

education

FROM THE JOURNALS Edited highlights of Richard Lehman's blog on <http://bmj.co/Lehman>

Missed miscarriage: two drugs better than one

Unsuccessful pregnancy is a difficult thing to talk about. That's reflected in the rather awkward language of this paper. I remember the days when the approved technical terms included "blighted ovum" and "incomplete abortion," horrific words to be overheard by mothers undergoing the trauma of knowing their pregnancy was at an end. Even today, the title of this article in the *New England Journal* refers to "early pregnancy loss" when it really means pregnancies which are non-viable, but not yet lost. In this situation of early fetal death or an anembryonic pregnancy detected on ultrasound, intravaginal misoprostol is the standard management to expel the gestational sac, but when used alone it fails in about a third of cases. This randomised controlled trial shows that if 200 mg of mifepristone is given by mouth the day before, the success rate of misoprostol treatment goes up from 67% to 84%. The treatment of "missed miscarriage" has become more effective thanks to a simple publicly funded trial using cheap drugs.

• *N Engl J Med* doi:10.1056/NEJMoa1715726

A use for bezafibrate

In the days when lipidologists used bezafibrate to lower lipids, my chief role was to see the patients later when they complained of muscle aches, abdominal pain, and bloating, and to tell them that it didn't matter if they stopped taking it. Now it emerges that the only patients who really should take bezafibrate are those with primary biliary cholangitis. A French trial in 100 patients shows that patients whose liver enzymes fail



How much oxygen for very premature babies?

The last time I was in a special care baby unit was in 1978, when I worked a 1 in 2 paediatric rota. All night long we stabbed these tiny infants to get blood gas measurements. The burning question then was how much oxygen to give them to maintain good saturations and avoid necrotising enterocolitis while avoiding retinal damage from too much. Forty years later, we have another study of this very question, which is still partially unresolved. It takes the form of a prospectively planned meta-analysis of individual participant data from extremely preterm infants. There was no statistically significant difference between a lower SpO₂ target range compared with a higher SpO₂ target range on the primary composite outcome of death or major disability at a corrected age of 18 to 24 months. The lower range was associated with a higher risk of death and necrotising enterocolitis, but a lower risk of retinopathy of prematurity treatment.

JAMA doi:10.1001/jama.2018.5725

to normalise with ursodeoxycholic acid have a very high rate of biochemical remission when given added bezafibrate compared with those given placebo (both groups continuing ursodeoxycholic acid). This is a surrogate, of course, but a very promising finding. And in this study, the only major adverse effect was muscle pain—10% in the placebo group and 20% in those taking bezafibrate.

• *N Engl J Med* doi:10.1056/NEJMoa1714519

Please share my data

In only six years, we've won the battle for the principle of full sharing of datasets from clinical trials. Some of the counterarguments have died away—eg, that the triallists have a moral right to the data they collected, that only they can interpret it, or that it will be misused for frivolous or litigious purposes. But among the more serious objections is the idea that some trial participants do not wish their data to be more widely used, even when anonymised. In the past, consent was not obtained for such use. A survey of 771 current and recent participants from a diverse sample of clinical trials at three academic medical centres in the US found that 93% of respondents were happy for their data to be shared. The respondents' greatest concerns were that data sharing might make others less willing to enrol in clinical trials (37% very or somewhat concerned), that data would be used for marketing purposes (34%), or that data could be stolen (30%). Less concern was expressed about discrimination (22%) and exploitation for profit (20%).

• *N Engl J Med* doi:10.1056/NEJMsa1713258

COULD YOU WRITE A WEEKLY JOURNAL REVIEW?

The BMJ is looking for someone to replace Richard Lehman who will be retiring from writing his weekly reviews this summer. We are interested in candidates with excellent knowledge of research and critical appraisal, and an understanding of how research affects clinical practice. We are particularly interested in candidates who have clinical experience and an excellent standard of English. You

must be motivated, creative, and able to write the reviews to a tight deadline every week. This freelance position offers a salary per column.

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The trauma call

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Trauma is the leading cause of death for people under 40 in the UK, and a major cause of debilitating long term injuries.¹ Major trauma usually refers to a seriously injured patient or a patient with multiple injuries requiring a coordinated multidisciplinary approach to their care. Twenty per cent of patients in the UK survive severe trauma. An audit of the major trauma services in England identified deficiencies in care contributing to high in-hospital mortality in trauma patients.² Typically, such patients are managed in the emergency department after a trauma call is put out to assemble a trauma team. The trauma team must rapidly assess seriously injured patients and start treatment in a timely manner.

Here we aim to help clinicians familiarise themselves with the essentials of managing patients with major trauma as part of a team in an emergency department, drawing from our experience and from 2017 guidelines from the UK's National Institute for Health and Care Excellence (NICE) for head injury and major trauma. The practice and team constitution may differ based on resources and organisation of health services; however, we expect the basic principles of organising and responding as a trauma team will be relevant.

