fact that postpartum triggering of BD appears to run in families suggests that there may be a genetic basis for PP susceptibility, though so far evidence implicating specific genetic variants is limited. Despite personal and family history playing a role in some cases of PP, it is important for clinicians to bear in mind that half of all women who develop PP have no history that would suggest that they are at high risk (4).

The role of several other factors in the aetiology of PP, such as mode of delivery, sleep deprivation and hormones, has been studied. The only factor that has been consistently shown to be linked to PP is parity, with PP most commonly developing in women following delivery of their first child (5).

Presentation

PP most commonly presents in the first two weeks after birth. Onset is rapid and the condition can quickly become very serious. The most prominent feature of PP is a change in mood: this is most usually mania, though women can also present with low mood or mixed episodes (6).

Features of psychosis such as delusions and hallucinations are frequently experienced and in some cases these delusions can relate to the new baby. Other presentations include severe confusion and difficulty in sleeping. The clinical picture often shifts rapidly, with patients showing severe mood swings and changes in the intensity of symptoms (7).

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Some women with PP express suicidal ideation, and around 2 out of 1000 women with PP will commit suicide (8). The risk of infanticide, though very rare, is also increased (9). It is therefore vital that doctors are prompt to assess the safety of patients and their children and to make referrals quickly and appropriately.

Assessment

National Institute for Health and Care Excellence (NICE) guidelines suggest that doctors must be alert for the signs of PP in the first two weeks after childbirth in any woman with a severe mental illness or a family history of severe perinatal mental illness in a first-degree relative (10). As the clinical presentation of PP can change very quickly, the initial impression can be misleading. One of the most important tasks of a junior doctor is therefore to take a thorough personal and family medical history and to document this fully.

Initial assessment should include a full clinical examination. Blood tests that should be ordered include a full blood count, liver function, electrolyte levels, kidney function, glucose and thyroid function to exclude an organic cause for the presentation. A toxicology screen should also be carried out.

What to do as the junior doctor if you suspect PP

- **Enquire about care of the baby and ensure that the baby is safe in the first instance whilst a plan is made.**
- **Look out for red flags: any recent change in mental state or emergence of new symptoms in the postpartum period should alert you to the possibility of PP.**
- **Treat suspected PP as an emergency situation.**
- **Take a thorough history from the patient (and a collateral history if possible), including of previous mental illnesses both in the postpartum period and outside of this period.**
- **Ask specifically about family history of mental illness, including any episodes confined to the postpartum period.**
- **Perform a thorough physical examination.**
- **Order relevant blood tests, to include full blood count, liver, kidney function, electrolyte and glucose levels and toxicology screen.**
- **Contact your supervisor promptly to explain your concerns.**
- **Ensure that a psychiatric referral is made and that the psychiatric team understand the seriousness of the situation.**
- **Enquire about care of the baby and ensure that the baby is safe in the first instance whilst a plan is made.**

Treatment

PP is a psychiatric emergency. As soon as PP is suspected, a referral should be made to a mental health team (10). NICE guidelines suggest that all cases of PP be referred to a secondary mental health service, preferably a specialist perinatal team. Psychiatric assessment should be carried out within four hours of referral (10).

Most PP episodes are so severe that they necessitate inpatient care. Where available, women should normally be admitted to a specialist MBU (10). MBUs avoid separation of mothers and babies and enhance bonding. However, many areas in the UK do not have MBUs, and in these cases patients with PP will be admitted to a general psychiatric ward. Family or partners will need to care for the baby, or as a last resort social services may take the baby into care temporarily.

Women with PP are usually initially prescribed antipsychotics and mood stabilising medication over the longer term. They may require benzodiazepines for agitation short term. Breastfeeding may not be possible due to the secretion of medication into breast milk posing a risk to the baby, but will always be supported if possible.

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The most severe symptoms of PP typically last two to 12 weeks. However, many patients will experience depression or anxiety once the psychosis has resolved. Some patients have difficulty coming to terms with their behaviour during their illness, particularly if these include distressing thoughts about harming the baby. Mental health services will be involved in supporting women once they go home. Most patients make a full recovery from the postpartum episode, though 25% of women experience ongoing symptoms a year after delivery (11).

