education

FROM THE JOURNALS Edited highlights of weekly research reviews on https://bit.ly/2PLtil8

This week we introduce one of our three new columnists who will be writing our weekly research reviews. Alex Nowbar is a clinical research fellow at Imperial College London

Reducing harm from cigarettes—a serious strategy

This expert psychology team is thinking big when it comes to reducing harm from cigarette smoking. It conducted a large double blind randomised controlled trial for 20 weeks comparing immediate nicotine reduction with gradual reduction and no reduction as the control. The primary outcome was biomarkers of smoke toxicant exposure. When there is so much evidence for people to simply stop smoking as soon as possible, you may wonder why anyone would conduct such a trial. But this research is targeted beyond individuals who smoke. It is about changing the content of all cigarettes being sold to make them less addictive. They found lower toxicant exposure in the immediate reduction group compared with the gradual group, and no differences between the gradual and control group. The other benefits of immediate reduction included reduced dependence and more cigarette-free days. The downsides of immediate reduction were also fairly predictable—more withdrawal symptoms, more use of non-study cigarettes, and higher drop out rates.

JAMA doi:10.1001/jama.2018.11473

Removing Quality and Outcomes Framework incentives—the quashed quality

Minchin and colleagues wanted to know the effect of removing the NHS's favourite outcome-driven financial incentive. Their study showed an immediate decline in performance on quality measures. If I were an optimist I'd say this doesn't mean patient care suffered, because maybe it was only the incentive to document that was removed. But I am not an optimist and financial incentives are powerful things. Just remember that with great power comes great responsibility.

N Engl J Med doi:10.1056/NEJMsa1801495

Capping influenza—a viral victory

Flu season is almost upon us. Or should I call it "reluctant oseltamivir prescribing season." Thankfully, there are some promising data on a new antiviral, baloxavir, which acts on a different part of the virus to oseltamivir. Hayden and colleagues report two trials, one phase 2 and one phase 3, called CAPSTONE-1. In CAPSTONE-1, a double blinded placebo-controlled trial of more than a thousand healthy sounding patients, the time to alleviation of symptoms was substantially shorter with baloxavir. In the baloxavir group, 20.7% of patients experienced an adverse event. This figure was 24.6% and 24.8% in the placebo and oseltamivir groups, respectively.

N Engl J Med doi:10.1056/NEJMoa1716197

Computed tomography coronary angiography and cardiovascular events

Tests of tests can be pretty dull. Sensitivity and specificity competitions aren't much fun. The SCOT-HEART investigators took an exotic approach with computed tomography coronary angiography for stable angina. In an open label randomised controlled trial, they compared addition of computed tomography coronary angiography to the patient care pathway with standard care. The primary endpoint was death from coronary heart disease or non-fatal myocardial infarction at five years. Reduction in these events is a bold aim for a test (and was not their originally declared aim, which was more about diagnosis), but apparently it succeeded, with a hazard ratio of 0.59. I (and NICE) already thought computed tomography coronary angiography was a useful test, but I never expected it to directly improve cardiovascular outcomes. How can an imaging test bring that much cardiovascular benefit? One possible explanation is that the computed tomography group got more preventive drugs like aspirin and statins. Another explanation is that unblinded event measurement biased the results in favour of computed tomography.

N Engl J Med doi:10.1056/NEJMoa1805971

Diagnosis and management of venous leg ulcers

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CPD READING
0.5 HOURS

LEARNING MODULE
See http://learning.bmj.com for linked learning module

Venous leg ulcers are the most common type of leg ulcer, with a lifetime risk of developing them of 1%.[1-3] This clinical update, aimed at non-specialists, provides information on the diagnosis and management of venous leg ulcers.

What is the pathophysiology of venous leg ulcers?

Venous leg ulcers are the most severe manifestations of chronic venous disease, a condition caused by venous hypertension when valvular incompetence, venous outflow obstruction, or calf muscle pump dysfunction leads to impaired venous return.[9-13] Soft tissue damage, poor healing, and eventually necrosis occur due to chronic inflammatory processes initiated by venous hypertension.

How do patients with venous leg ulcers present?

Symptoms of chronic venous disease—including aching, heaviness, varicosities, itching, oedema, and eczema and lipodermatosclerosis from haemosiderin deposition—often develop before venous leg ulcers appear.[10] Symptoms are typically worse at the end of the day and are relieved by leg elevation. Patients with venous leg ulcers present with single or multiple painful wounds of variable size in the gaiter area (fig 1). There may be a history of trauma, and patients may have left them untreated for some time. Patients can present with surrounding cellulitis, worsening pain, and increased exudate, pyrexia, malodour and increasing size.

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

Ann O'Mahoney, a patient with recurrent venous leg ulcers, contributed to this article and provided details of how ulcers affect her life and how she manages them with the help of her doctors and nurses in the community.