Who is involved in a trauma team?

Trauma teams are assembled rapidly by people who might work together infrequently in a time critical situation. A dedicated leader maintains a close awareness of the situation and plans the next steps, supported by a multidisciplinary team. Table 1 (p 412) outlines the members and responsibilities of a typical trauma team.

If there is more than one patient, the team leader will initially split the team. There will usually be a provision to call for additional help from multiple trauma teams from within the hospital.

WHAT YOU NEED TO KNOW

- A trauma team assembles rapidly in response to a major trauma and has a dedicated leader, usually an emergency medicine consultant, supported by a multidisciplinary team.
- Initial assessment follows the mnemonic <C>ABC—ie, control of bleeding, assessment of airway, breathing, and circulation, and investigations such as blood group, coagulation tests, and chest and pelvic radiography.
- The team leader coordinates care, following the principles of damage control resuscitation to control bleeding and restore tissue perfusion.

EDUCATION INTO PRACTICE

- If you have participated in a trauma call before, what was your experience? How does this article offer you ideas on improving your participation next time?
- Find the survival rate of patients with major trauma in your institution, and the average time for a trauma patient with a suspected head injury to receive a computed tomography scan (these data are also collected by the Trauma Audit and Research Network). What measures do you think could improve these?

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

A patient representative reviewed an earlier version of this paper. He highlighted the need to keep the patient and family members informed of what happens in the trauma centre and of treatment decisions being taken. We agree this is an important responsibility of the trauma team leader, and have added it to the text.

When is a trauma call activated?

The hospital sets specific criteria for activation of the trauma team following an alert from the pre-hospital team or ambulance service. The figure (p 412) lists some situations when a trauma call is activated.

How does the trauma team organise before the patient arrives?

The trauma team assembles in the emergency department or trauma bay once they receive a message by pager. The trauma team leader briefs the team on the information they have received from the pre-hospital team, outlines what they expect to happen, and allocates roles to the team. The team then stay in the resuscitation bay until the trauma call has finished.

The trauma team must work in an unfamiliar environment under pressure, and this can lead to mistakes and near misses.³ Good technical expertise and understanding of human factors are important.^{4,5} Human factors “enhance clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture, and organisation on human behaviour and abilities and application of that knowledge in clinical settings.”⁶ In major trauma, human factors are considered in the way the trauma bay is organised, the equipment designed, and the standard operating procedures are written, alongside periodic training of the trauma team. Leadership, teamwork, followership, communication, decision making, and situational awareness are important.⁷ Table 2 (see bmj.com) lists communication elements in a trauma call that facilitate teamwork. Situational awareness—the perception of the elements in the environment, their comprehension, and the projection of their status in the near future—is important for the team leader.⁹

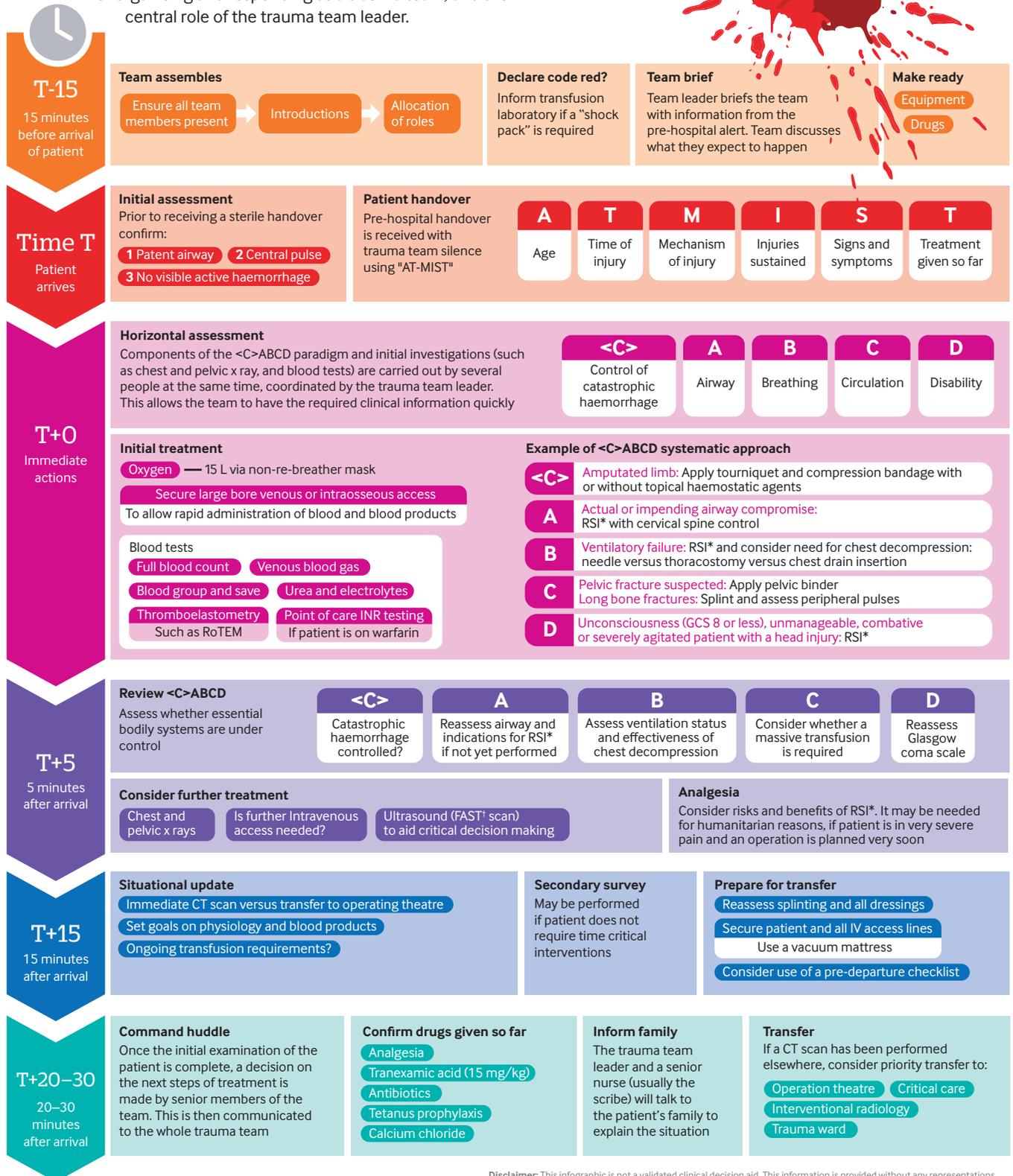
How does the pre-hospital team hand over the patient?