Risk of Recurrence

The risk of a subsequent postpartum episode in women who have previously suffered from PP is extremely high. Puerperal recurrence has been estimated over 50% (11). As well as the risk in subsequent pregnancies, women who have experienced PP have a greatly increased risk of developing mental illness that is not related to the postpartum period. Non-puerperal recurrence has been estimated to be as high as 70%, with the majority of women developing PD (11). Avoiding pregnancy in the future does not therefore protect women who have suffered from PP from experiencing future episodes of illness, though many women may choose not to have another baby after experiencing PP (11).

The risk of future illness needs to be clearly communicated to women so that they can make fully informed decisions regarding future pregnancies. Any woman at high risk of PP should have specialist care during pregnancy, preferably from a perinatal psychiatrist (10). Clearly prophylactic interventions for PP would be very valuable, though the current evidence for starting medication in late pregnancy or immediately after delivery is inconclusive.

Multiple Choice Questions

1. Which of the following symptoms is most prominent in PP?

a. Delusions

b. Hallucinations

c. Rapid changes in affect

d. Fluctuating cognition

e. Apathy

2. Which of the following mental illnesses is most strongly linked with the development of PP?

a. Schizophrenia

b. Schizoaffective disorder

c. Depression

d. Bipolar disorder

e. Anxiety

3. What is the risk of developing PP in a woman with PD?

a. Around 10%

b. Around 20%

c. Around 30%

d. Around 40%

e. Around 50%

4. What is the risk of recurrence of PP in subsequent pregnancies?

a. 40%

b. Around 50%

c. Around 60%

d. Around 70%

e. Around 80%

5. In the treatment of PP

f. Women should not breastfeed

g. Electroconvulsive therapy is never used

h. Hospital admission is not usually required

i. The patient should be given advice about the risk of postpartum recurrence and of developing a mental illness unrelated to the puerperium

j. It is not possible to identify women at high risk of PP before delivery

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Answers

1. Answer: *The most common presenting symptom of PP is a change in affect. Mania is most frequently observed, though depressive symptoms are also seen.*

2. Answer: *There is strong evidence to link the development of PP with BD.*

3. Answer: *If a pregnant woman has BPD, the risk that she will develop PP is 20%.*

4. Answer: *If a woman has experienced PP after one pregnancy, the chance of a postpartum recurrence is 50%.*

5. Answer: *All women who have experienced PP are at extremely high risk of developing PP in subsequent pregnancies and of developing a serious mental illness that is unrelated to the postpartum period later in life. These women should be advised of these risks and provided with support in making decisions regarding future pregnancies.*

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THE THERAPEUTIC RELATIONSHIP: THE BEST MEDICINE

K Hay, MJ Tacchi

The therapeutic relationship

The therapeutic relationship is defined by Kornhaber et al as 'a relationship which is perceived by patients to encompass caring and supportive non-judgemental behaviour, embedded in a safe environment' (1). It is the cornerstone of all clinician/patient interactions in all branches of medicine and is especially so in psychiatry. We review the components and benefits for both patient and clinician of a successful therapeutic relationship. We then discuss a model which we believe can easily be used in clinical practice to promote a successful interaction by encouraging patient autonomy and choice whilst allowing the clinician to listen and find out rather than make assumptions.

Why does it matter?

Balint stated that 'the most powerful therapeutic tool the doctor possessed was himself' (2). It is widely acknowledged that outcomes, particularly in psychiatry, improve when the therapeutic relationship is strong. In psychotherapy, for example, up to 30% of the variance in outcome is due to the quality of the therapeutic relationship (3). A review by Stewart et al showed that a good therapeutic relationship in General Practice improves patient satisfaction, gives a greater sense of professional fulfilment, saves time, increases adherence with prescribed medication and reduces the chance of the GP being sued (4).