WHAT YOU NEED TO KNOW

- Venous leg ulcers are the most severe manifestations of chronic venous disease
- Compression bandaging promotes healing and reduces recurrence by improving venous and lymphatic return, microcirculation and inflammation
- Offer early referral to vascular specialists for ulcers that have not healed within two weeks of treatment, or that recur
- Early endovenous ablation of superficial venous reflux promotes healing
- Compression hosiery, good skin care, and surgery for superficial venous reflux can help to reduce recurrence

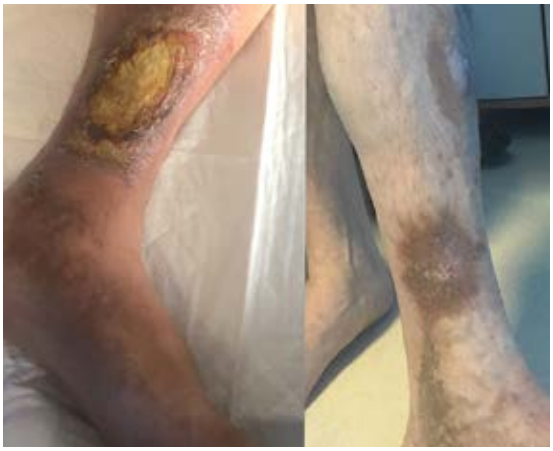


Fig 1 | Typical appearance of active venous leg ulcers (left) and healed ulcers (right). Note presence of features of chronic venous disease, including venous eczema and dilated veins

How to diagnose venous leg ulcers

History and examination

Identify the presence of chronic venous disease, assess risk factors (box 1), and exclude differentials including arterial, diabetic, neuropathic, pressure, vasculitic, and traumatic ulcers and, less commonly, malignancy (fig 2). Ulcers of mixed aetiology are also common; mixed arterial-venous ulcers affect up to 26% of patients with leg ulcers (box 2).[20 26]

Look for obvious varicosities and palpate the pulses. Limited mobility might be contributing to calf muscle pump dysfunction. Varicosities in the abdomen and pelvis may indicate obstruction of central venous outflow.

Box 1 | Risk factors for venous leg ulcers[3-19]

- Increasing age
- Female
- Lipodermatosclerosis
- Previous ulcer
- Family history of chronic venous disease or ulcers
- High body mass index
- History of venous thromboembolism
- Physical inactivity
- Increasing number of pregnancies
- Severe leg injury or trauma

Measure the ankle-brachial pressure index (ABPI) to establish whether peripheral artery disease is contributing to the ulcer formation and to determine whether compression therapy will be suitable.

If feasible, record venous leg ulcers using simple drawings, squared tracing paper, manual planimetry, or photography of the number, distribution, size, depth, and appearance which may help monitor progress.

Use these initial findings to guide referral (fig 3), and repeat this assessment for evidence of healing while awaiting referral (box 3).[1-27]

Investigations

Exclude anaemia, polycythaemia, systemic infection, and diabetes with a full blood count, urea and electrolytes, lipid profile, fasting glucose, and glycated haemoglobin (HbA_{1c}). Consider thrombophilia and vasculitic screening in young patients.

Arrange duplex ultrasonography to assess for treatable superficial and deep venous incompetence, and central venous outflow obstruction.

Culture and sensitivity of wound swab or biopsy are indicated only if patients have cellulitis or infected venous leg ulcers.

Consider skin biopsy to rule out malignancy and vasculitis in patients with longstanding or atypical ulcers, and in patients who fail to heal with treatment.

Box 2 | Managing mixed arterial-venous ulcers

Diagnosis

- Patient history is suggestive of peripheral arterial disease
- Features of chronic venous disease are present
- Peripheral arterial pulses are absent, ankle-brachial pressure index (ABPI) ‹0.8 or ›1.2
- Duplex ultrasonography confirms peripheral arterial occlusive disease and venous incompetence or obstruction

Management[21-25]

- Start best medical therapy for peripheral arterial disease (such as cardiovascular risk factors modifications, antiplatelet, statin and supervised exercise programme)
- Lifestyle modifications and wound management
- Refer early to vascular surgeons for consideration of supervised, reduced pressure
- Compression (such as 17-25 mm Hg) if ABPI is 0.6-0.8; arterial revascularisation; and interventions for venous incompetence or outflow obstruction. Avoid compression if ABPI ‹0.6

Box 3 | When to make early specialist referrals

Vascular surgeon or specialist

- Venous leg ulcers that have not healed within two weeks of adequate active treatment
- Recurrent venous leg ulcers
- Presence of peripheral arterial disease (such as ankle-brachial pressure index (ABPI) ‹0.8 or ›1.2)
- Patients for whom compression is contraindicated or poorly tolerated

Dermatologist, rheumatologist, or diabetologist

- Atypical location (outside the gaiter area) and appearance of ulcers
- High suspicion of other causes or presence of comorbidities that may contribute to ulcers such as diabetes, rheumatoid arthritis, and vasculitis[27]