The pre-hospital team are those who respond to the patient at the site of trauma, provide initial treatment, and transfer to a major trauma centre. The team might include two paramedics or a consultant trained in pre-hospital emergency medicine. They initiate the pre-hospital alert call, which is routed through the ambulance service headquarters to the trauma centre in the vicinity.

Trauma call timeline



This suggested trauma team timeline is based on a combination of guidance from expert opinion and experience of UK emergency departments. It aims to help clinicians familiarise themselves with the basic principles of organising and responding as a trauma team, and the central role of the trauma team leader.



* RSI = Rapid sequence induction of anaesthesia

† FAST = Focused Assessment with Sonography for Trauma

Disclaimer: This infographic is not a validated clinical decision aid. This information is provided without any representations, conditions, or warranties that it is accurate or up to date. BMJ and its licensors assume no responsibility for any aspect of treatment administered with the aid of this information. Any reliance placed on this information is strictly at the user's own risk. For the full disclaimer wording see BMJ's terms and conditions: <http://www.bmj.com/company/legal-information/>

Table 1 | A Typical NHS trauma team in a major trauma centre in England

Team member	Typical UK grade	Role in the trauma team
Trauma team leader (TTL)	Consultant, usually from emergency medicine	Brief the team on the emergency and ensure each team member is aware of their role as listed below. Coordinate the primary survey and maintain situational awareness
Primary survey doctor	Emergency medicine specialty trainee	Perform the primary survey
Anaesthetist	Specialty trainee 5-7, Post final FRCA	Responsible for airway management and advanced vascular access
Operator department practitioner	NHS Agenda for Change Band 5-6	Assist the anaesthetist
Scribe (trauma nurse coordinator)	NHS Agenda for Change Band 7	Maintain a record of the events in the trauma bay
Emergency medicine nurse 1	NHS Agenda for Change Band 5	Support the trauma team with tasks such as positioning the patient, preparing an IV drip, administering medication, etc
Emergency medicine nurses 2 and 3	NHS Agenda for Change Band 5	Check blood and blood products and deliver via the rapid infuser following the instructions of the trauma team leader
Runner (health care assistant)	NHS Agenda for Change Band 2	Collect blood and blood products from the transfusion laboratory and other equipment as necessary
Orthopaedic surgeon	Specialty trainee 4-7	Provide orthopaedic advice to the trauma team leader
General surgeon	Specialty trainee 4-7	Provide general surgical advice to the trauma team leader
Radiographer		Undertake chest and pelvic radiographs as required

INFORMATION RESOURCES FOR PATIENTS

After trauma
<http://www.aftertrauma.org>.
 This website connects and supports survivors of traumatic injury and their families.

British Orthopaedic Association
 Major trauma centres: what they mean for patients and next of kin
http://www.ukemtrauma.com/uploads/3/0/6/6/30664511/mtc-paper_26-06-14.pdf

The trauma team must work in an unfamiliar environment under pressure, and this can lead to mistakes and near misses

On arrival at the hospital, if the patient has a patent airway, a central pulse, and there is no visible active bleeding, the pre-hospital team delivers a “sterile (silent) handover.” The trauma team remains silent during this handover, and a member of the pre-hospital team communicates information about the patient, usually using the AT-MIST acronym (table 2, see bmj.com).⁴ All members should then commence care with a common understanding of the patient’s initial condition.