Qualities of a good therapeutic relationship

Much has been written about the specific qualities of the therapeutic relationship which are important to its success (Box A). Carl Rogers suggested that congruence, unconditional positive regard and empathy were the core components a clinician should possess for therapeutic change, the so-called humanistic or 'person centred approach' (5). Other essential qualities are showing warmth, lack of tension and non-verbal expressiveness (6,7).

Communication is at the centre of this interaction and Rost advocates a communication style that is inquiring and allows discussion of the patient's concerns (8). The skill for the clinician is to ask questions and listen in order to guide the patient's discovery rather than telling the patient what to do. An atmosphere should be created where the patient can communicate openly and honestly and not fear being judged.

A Model

From the beginning of the twentieth century psychologists have described models to explain and predict health behaviours. The Health Belief Model was first described by Rosenstock et al (9) in the 1960s which stated that a person's health seeking behaviour was related to their perception of their susceptibility to and the severity of the threat combined with the perceived benefits and barriers to receiving help. The model has been developed over time and in 1987 Leventhal identified coping strategies as being an important part of the picture. The result was the 'Self-Regulation model' or 'Cognitive Representation of Illness' model (11).

- **Qualities: Warmth, positive regard, lack of tension, empathy and respect**
- **Communication style: Asking and listening rather than telling**
- **Patient participation: Answering patient concerns, allowing discussion**
- **Collaboration: Mutual understanding and goal setting**
- **Time: Do not rush**

Box A: The keys to a positive therapeutic relationship (adapted from Tacchi and Scott 2005) (10)

We believe that this model is particularly helpful to build an understanding of the patient's illness beliefs which can then be used by clinician and patient to gain a shared understanding of the issues in order to arrive at an agreed goal or outcome. The model is simple and easy to use both for clinicians and patients and combines cognitive and behavioural principles.

The model encourages patient participation and collaboration and is specific to the individual's beliefs and circumstances and in this way promotes the qualities of a successful interaction. Once there is joint understanding an exploration of the patient's coping strategies is made to see what can be built upon and what can change.

The model describes how an individual constructs an understanding of what is happening to them when they become unwell and has three core elements:

- *A cognitive representation of the meaning of the health threat*
- *A coping strategy to deal with the problem*
- *An appraisal of the coping strategy*

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The cognitive representation is divided into five themes. These are:

What is it (identity)?

What caused it (cause)?

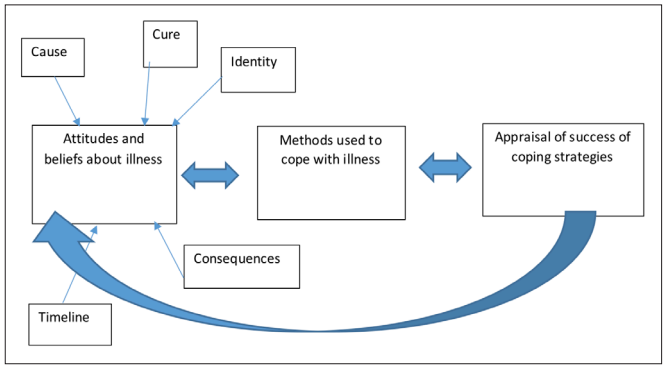
How long will it last (timeline)?

What effects will it have (consequences)?

What can I do about it (cure)?

The person will then, using their understanding of the problem, make an attempt to solve it. The third part of the model states that after employing a coping strategy the individual will appraise how successful this has been which will influence whether they need to modify this.

The model states that individuals who perceive coherence between their experiences of the symptoms, the meaning that they have assigned to them and the explanation offered to them by a clinician are much more likely to engage with the professional. The clinician, therefore, needs to find a way of understanding the patient's experience before suggesting treatment options. The model is depicted in Box B.



Box B: Diagrammatic representation of Levanthal's self regulation model.

The Model in Practice

To demonstrate the model we will use an example of a patient who presents with depression.