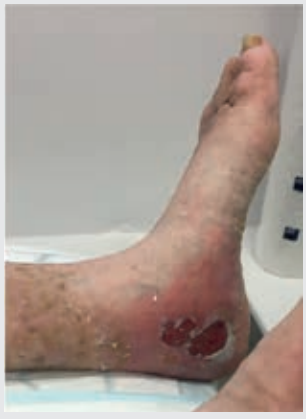
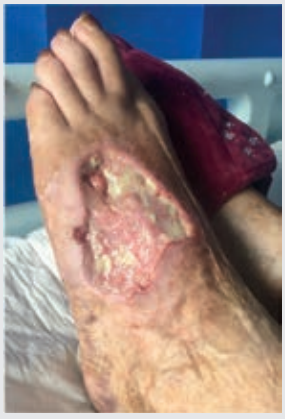
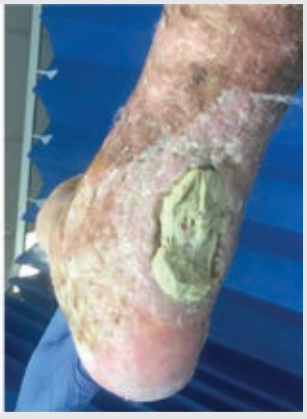
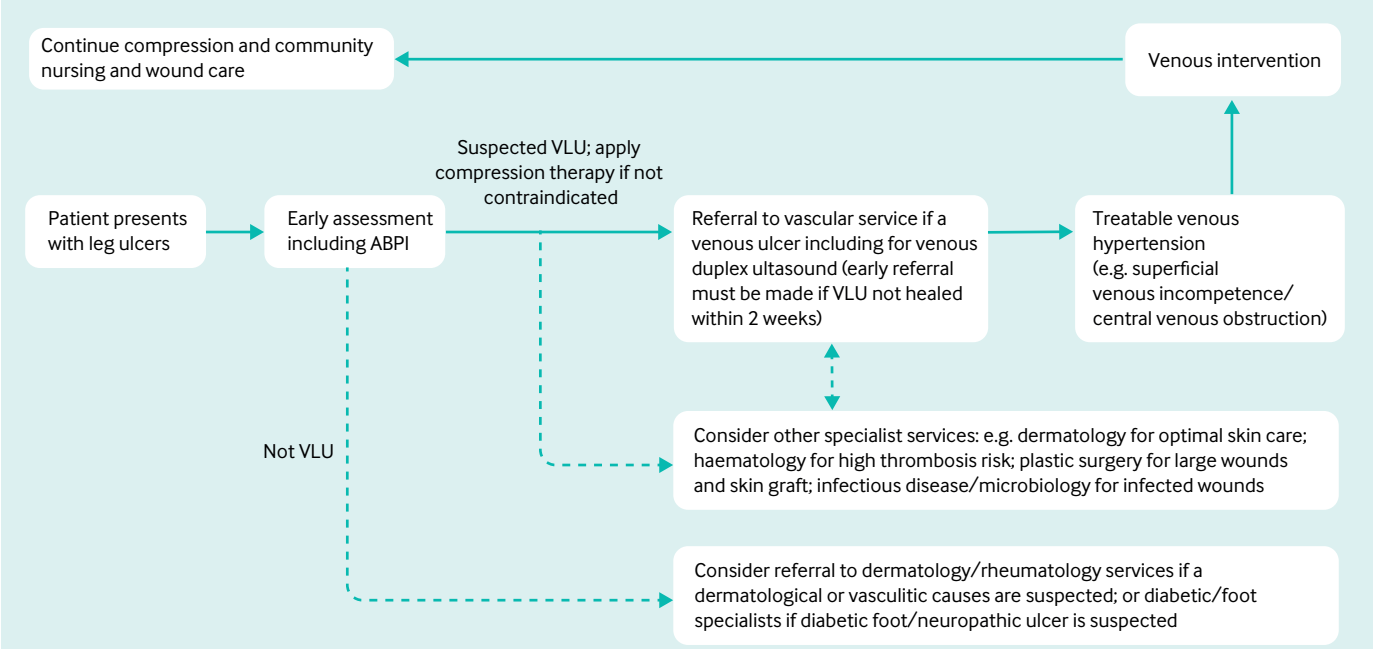
	VENOUS	ARTERIAL	NEUROPATHIC
Example			
Pain	Painful	Painful	Not painful
Site	Medial gaiter region	Toes, pressure points	Pressure areas (sole, heel and bony prominences
Base	Red base with some granulation, exudative	Cyanotic, pale, no granulation and with necrotic tissue	Red, with necrotic or doughy tissue
Ulcer edges	Can be irregular or irregular, slope edges with sign of slow healing	Irregular margin, punched out with no sign of healing	Punched out
Depth	Shallow	Deep	Deep
Surrounding tissue	Oedematous, indurated, dilated veins, venous skin changes, and warm	Dry, cold and shiny skin, collapsed veins, prolonged capillary refill time and absent pulses	Foot deformities, warm and dry, shiny skin, and decreased sensation

Fig 2 | Characteristics of leg ulcers of different aetiologies—venous, arterial, and neuropathic (diabetic and pressure)



Full arrow: highly recommended by major guidelines. Dashed arrow: to be considered depending on clinical findings. ABPI: ankle brachial pressure index. VLU: venous leg ulcer

Fig 3 | Suggested referral pathway for patients presenting with leg ulcer (based on *Management of Patients with Leg Ulcers*[5] with modifications)

How to treat venous leg ulcers

Counselling and lifestyle

Encourage activities that promote good skin care and hygiene, reduction of leg oedema, good nutrition, obesity reduction, and improvement in general health and wellbeing.[28-31] Exercise reverses the effects of venous hypertension but does not promote ulcer healing per se.[28-32]

Sensitively address concerns about appearance, heavy exudate, malodour, physical activity and the risk of damage, healing, and limb amputation.[28 33]

Compression

Guidelines based on evidence from several randomised controlled trials recommend compression therapy as the mainstay of treatment to promote venous and lymphatic return, improve microcirculation, reduce inflammation, and promote healing.[9-37]

Begin compression therapy as soon as possible, provided that there are no contraindications (table).

Between 30% and 75% of venous leg ulcers will heal after six months of compression therapy.[9-11] High quality evidence from randomised controlled trials suggests that multicomponent compression bandages (fig 4) provide a sustained sub-layer pressure of 35-40 mm Hg that will heal most venous leg ulcers.[1-38]

When a venous leg ulcer is too painful to start compression therapy, optimise analgesia, treat any underlying infection, and encourage regular leg elevation to reduce swelling and inflammation before gradually increasing compression pressure. Consider higher compression pressure for resistant venous leg ulcers or swelling. In these cases, also consider non-venous aetiology, infection, and poor patient compliance.

There is low to moderate quality evidence that high compression stockings, intermittent pneumatic compression, and adaptive compression bandages (such as wrap and Velcro system) might also be effective in treating venous leg ulcers.[29-40]

Avoid all forms of compression if ABPI is suggestive of peripheral artery disease (that is, ABPI <0.6).