If the patient has an airway issue, has ongoing visible haemorrhage, or is in cardiac arrest, the trauma

team leader will ask the pre-hospital member to wait while these issues are addressed by the trauma team. Information from the handover will then be delivered subsequently.

If a “code red” is called¹⁰ by the pre-hospital team then blood and blood products are ordered and made available in the emergency department even before the patient’s arrival. This would occur if the patient suffered a traumatic cardiac arrest, had suspected active haemorrhage and a systolic blood pressure <90 mm Hg, visible active haemorrhage, or poor response to initial fluid resuscitation. In many trauma centres, this will be in the form of a “shock pack,” which is typically a box with packed red blood cells and fresh frozen plasma, usually group O rhesus negative for universal donation. At our centre, the first shock pack is four units of universal donor packed red blood cells and four units of fresh frozen plasma. Once the patient’s blood group has been determined, the transfusion laboratory will switch to “type specific blood.”

How is the patient assessed?

The primary survey is the first clinical examination of the patient and follows the mnemonic <C>ABC,¹¹ where <C> stands for control of catastrophic haemorrhage, and ABC assessment of airway, breathing, and circulation. This examination is conducted in a “horizontal fashion,”¹² where components of the <C>ABC paradigm and initial investigations (eg, chest radiography, blood tests) are carried out by several people at the same time. This process is coordinated by the trauma team leader, and quickly provides the team with required clinical information⁹ (figure).

Further, certain checklists for trauma care, such as the WHO checklist, can be adapted locally and used to ensure complete assessment of the patient and delivery of life saving interventions.⁸

What investigations are required?

A chest and pelvic radiograph can be performed at the

Example situations for trauma team activation

 Traumatic event with any of:
 Oxygen saturation <90%
 Systolic arterial pressure <90 mm Hg
 Respiratory rate <9 or >29 bpm GCS <14

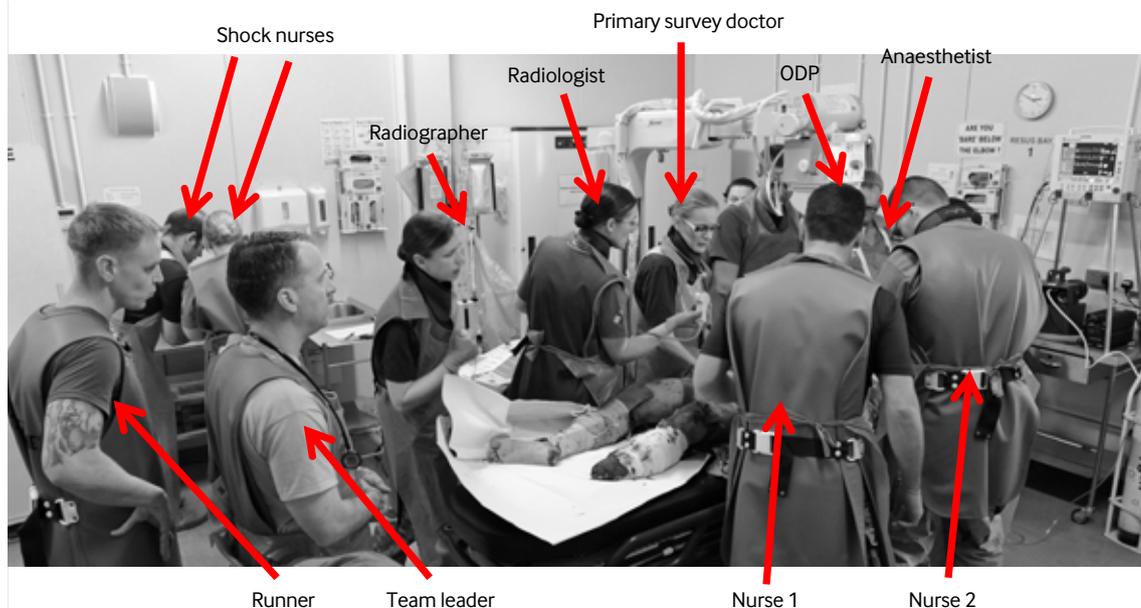
 Penetrating injury to:
 Head Neck Chest Abdomen
 Pelvis All gunshot wounds

 Fractures:
 Skull (open or depressed) Pelvic
 Bone (2+ proximal fractures) Flail chest

 Major burns
 >15% total body surface area
 Lower threshold in child or elderly (>10% total body surface area)
 Combination of burns and trauma

 Traumatic amputation  Blast or crash injury

 Road traffic crash:
 Bull’s eyed windscreen Ejection from vehicle
 High speed crash
 30+ mph or pedestrian v vehicle at 20 mph
 Intrusion into passenger compartment Separation of rider and bike
 Death in the same passenger compartment 20 min+ extrication time



The complex trauma team undertaking the primary survey in a horizontal manner (Picture courtesy of Mark de Rond)

time of the primary survey using portable devices. Blood tests (eg, haemoglobin, venous blood gas, and point of care coagulation) can further assist in decision making. Many major trauma centres now use point of care testing for coagulation such as rotational thromboelastometry (RoTEM Pentapharm, Munich, Germany) to guide whether blood products such as clotting factors, platelets, or fibrinogen are required. Once these results are available, resuscitation is tailored to correct deficient components.¹³ When bleeding is ongoing and massive, frequent RoTEMs and arterial blood gases are performed to guide resuscitation.