The doctor explores her beliefs in the five areas:

Identity: *What is it? She describes that she has developed loss of interest and enjoyment in activities and poor sleep. She has stopped meeting her friends at weekends and is making silly mistakes at work. These symptoms seem to be there all the time and nothing helps.*

Cause: *What caused it? She recounts a number of recent life stressors – the breakup of a relationship and the death of her grandmother. She describes difficulties at work.*

Timeline: *How long will it last? The problems have come on gradually over the last 2 months and seem to be getting worse - she can't understand how she can't cope and feels this is never going to end.*

Consequences: *What effects will it have? She is ashamed of how she is feeling and has not told her friends and is avoiding them as a result. She worries about if this will affect her job.*

Control: *What can I do about it? She is keen to solve this herself and has joined a gym but this isn't helping and the fact that she can't be bothered to go which is making her feel worse. She said she has started to drink 2 glasses of wine at night to help her sleep but this is giving her a headache in the morning. Her mother made her an appointment to see the doctor but she is embarrassed to ask for help as she feels this is a sign of weakness.*

What the doctor now knows

The doctor has heard and recounts to her that she is experiencing symptoms that meet the criteria for a depressive episode (see box C). This appears to have been precipitated by loss and that she is someone who is resourceful, who likes to solve her own problems and not rely on others.

Appraisal of coping strategies

The doctor and patient then discuss her coping strategies and how successful they have been. The doctor recognises her need to solve her own problems and stay in control but commends her for coming to see him. They both decide the gym was a good idea but is backfiring as she isn't well enough to go. She recognises the alcohol helps her to get to sleep but is adding to her sense of failure.

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Reaching a joint goal

By using the model the doctor has a clear understanding of what the problem is, the patient feels that she has been listened to and her views taken seriously. He then uses this as an opportunity for psychoeducation that she has developed a depressive illness and that although she has made a great start to manage this is it time to do more. He can then use the patient's attitudes and beliefs to inform treatment suggestions to maximise success.

• Episode lasts for at least 2 weeks

• No previous hypomanic or manic episodes

• Symptoms not attributable to use of psychoactive substances or organic illness

At least 2 of the following 3 symptoms must be present:

• Depressed mood present for most of the day and almost every day, largely uninfluenced by circumstances, and sustained for at least 2 weeks

• Loss of interest and pleasure in activities which are normally pleasurable

• Decreased energy or increased fatigability

And additional symptoms from the list below to give a total of at least 4, including the 3 symptoms above

• Loss of confidence and self esteem

• Unreasonable feelings of excessive and inappropriate guilt

• Recurrent thoughts of death or suicide, or any suicidal behaviour

• Reduced concentration

• Change in psychomotor activity – with agitation or retardation

• Sleep disturbance of any type

• Change in appetite with corresponding weight change

Box C: ICD (10) diagnostic criteria for a Mild Depressive Episode

After a discussion, they agree that she is experiencing a mild depressive episode. They look at the NICE guidance for the treatment of depression together. Initially, the GP offers the patient advice on how to improve her sleep, but she states she already adheres to sleep hygiene advice. They look further at the guidelines which advise either psychological therapies or group exercise therapy for the management of mild depression.

Given she has already tried to tackle her symptoms by going to the gym, the patient feels this is not the option for her. They then consider the NICE recommended psychotherapy options. The patient opts for computer based CBT, and the GP gives her the information for appropriate online CBT resources.

The patient is happy with this as this will also equip her with the skills she needs to manage her own symptoms. The patient feels as though she is in control, as she has a better understanding of depression through discussion with the doctor. She leaves the appointment already feeling more positive for the future.

• Sleep hygiene advice

• One or more of the following

- Computerised CBT

- Individual guided self-help (based on the principles of CBT)

- Structured group physical activity programme

• If the person declines the above, offer Group CBT

• Consider medication only if:

- There is a past history of moderate to severe depression

- Symptoms have been present for a prolonged period (at least 2 years)

- Depression persists after other interventions

Box D: NICE Guidelines for the management of a mild depressive episode (12)

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Conclusion

It is sometimes argued by clinicians that they don't have time to use such a model in a busy clinic. We would argue that this is time well spent if it cements the vehicle through which change and recovery occurs. This model allows for the development of a strong and successful therapeutic relationship. The end result is a mutual understanding, the opportunity to challenge beliefs or correct misinformation, the production of a collaborative plan which is more likely to be adhered to, leading to a better outcome for the patient and professional satisfaction for the doctor.