Encourage compliance by offering options that suit patients' preferences.[41 42]

Dressings

Maintain a balanced moist microenvironment to promote healing without macerating the skin. Low adherence dressings are generally recommended.[27]

Negative pressure therapy has also been used.[43]

The frequency of wound cleansing, and dressing and bandage changes depends on exudate volume and stage of ulcer healing.[41] Dressings with iodine, silver, charcoal, sugar, essential oils, or honey may prevent or treat local wound infection and reduce malodour.[27-45]

There is no evidence to support regular application of topical antimicrobials or antiseptics for the eradication of bacterial colonisation.[44]

Emollients and gentle skin cleansing are crucial in maintaining surrounding skin health.[27]

Debridement and skin grafting

Medical debridement with dressings including hydrocolloids, hydrogels, and honey is effective at cleaning ulcers.[27] Also consider larval therapy for sloughy tissue debridement.[27]

Fig 4 | Application of multicomponent compression bandages to a patient with venous leg ulcers. (A) Measurement of ankle brachial pressure index (ABPI) to ensure it is >0.8 (ulcers were covered and protected before applying the pressure cuff). (B) Application of multicomponent compression bandages by a trained nurse specialist (non-adherent dressings were applied before the bandages). (C) Final appearance of the compression bandages before applying a stockinette to prevent rolling of the bandages

Contraindications to compression therapy for venous leg ulcers and their management strategies

Contraindications	Management strategies
Peripheral arterial disease	• Early referral to vascular surgeons • Revascularisation of the arterial system as much as possible • Reduced compression (if ABPI=0.6-0.8) • Avoid compression if ABPI <0.6
Congestive cardiac failure	• Cardiology consult • Reduced or no compression
Allergic reaction to compression material	• Use alternative compression material
Poor skin quality, pressure areas or neuropathy	• Often overcome with appropriate protective emollient, dressings, and paddings

ABPI= ankle-brachial pressure index.

A PATIENT'S PERSPECTIVE

My venous ulcers have been coming and going since 1998. When they become infected I need regular dressing changes and antibiotics. The dressings are restrictive and can make it difficult to move around, but I keep mobile and, when I can, visit the practice nurse who gets advice from the local tissue viability nurse. The pain can make moving difficult. The skin can get awfully dry, but emollients help. I am fortunate that district nurses dress my ulcers at home when I can't travel.

Although the evidence is limited, we recommend surgical debridement of thick slough and necrotic tissues, and drainage of all trapped collections.

Skin grafting accelerates the healing of large ulcers that are already healing, have good vascularity, have been compressed, and that are infection free.[29 47]

Drugs

Manage pain according to the World Health Organization analgesic ladder.[11] Evidence from a meta-analysis suggests that routine use of systemic antimicrobials is not beneficial for venous leg ulcers when wound infection is not present.[44] Clinical trials have shown that the efficacy of pentoxifylline, flavonoids, aspirin, mesoglycan, sulodexide, and prostaglandins as adjuncts to aid healing is variable.[29-49]

Surgery for venous incompetence

Incompetent superficial veins can be treated effectively with obliteration using endovenous techniques, open surgery, or a combination of both. Endovenous techniques—including endovenous thermal ablation, non-thermal ablation, and foam sclerotherapy—are less invasive and have been shown to be as effective as open surgery.[9-50]

Early, non-randomised trials reported improved venous leg ulcer healing when surgical intervention (endovenous or open surgery) was performed in conjunction with compression; however, a large, multicentre randomised controlled trial (ESCHAR) failed to confirm this.[51 52]

Recent evidence supports the use of early endovenous ablation of superficial venous reflux.[53]

There is also low quality evidence to support the treatment of incompetent perforator veins and stenting to treat venous outflow obstruction.[54-57]

Other treatment modalities

Randomised and non-randomised studies of variable quality have so far produced conflicting results when testing hyperbaric oxygen, stem cells, growth factors, skin equivalent, therapeutic ultrasound, and neurostimulation.[29 58]

How to prevent recurrence

Recurrence within 12 months occurs in 26-69% of patients.[59] Guidelines advocate compression therapy combined with interventions for superficial venous incompetence to reduce the risk of recurrence.[1-62]

Encourage the highest level of compression that is comfortable, preferably 25-35 mm Hg at ankle level.[35-63]

Encourage patients to carry out a daily skin care routine,[1-41] and offer vascular service referral for assessment and possible interventions to reduce the risk of recurrence.[56 57]

Competing interests: None declared.

Cite this as: *BMJ* 2018;362:k3115

Find the full version with references at http://dx.doi.org/10.1136/bmj.k3115

GUIDELINES

Pancreatitis: summary of NICE guidance

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Further information about the guidance, a list of members of the guideline development group, and the supporting evidence statements are in the full version on bmj.com.

CPD READING
0.5 HOURS

Pancreatitis can severely reduce quality of life and may reduce life expectancy.[1 2] Acute and chronic pancreatitis are characterised by inflammation of the pancreas. Acute pancreatitis can recur if the cause is not identified and addressed. Over time, such patients may develop chronic pancreatitis. In its early stages this is characterised by acute exacerbations but also chronic pain, along with exocrine insufficiency, associated with fat malabsorption and malnutrition. Diabetes is also common. As chronic pancreatitis progresses, patients tend to experience fewer exacerbations but more chronic pain.

Specialists almost always manage acute pancreatitis because it is an acute abdominal emergency requiring hospital admission. However, non-specialists, including those in primary care, may be the first clinicians to identify chronic pancreatitis. Non-specialists may also manage and monitor symptoms including pain, endocrine and exocrine insufficiency, and make appropriate referrals.