Additional investigations, such as a computed tomography scan, might be requested based on the mechanism and severity of injury. A whole body computed tomography scan, sometimes referred to as a “pan scan,” will usually be required in complex trauma¹⁴—for example, in a patient who is extricated from a vehicle in a road traffic incident, to determine the sites of injury. NICE guidelines recommend a computed tomography scan within one hour for all suspected traumatic brain injuries.¹⁵

How is the patient managed?

Management begins with damage control resuscitation to minimise blood loss and maximise tissue perfusion and oxygenation to optimise outcome.^{16,17} The three pillars of management are permissive hypotension, haemostatic resuscitation, and damage control surgery (the latter includes interventional radiology as an alternative). The team leader decides the management and communicates this to the team. This might include time critical interventions to stabilise the patient or even save their life. The infographic indicates a typical timeline of critical decision points during a trauma call.

Care is taken to avoid the triad of acidosis, coagulopathy, and hypothermia.¹⁷⁻²¹ Evidence from a retrospective study in 1088 trauma patients showed that nearly a quarter of patients had a coagulopathy and this was associated with higher mortality.²² Resuscitation with packed red blood cells, fresh frozen plasma, and

platelets is preferred as this provides clotting factors.²³ NICE guidelines recommend against use of crystalloids as resuscitation fluid in hospital¹⁹ as this would dilute clotting factors present in the patient’s circulation.

The risk of re-bleeding associated with normotensive resuscitation needs to be balanced with the metabolic derangement associated with hypotensive resuscitation.²⁴ Until major bleeding has been stopped, resuscitation is aimed at maintaining a radial pulse—ie, a systolic blood pressure of 80–90 mm Hg, if no head injury is suspected. In patients with suspected traumatic brain injury, less restrictive volume resuscitation is advised to maintain cerebral perfusion.¹⁹

Trials have shown reduced mortality in trauma patients who were given tranexamic acid to control bleeding.^{25,26} An intravenous dose of tranexamic acid is recommended within three hours of trauma in patients with active bleeding or suspected internal bleeding.^{19,20}

Hypothermia is associated with worse outcomes. Monitor the patient’s temperature and institute measures to minimise heat loss.¹⁹ Active warming using a device such as the BairHugger might also be considered.

What are the next steps?

Ensure that the patient’s family are kept informed of what is happening. Once the assessment and initial management are completed, the trauma team leader and a senior nurse (usually the scribe) will talk with the patient’s family to explain the situation. This also provides an opportunity to obtain additional information about the patient, such as their medical history.

We have focused on initial management of the trauma patient. Further handover to relevant specialties may be required for definitive treatment. Priority transfer to the operating theatre, interventional radiology, critical care, or the trauma ward may be considered, if a computed tomography scan has been performed elsewhere.

Competing interests: None declared.

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WHAT YOUR PATIENT IS THINKING

Why carers matter



0.5 HOURS

Helen Cowan's husband is quadriplegic and she helps care for him at home. Here, she describes the importance of health professionals recognising the part played by carers

When my husband is admitted to hospital you might assume that I can take a step back from being his carer, but the reverse is true. Although my husband is usually an independent and professionally successful man, when sick he becomes tired, confused, and vulnerable. Because he is bed bound I become his arms and legs, helping him to turn and reposition, wash and dress, and get his food and drink. Crucially, I become his eyes, monitoring his body for signs of pressure damage. I also become his motivator and mood monitor: depression and anxiety are never far away when disability suddenly looms larger than in normal life.

Carers are not just visitors

During one admission, I stayed at my husband's bedside for 48 hours. Much as I would have liked to hand over his care to staff, I knew that this would be difficult because of his specific needs.

WHAT YOU NEED TO KNOW

- Carers are experts in patients' needs
- Welcoming carers and patients on to the ward means thinking about where carers will sleep and when they will be able to eat or take a break
- By treating patients and their carers as a team, everyone benefits

Parents are accepted during a child's admission, so why not the carers of adult patients?



Helping patients to turn, wash, dress, eat, and drink are basic skills, but it can take a while to learn how best to meet particular needs. At home a team of two or three carers and myself have learnt how to position my husband prone with a subluxated right hip; we know where to place the four body pillows to relieve pressure.