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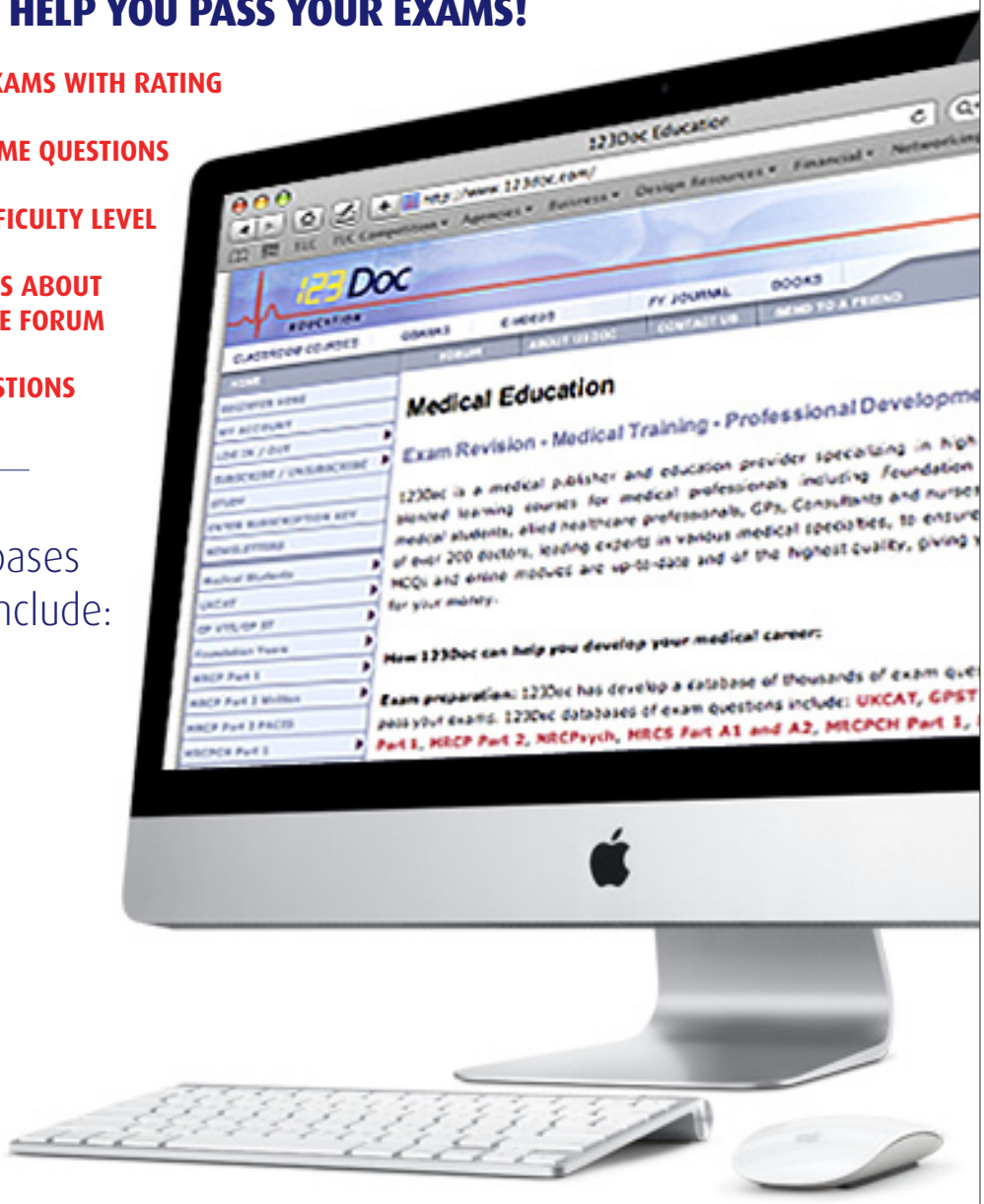

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