Interventions used for management of acute pancreatitis show wide variation.[3] The new national guideline from the National Institute for Health and Care Excellence (NICE) on pancreatitis aims to reduce this variation with the hope of improving outcomes.[4] This is a summary of the NICE recommendations: it covers when to consider a diagnosis of chronic pancreatitis, the needs of people with acute and chronic pancreatitis, how to administer nutritional support, when to refer, and how to manage type 3c diabetes. There are other recommendations not covered in this summary.

WHAT YOU NEED TO KNOW

- Do not make people with acute pancreatitis "nil by mouth" and do not withhold food without clear reason
- Consider chronic pancreatitis as a potential diagnosis in patients with recurrent or chronic abdominal pain
- The long term use of opioids for pain management in chronic pancreatitis may cause harm
- Type 3c diabetes is diabetes secondary to pancreatic disease and usually requires management in secondary care with ongoing support in the community
- Offer HbA1c testing at least every six months and bone mineral density assessments every two years to people with chronic pancreatitis

Recommendations

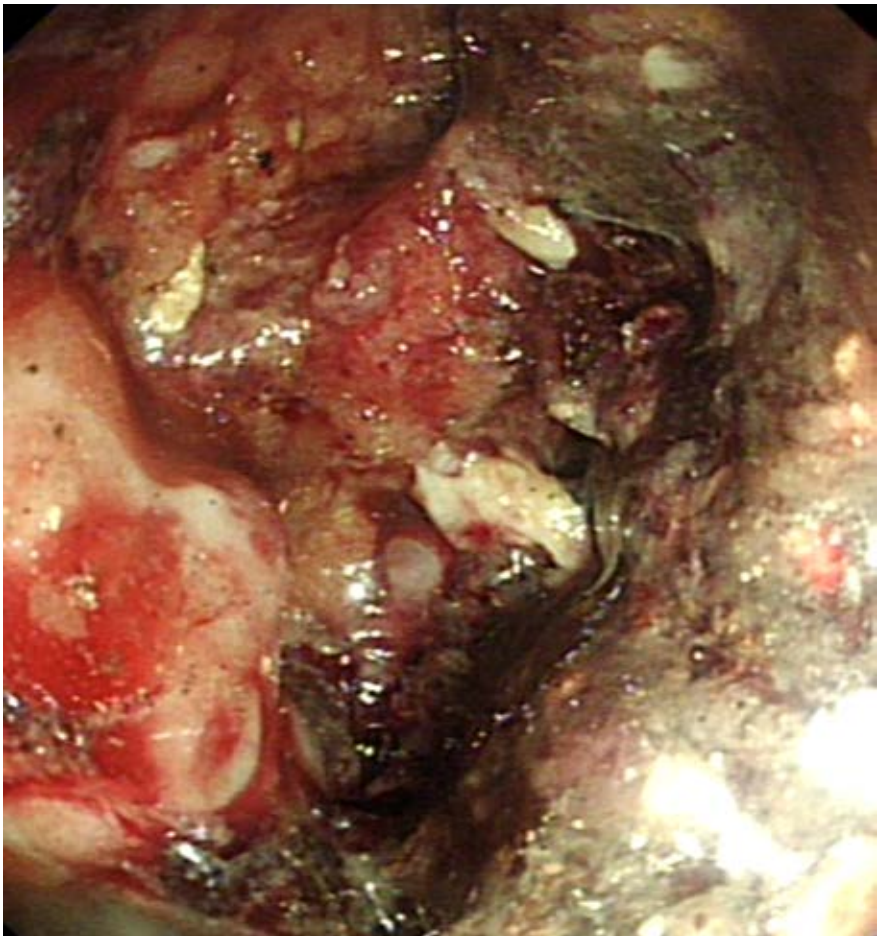
NICE recommendations are based on systematic reviews of best available evidence and explicit consideration of cost effectiveness. When minimal evidence is available, recommendations are based on the guideline committee's experience and opinion of what constitutes good practice. Evidence levels for the recommendations are in the full version of this article on bmj.com.

Sharing information and offering support

Reliable information on pancreatitis is not consistent or widely available in the UK. Patient representatives particularly found this to be the case in relation to nutrition and type 3c diabetes. For example, people are often advised to adopt a fat-free diet, which is not necessary.

Although not reviewed within the NICE guideline, some online resources aimed at patients are available.[5 6]

- Give people with pancreatitis, and their family members or carers (as appropriate), written and verbal information on the following (where relevant) as soon as possible after diagnosis:
  - Pancreatitis and any proposed investigations and procedures using diagrams
  - Hereditary pancreatitis and pancreatitis in children, including specific information on genetic counselling, genetic testing, risk to other family members, and advice on the impact of their pancreatitis on life insurance and travel
  - The long term effects of pancreatitis, including effects on the person's quality of life
  - The harm caused to the pancreas by smoking or alcohol.
- Advise people with pancreatitis where they might find reliable, high quality information and support after consultations, from sources such as national and local support groups, regional pancreatitis networks, and information services.
- Provide other important information about management of pancreatitis such as:
  - Nutrition advice, including how to take enzyme replacement therapy if needed (see box)
  - Whom to contact for advice, including during episodes of acute illness
  - Psychological care if needed (see NICE guideline on depression in adults[8])
  - The role of specialist centres and primary care services for people with acute, chronic, or hereditary pancreatitis
  - Welfare benefits, education, and employment support, and disability services.