I know the triggers, signs, and treatment for autonomic dysreflexia—a spike in blood pressure—it can be triggered by something as simple as a full bladder or bowel distension. Health professionals are generally not taught about this condition, and my husband and I have seen it misdiagnosed.

Carers possess a knowledge that cannot be gleaned in a single handover. And mistakes matter: a tiny pressure sore can have devastating consequences.

See us as a team

The hospital system doesn't always understand and support the relationship between patients and carers. For example, I spent an uncomfortable night in hospital in a chair and another on a mattress (that I had to request) on the floor of a bay with three other male patients besides my husband, and yet empty side rooms could have accommodated my husband and me together. Parents are accepted

during a child's admission, so why not the carers of adult patients? With no bed provided I felt like an inconvenience.

I didn't like to leave my husband in case a ward round happened or he needed my help. Food and drink were scarce and expensive. Could carers purchase food at staff prices? Might the tea trolley include drinks for carers as well as for patients? Could carers be given notice of ward rounds?

What I found particularly stressful was the feeling that I had no right to be in hospital. I worried that staff would be annoyed at my presence. A warmer welcome and understanding from staff would have worked wonders; asking how they could best work with my husband and me would have transformed our stay. Doctors can play a helpful role here. They might start the conversation with the patient and carer, perhaps by asking how both are coping. They could work with the patient and carer to understand how medical problems are dealt with at home. Doctors can help by deciding when best to prescribe drugs to fit in with physical limitation—for example, drips being more easily administered when the patient is not prone—they can also work out ways to help patients and carers get home more quickly to their familiar, adapted environment.



ROSE LLOYD

STATE OF THE ART REVIEW

Increased cardiovascular risk in rheumatoid arthritis: mechanisms and implications

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Series explanation: State of the Art reviews are written with academic or specialist international readers in mind. This summary for non-specialists was created by *The BMJ* with input from the authors

EDUCATION INTO PRACTICE

- Are carers viewed as expert partners in care where you work? Do you communicate with them (with consent)?
- Do you consider how patients with disabilities can best tackle their physical needs while also dealing with their medical needs?
- Is there anything you will consider doing differently as a result of reading this article?

A partner ready to listen and lead

Most of all, I wanted to be seen as an expert partner in care; someone who is prepared to listen and lead. When inpatient teams have worked with me we have achieved a good understanding of the needs of both myself and my husband. After consultation, the medical team expedited discharge, planned a home drip, and called me back to collect antibiotics after my husband had a positive swab result. These things were helpful and made my husband and me feel more in control.

Experience has been our teacher and we have learnt what works. When it comes to caring for patients with disabilities, everyone benefits when carers are seen as partners in care.

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Rheumatoid arthritis is a systemic, autoimmune disease that affects about 0.5-1.0% of the population. Cardiovascular disease accounts for the largest proportion of excess mortality in people with rheumatoid arthritis, and they have a 48% increased risk of cardiovascular events compared with the general population. Several mechanisms beyond traditional cardiovascular risk factors confer this risk, and these are discussed in the online version of this article.

How should cardiovascular disease be prevented and managed?

A multifaceted approach is needed to optimise the management of traditional risk factors and those intrinsic to rheumatoid arthritis, such as increased disease activity. This comprises assessment of cardiovascular disease risk, management of traditional cardiovascular risk factors, and management of rheumatoid arthritis.



Targeting cardiovascular disease (CVD) risk reduction in rheumatoid arthritis (RA). Targeting reduction of CVD in RA requires a multifaceted, team approach. Key areas to target are tobacco use cessation, treating comorbid conditions (diabetes, hypertension, chronic kidney disease), assessing cardiovascular risk, aggressively managing dyslipidaemia, treating RA towards a goal of remission (or at least low disease activity), avoiding/limiting use of non-steroidal anti-inflammatory drugs (NSAIDs) and corticosteroids, and potentially selecting disease-modifying antirheumatic drugs (DMARDs) with more favourable CVD risk profiles. HCQ=hydroxychloroquine; MTX=methotrexate; TNFi=tumour necrosis factor inhibitor



Assessment of cardiovascular disease risk

Usually, the first step in preventing cardiovascular disease is determining risk. However, traditional cardiovascular risk models including the Systematic Coronary Risk Evaluation (SCORE) and Framingham Risk Score (FRS) do not sufficiently stratify patients with rheumatoid arthritis according to risk. New models have tried to tailor cardiovascular risk stratification to people with rheumatoid arthritis but have had limited success. Therefore, the best approach is to integrate cardiovascular risk stratification with a risk model endorsed by national guidelines into regular clinical care.

Management of traditional cardiovascular risk factors

Although people with rheumatoid arthritis have high rates of cardiovascular disease, they have

been found to be less likely than other patients to receive lipid screening and lipid lowering treatment. Statins reduce cardiovascular events in the general population and seem to have similar efficacy in patients with rheumatoid arthritis. They may also improve cardiovascular disease risk in rheumatoid arthritis through mechanisms independent of lipid lowering.