Endoscopic view inside pancreatic necrosis cavity after endoscope has been passed through a metal stent. On the right is infected pancreatic necrosis. On the left the necrosis has been cleared, yielding healthy granulation tissue . Endoscopic drainage is used for management of infected pancreatic necrosis by inserting a self expanding metal stent to drain infected necrosis

Box 1 | Taking enzyme replacement therapy*

When

- During every meal, snack, or milk-based drink
- With the first mouthful or immediately before eating so that the enzymes will be mixed with the food in the stomach

How

- Take the capsules whole with a cold drink (or open the capsule and sprinkle the granules on soft acidic food if unable to swallow whole)
- Do not crush, chew, or hold in the mouth
- For larger meals or those that take longer than about 30 minutes, take half the dose at the start of the meal and half in the middle

*Advice from The Clatterbridge Cancer Centre. www.clatterbridgecc.nhs.uk/application/files/3914/3504/9642/PancreaticEnzymeReplacementTherapyPERTGuidanceV1.pdf

Acute pancreatitis

Information for patients and carers

- Explain to people with severe acute pancreatitis, and their family members and carers (as appropriate), that
  - A hospital stay lasting several months is common, including time in critical care
  - For people who achieve full recovery, time to recover may take at least three times as long as their hospital stay
  - Local complications of acute pancreatitis may resolve spontaneously or may take weeks to progress before it is clear that intervention is needed
  - It may be safer to delay intervention (for example, to allow a fluid collection to mature)
  - People who have started to recover may have a relapse
  - Although children rarely die from acute pancreatitis, approximately 15-20% of adults with severe acute pancreatitis die in hospital.

How to administer nutrition support

Most people with severe acute pancreatitis require nutritional support. There is no benefit of delayed nutrition in severe or moderately severe acute pancreatitis. The safest first line route of administration is enteral nutrition.

- Ensure that people with acute pancreatitis are not made "nil by mouth" and do not have food withheld unless there is a clear reason for this (such as vomiting).
- Offer enteral nutrition to anyone with severe or moderately severe acute pancreatitis. Start within 72 hours of presentation and aim to meet their nutritional requirements as soon as possible.
- Offer anyone with severe or moderately severe acute pancreatitis parenteral nutrition only if enteral nutrition has failed or is contraindicated.

GUIDELINES INTO PRACTICE

- Are you aware of the indications to refer patients with chronic pancreatitis to a pancreatic specialist? What are the local pathways to make a referral?
- How might you ensure patients with chronic pancreatitis are offered HbA1c testing every 6 months and bone mineral density assessments every 2 years?
- Are you aware of guidance on management of type 3c diabetes or where you might find resources for patients about this condition?

Chronic pancreatitis

When to suspect it

Patient groups say that people often have multiple consultations before a diagnosis of chronic pancreatitis is considered or confirmed.

- Think about chronic pancreatitis as a possible diagnosis for people presenting with chronic or recurrent episodes of upper abdominal pain and refer accordingly.

Diagnosis

Diagnosis of chronic pancreatitis should be prompted by a history of intermittent upper abdominal pain, loss of weight, and diarrhoea suggesting deficiency in exocrine function. Patients may show signs of malnutrition with low body mass and may develop diabetes due to loss of endocrine function. The diagnosis can usually be confirmed with cross-sectional imaging (computed tomography or magnetic resonance imaging). Investigations to exclude other diagnoses also include ultrasound or upper gastrointestinal endoscopy.

How to administer nutrition support

Without appropriate dietetic input, people with chronic pancreatitis can experience pain when eating, weight loss because of lack of pancreatic enzymes, and the development of diabetes. However, some people with chronic pancreatitis are not seen by a dietitian, and there are few dietitians specialising in pancreatitis.

- Be aware that all people with chronic pancreatitis are at high risk of malabsorption, malnutrition, and a deterioration in their quality of life.
- Consider assessment by a dietitian for anyone diagnosed with chronic pancreatitis.
- For guidance on nutrition support for people with chronic alcohol related pancreatitis, see alcohol related pancreatitis in the NICE guideline on alcohol-use disorders.[10]

Management of pain

Abdominal pain is the predominant symptom for patients. A pragmatic approach is to follow the World Health Organization pain ladder; opioids need not be first line treatment just because the pain is pancreatic. Opioids are commonly used in treating chronic pancreatitis and acute exacerbations of chronic pancreatitis, but there is emerging evidence that their long term use may cause harm. The Guideline Committee was, however, unable to make a recommendation regarding pain control and opioid use for pancreatitis because there was insufficient evidence.

Type 3c diabetes

This is diabetes secondary to pancreatic disease, caused by disruption of the architecture or physiology of the pancreas. It can be confused with type 2 diabetes, but its pathology and course differ (see box 2). There is a lack of evidence on how to manage this type of diabetes. It occurs in up to 80% of people with chronic pancreatitis and can also occur after acute pancreatitis.

Box 2 | Type 3c diabetes (diabetes of the exocrine pancreas)*

Cause

- A process, such as pancreatic inflammation, neoplasia, or surgical resection, that disrupts the pancreas and the body's ability to produce insulin
- Reduced insulin production due to β cell dysfunction after pancreatic inflammation or total β cell loss
- There is insufficient insulin secretion (the abnormality in type 1 diabetes) rather than insulin resistance (which is characteristic of type 2 diabetes).

Incidence

- Affects 9% of hospitalised patients with diabetes

Disease course

- Commonly misdiagnosed as type 2 diabetes
- Twice as likely to have poor glycaemic control as type 2 diabetes
- After acute pancreatitis 21% of people with diabetes are treated with insulin within five years of diagnosis
- With chronic pancreatitis, 46% of those with type 3c diabetes are treated with insulin within five years of diagnosis
- Complications include nerve, eye, and kidney damage if diabetes not appropriately treated

* Based on Woodmansey et al.[12]

Type 3c diabetes usually requires management in secondary care with ongoing support in the community.

- Assess people with type 3c diabetes every six months for potential benefit of insulin therapy.
- For guidance on managing type 3c diabetes, follow existing NICE guidelines
  - On type 2 diabetes for people who do not require insulin[13 14]
  - On type 1 diabetes for people who require insulin.[14-16]

How specialists might involve primary care

Many people with pancreatitis will be managed long term in the community. Information to be shared with primary care and actions to be taken include:

- Detail on how people should take their pancreatic enzyme replacement therapy (including dose escalation as necessary) (see box for details).
- Offer HbA1c testing to people with chronic pancreatitis at least every six months.

  Testing is likely to be organised and monitored by a specialist centre but delivered by non-specialist secondary care centres or general practices.
- Offer people with chronic pancreatitis bone mineral density assessment every two years.

  There is an increased fracture risk and reduced bone density in chronic pancreatitis..

Competing interests: No author has relevant interests to declare. Full statements can be viewed in the NICE guideline (www.nice.org.uk/guidance/ng104).

Cite this as: *BMJ* 2018;362:k3443

Find the full version with references at http://dx.doi.org/10.1136/bmj.k3443

HOW PATIENTS WERE INVOLVED IN THE CREATION OF THIS ARTICLE

Committee members involved in this guideline included people with pancreatitis who contributed to the formulation of the recommendations summarised here.

If you would like to write a Case Review for Endgames, please see our author guidelines at http://bit.ly/29HCBAL and submit online at http://bit.ly/29yyGSx

MINERVA WELCOMES SUBMISSIONS

Minerva pictures are cases which offer an educational message, and are of interest to a general medical audience (See p 334). They should be submitted as "Minerva" via our online editorial office (see bmj.com) and should follow our advice on submitting images. Please provide two or three sentences (no more than 100 words) explaining the picture, and send us the signed consent to publication from the patient. We require written consent from every patient, parent, or next of kin, regardless of whether the patient can be identified or not from the picture. For more information see http://www.bmj.com/about-bmj/resources-authors/article-types

SPOT DIAGNOSIS

Knee pain in an athletic young man

An athletic 22 year old man presented with swelling and locking of the left knee, and underwent plain radiography (fig 1). He had not experienced any recent trauma but had received several football injuries as a child. Two years before this presentation, he underwent plain radiography and magnetic resonance imaging (MRI) for disabling knee pain, and was diagnosed with osteochondritis dissecans (OCD). What abnormality is shown in fig 1?

Submitted by Charlotte Marriott and Christopher George

Patient consent obtained.

Cite this as: *BMJ* 2018;362:k3355

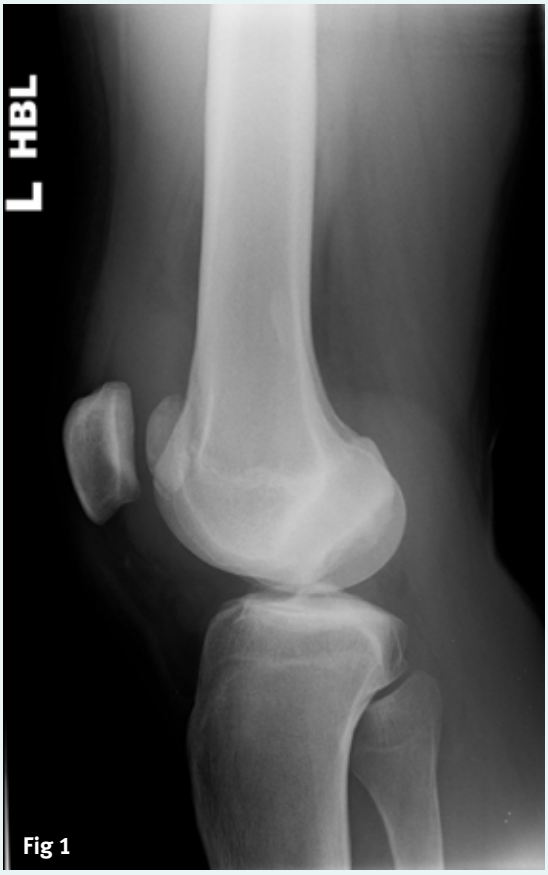


Fig 1

CPD READING

0.5 HOURS

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

LEARNING MODULE

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answer

SPOT DIAGNOSIS

Knee pain in an athletic young man

Displaced osteochondral body (a dislodged fragment of subchondral bone). This is consistent with the patient's history of OCD.

OCD is the separation of a segment of subchondral bone and its articular cartilage from the underlying bone. It commonly occurs at the knee, particularly the medial femoral condyle (69%), but other sites include the elbow, wrist, hip, and ankle. People with OCD typically present with non-specific pain that worsens with activity. Displacement of a previously stable fragment of subchondral bone can occur, causing an increase in severity of symptoms. Other presentations, which may relate to the presence and location of any displaced intra-articular fragments, include bony tenderness, joint effusion, and joint locking.

Plain radiography of a patient with OCD may show an area of radiolucency separating the subchondral fragment from the epiphysis, with surrounding sclerosis. A loose intra-articular fragment may be visible if the defect has dislodged.