Physical activity is associated with a favourable cardiovascular risk profile in rheumatoid arthritis and should be encouraged. Smoking is a shared risk factor for rheumatoid arthritis and cardiovascular disease, so cessation is critical. Similarly, comorbid conditions adversely affecting cardiovascular risk, including hypertension, diabetes, and chronic kidney disease, should be aggressively treated.

Management of rheumatoid arthritis

Studies have shown that people in remission from rheumatoid arthritis

have similar cardiovascular disease related mortality to the general population, whereas those with low to high disease activity have increased cardiovascular mortality. Similar associations have been reported between lower disease activity and improved high density lipoprotein function and blood pressure.

This suggests that effective treatments for rheumatoid arthritis could mitigate risk of cardiovascular disease through mechanisms beyond the reduction of systemic inflammation. Therefore, aggressively treating rheumatoid arthritis towards remission, targeting traditional and rheumatoid arthritis specific cardiovascular risk factors with drug and non-drug treatments, should be the goal. The figure summarises this approach.

Competing interests: TRM serves as a consultant for Pfizer.

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CASE REVIEW

Unilateral retinopathy in a patient with diabetes and coronary heart disease

A 69 year old man with type 2 diabetes mellitus, obesity, hypertension, and coronary artery disease was referred for diabetic retinopathy screening. He was also undergoing evaluation for transient ischaemic attack after experiencing dizziness and intermittent weakness in the left hand over the past six months. Visual acuities and intra-ocular pressures were normal, and slit lamp examination of the anterior segment of both eyes was unremarkable. Fundusoscopic examination (figs 1, 2) and wide field fluorescein angiography (fig 3) revealed unilateral retinopathy in the left eye. These unilateral findings prompted concern for carotid disease. Doppler carotid ultrasonography and computed tomography angiography found complete occlusion of the left internal carotid artery.

- 1 What are the differential diagnoses for unilateral retinopathy?
- 2 What is the diagnosis?
- 3 How should this patient be managed?

Submitted by Maria Fernanda Abalem, Kim A Eagle, and Rajesh C Rao
 Patient consent obtained.
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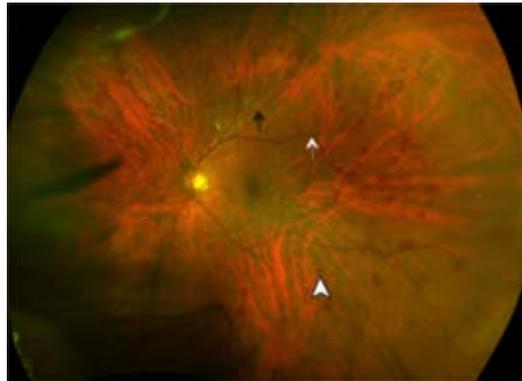


Fig 1 | Ultrawide field colour image of the left eye, showing diffuse intraretinal haemorrhages in the retinal midperiphery (white arrow), arterial narrowing (black arrow), and venous dilation (white arrowhead)

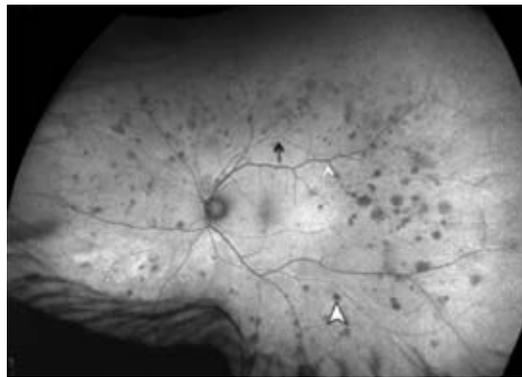


Fig 2 | Autofluorescence image showing diffuse intraretinal haemorrhages in the retinal midperiphery (white arrow), arterial narrowing (black arrow), and venous dilation (white arrowhead)

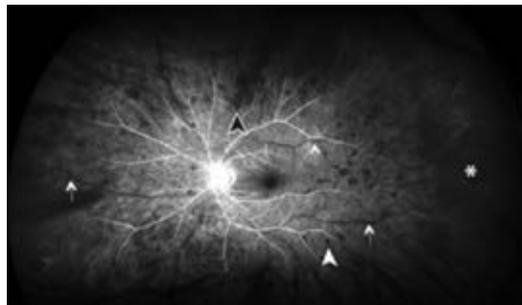


Fig 3 | Wide field fluorescein angiography of the left eye showing delayed and patchy choroidal filling (black arrowhead), delayed retinal arteriovenous filling (white arrows), peripheral areas of retinal capillary non-perfusion (asterisk), and blocked fluorescence from intraretinal haemorrhages (white arrowhead)

CASE REVIEW Unilateral retinopathy in a patient with diabetes and coronary heart disease