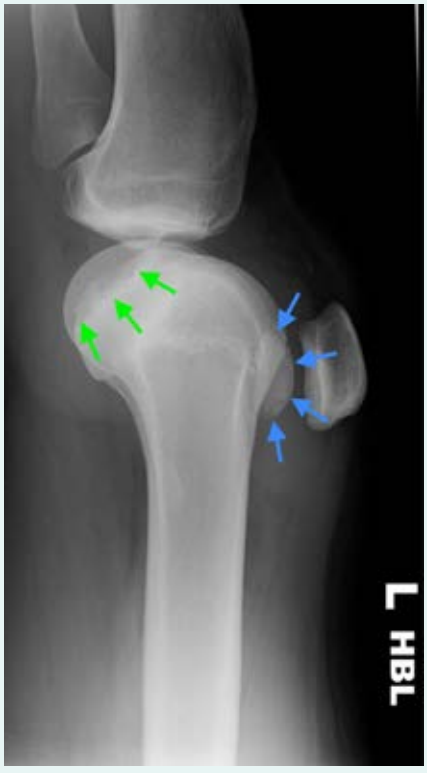
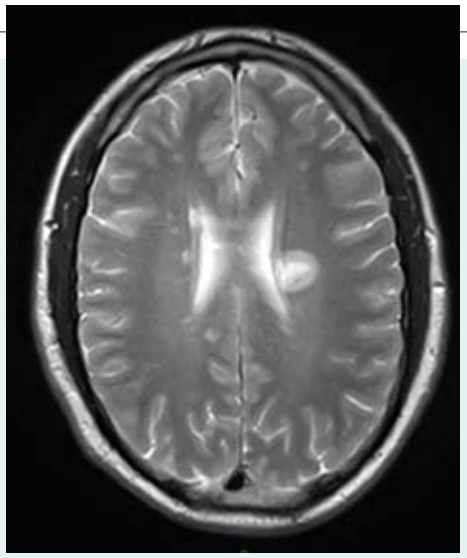


Fig 2 | Plain radiograph showing a lateral view of the left knee. Blue arrows show a loose body at the medial aspect of the patellar pouch with anterior displacement of the patella. Green arrows show a deformity in the articular surface of the posterior aspect of the lateral condyle, from which the loose body originated

An unusual stroke mimic



A 30 year old white man was admitted to the stroke unit with sudden onset right arm weakness and sensory loss, which had progressed to involve the right leg over two days. He had no preceding or intercurrent illness and no notable medical or family history. Examination revealed a right sided hemiparesis, right sided facial droop, and globally brisk reflexes. Magnetic resonance imaging of the brain showed multifocal white matter high T2/FLAIR foci, with a 14 ×14 mm "bullseye" focus in the left pericallosal region (figure).

A clinical diagnosis of multiple sclerosis (MS) was made, with radiological features of Balo's concentric sclerosis (BCS). At 1 month follow-up, and without treatment, he had made a good recovery, with only minimal clumsiness in the right hand.

Demyelination represents an important cause of sudden onset weakness, particularly in young patients. BCS is a rare and typically monophasic subtype of MS, sharing many overlapping features with typical MS, but is associated with rapid progression and a poor prognosis.

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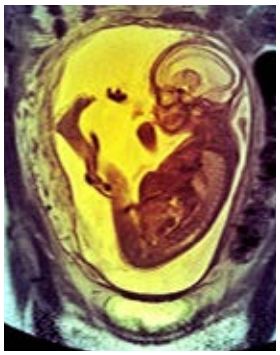
Patient consent obtained.

Cite this as: *BMJ* 2018;362:k3642

Fetal growth influences later cognitive function



Data from a long running twin registry in Sweden finds that being born with a small head for gestational age or with a low birth weight are risk factors for cognitive decline in old age (*PLoS Med*). Compared with infants with normal growth and head size, they had a twofold risk increase even after controlling for familial factors, socioeconomic status, and education. Within-pair analyses of identical twins showed that the link between birth characteristics and dementia couldn't be explained by genetics or shared environmental influences such as prenatal family environment.

Dietary carbohydrate

The golden mean, a balanced middle way that avoids excess on one hand and deficiency on the other, is a feature of many philosophies and religions. The results of a large dietary study from the US suggest that it contains a lesson for those who formulate guidelines about what we should be eating (*Lancet Public Health*). Among more than 15 000 adults followed since the 1980s, those who derived about half their energy intake from carbohydrate experienced the lowest mortality. Both low carbohydrate consumption (<40%) and high carbohydrate consumption (>70%) conferred a greater mortality risk.

Pornography

Internet pornography is widely thought to be detrimental to the mental health of adolescents. Cross sectional studies have reported associations between use of pornography and low self esteem and symptoms of depression among young people. However, a longitudinal study that collected information from adolescents from two cities in Croatia every six months makes a causal relation look doubtful (*PLoS Med*). It found no consistent indications that adolescents who admitted that they looked at pornography, and around half of them did, scored lower on measures of wellbeing 12 months later.

Pregnancy and multiple sclerosis

An analysis of nearly 4000 pregnancies that occurred in women with multiple sclerosis finds a small increase in rates of infection, mainly genitourinary infection, in the mother and a 20% to 30% increase in risk of preterm delivery. Adverse pregnancy outcomes, including poor fetal growth, pre-eclampsia, postpartum haemorrhage, and stillbirth were no commoner than in women without multiple sclerosis, although rates of caesarean section were slightly higher. Around a fifth of women with multiple sclerosis experienced a relapse at some point during their pregnancy but this didn't affect fetal outcomes (*Am J Epidemiol*).

Alcohol rub

There's no doubt that alcohol based hand rubs have been effective in reducing nosocomial infection. However, there are warning signs that the bugs may be catching up. A study that tested isolates of *Enterococcus faecium* obtained between 1997 and 2015 reports that the organism has become 10 times less susceptible to alcohol in recent years (*Sci Trans Med*). It seems that an accumulation of mutations in genes involved in carbohydrate uptake and metabolism allows enterococci to survive exposure to isopropanol.

Cite this as: *BMJ* 2018;362:k3790