- 1 Conditions related to hyperviscosity, asymmetric diabetic retinopathy, retinal vein occlusions, and ocular ischaemic syndrome. The latter three present with retinal haemorrhages, dilated veins, arterial narrowing, and neovascularisation. In diabetic retinopathy and retinal vein occlusion, veins are tortuous and occlusions are typically in the posterior pole. In ocular ischaemic syndrome haemorrhages occur in the retinal midperiphery.
- 2 Unilateral retinopathy with ipsilateral carotid occlusive disease suggests a diagnosis of ocular ischaemic syndrome. Presentation includes visual impairment, prolonged recovery of vision after light exposure, scintillating scotomata, and amaurosis fugax. Visual acuity ranges from 20/20 to 20/50, although some patients present with vision of counting fingers or worse. Intraocular pressures do not usually increase. Eighty per cent of cases are unilateral.
- 3 Refer urgently to a multidisciplinary team (vascular surgeon, cardiologist, neurologist, and primary care physician) to evaluate and treat the carotid arterial disease, along with systemic comorbidities. Prompt carotid artery endarterectomy, stenting, or bypass surgery reduces the risk of myocardial infarction. Consider retinal laser photocoagulation, anti-vascular endothelial growth factor injection, glaucoma filtering surgery, and/or topical medications.

answers



0.5 HOURS

You can record CPD points for reading any article. We suggest half an hour to read and reflect on each.



Articles with a "learning module" logo have a linked BMJ Learning module at <http://learning.bmj.com>.

An ulcerated eyelid plaque with nodular lymphangitis

A 22 year old woman presented with a three month history of a tender ulcerated right lower eyelid plaque. This was associated with development of subcutaneous nodules on the right temple and cheek, consistent with nodular lymphangitis. She had sustained a cat scratch to her eyelid several months earlier.

Cutaneous biopsies from the plaque with fungal culture confirmed sporotrichosis. The dimorphic fungus *Sporothrix schenckii* is an environmental saprophyte with a worldwide distribution. Traumatic inoculation is the most common mode of transmission, and spread from infected cats has been reported. Cases of sporotrichosis

involving ocular adnexa are more common in younger patients, particularly children, who are thought to have greater exposure owing to contact with cats and playing in crop fields.

For lymphocutaneous or cutaneous disease, oral itraconazole is first line treatment, and should be continued for two to four weeks after all lesions have resolved. After five months of treatment the lesions in this patient were largely resolved.

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Patient consent obtained.

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Cancer and calcium channel blockers

There has been some anxiety that calcium channel blockers might encourage growth of malignant cells by reducing intracellular calcium concentrations and inhibiting apoptotic gene expression. However, the findings of a record linkage study that tracked more than 20 000 breast cancer patients are reassuring. After adjustment for demographics, comorbidities, and the use of other sorts of medication, mortality from breast cancer was no higher in women who had taken calcium channel blockers than in women who had never used them (*Epidemiology*).



Fit or faint?

It can be hard to decide whether a patient who presents after a transient episode of loss of consciousness has had a fit or a faint. Although myoclonic jerks are frequently seen in vasovagal syncope, they are often misinterpreted as a sign of epilepsy. Data from a case series of video electroencephalogram recordings among people undergoing tilt-table testing allowed the investigators to formulate a 10/20 rule. Fewer than 10 jerks means syncope,

more than 20 means epilepsy. Other useful discriminating features are loss of muscle tone, which is a strong indicator of syncope, and rhythmicity of jerking, which favours epilepsy (*Neuro*).

The sound of seizures

On the subject of seizures and electroencephalograms, a group of neurologists from Stanford had the bright idea of converting electroencephalogram data into sound, by arranging for the electrophysiological signal to modulate a background voice tone. During a seizure, the epileptic spikes turn into loud speech-like sounds with a strong rhythmic character, which are easily distinguished from the quieter, slower, smoother tones of normal brain activity (*Epilepsia*). Medical students and nurses without any training in electroencephalography could detect seizures in a sonified electroencephalogram very nearly as well as experts examining the traces visually.

Dietary fibre

Observational studies suggested that diets rich in insoluble fibre help to prevent type 2 diabetes. But the results of a randomised trial in 180 adults with impaired glucose tolerance make this idea look shaky (*Diabetologia*). A fibre supplement (15 g of insoluble fibre daily for two years) turned out to be

no better than placebo in preventing deterioration in glucose metabolism or progression to diabetes. Neither were there differences in levels of fasting glucose, adipokines, or inflammatory markers between the groups.

Long toenails

Nails can sometimes be a source of useful information. Think of splinter haemorrhages, koilonychia, psoriatic pitting or Mees' lines. A case report of enormously long toenails in an elderly man adds another example (*JAMA Intern Med*). Toenails grow at a rate of only a couple of millimetres per month, therefore long toenails mean that they haven't been cut for quite a while. Possible reasons include declining physical function, depression, cognitive impairment, and lack of support from care givers. Toenails in older people might be considered an indicator of how things have been going over the previous few months.

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