GUIDELINES

Diagnosis and management of lower limb peripheral arterial disease: summary of NICE guidance

Jennifer Layden,1 Jonathan Michaels,2 Sarah Bermingham,1 Bernard Higgins,1 on behalf of the Guideline Development Group

Lower limb peripheral arterial disease (referred to as peripheral arterial disease in this summary) is common, affecting 3% to 7% of people in the general population and 20% of people over the age of 75.1 It is associated with an increased risk of cardiovascular morbidity and mortality and severely limits people’s functional capacity and quality of life. Peripheral arterial disease is often asymptomatic, but when it is symptomatic the most common presentation is intermittent claudication (pain in the legs, buttocks, or thighs brought on by walking and relieved by rest). Critical limb ischaemia is characterised by severely diminished circulation, ischaemic pain, ulceration, tissue loss, and/or gangrene. Owing to rapid changes in diagnostic methods, endovascular treatments, and vascular services, there is considerable uncertainty about the management of people with peripheral arterial disease, with management varying greatly across England and Wales.2 This article summarises some of the most recent recommendations from the National Institute for Health and Clinical Excellence (NICE) on the management of peripheral arterial disease.3

Recommendations

NICE recommendations are based on systematic reviews of the best available evidence and explicit consideration of cost effectiveness. When minimal evidence is available, recommendations are based on the Guideline Development Group’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.

Secondary prevention of cardiovascular disease in people with peripheral arterial disease

- Offer all people with peripheral arterial disease information, advice, support, and treatment with respect to the secondary prevention of cardiovascular disease, in line with published NICE guidance on smoking cessation;4 diet, weight management, and exercise;5–11 lipid modification and statin therapy;12–14 the prevention, diagnosis, and management of diabetes;15–17 the prevention, diagnosis, and management of high blood pressure;18 and antiplatelet therapy.2

Diagnosis

- Assess people for the presence of peripheral arterial disease if they:
  - Have symptoms suggesting peripheral arterial disease (for example, leg pain brought on by exertion, rest pain, tissue loss, and/or foot ulcers)
  - Have diabetes, non-healing wounds, or unexplained leg pain
  - Are being considered for interventions to the leg or foot
  - Need compression hosiery.
- Assess people with suspected peripheral arterial disease by:
  - Asking about the presence and severity of possible symptoms of intermittent claudication and critical limb ischaemia (for example, about the nature and location of leg pain, how far the patient can walk, and the presence of nocturnal rest pain)
  - Examining the legs and feet for evidence of critical limb ischaemia (for example, ulceration)
  - Examining the femoral, popliteal, and foot pulses
  - Measuring the ankle brachial pressure index (see recommendation below).

- Measure the ankle brachial pressure index in the following way:
  - The person should be resting and supine if possible.
  - Record systolic blood pressure with an appropriately sized cuff in both arms and in the posterior tibial, dorsalis pedis, and, where possible, peroneal arteries.
  - Take measurements manually using a Doppler probe of suitable frequency in preference to an automated system.
  - Document the nature of the Doppler ultrasound signals in the foot arteries.
  - Calculate the index in each leg by dividing the highest ankle pressure by the highest arm pressure.

Imaging

- Offer duplex ultrasonography as first line imaging to all people for whom revascularisation is being considered.
- Offer contrast enhanced magnetic resonance angiography to people who need further imaging (after duplex ultrasonography) before considering revascularisation. If contrast enhanced magnetic resonance angiography is contraindicated or not tolerated, offer computed tomography angiography instead.

Management of intermittent claudication

- Offer a supervised exercise programme to all people with intermittent claudication.
- Consider providing a supervised exercise programme that involves two hours of supervised exercise a week for a three month period and encourages exercise to the point of maximal pain.
- Offer angioplasty to treat intermittent claudication only when:
  - Advice on the benefits of modifying risk factors has been reinforced and...
A supervised exercise programme has not led to a satisfactory improvement in symptoms and imaging has confirmed that angioplasty is suitable for the person.

- Offer bypass surgery to treat severe, lifestyle limiting intermittent claudication, starting on the least costly preparation, only when supervised exercise has not led to a satisfactory improvement and the person prefers not to be referred for angioplasty or bypass surgery. Review progress after three to six months and discontinue nifediproyl oxide if there has been no symptomatic benefit.

Management of critical limb ischaemia

- Ensure that all people with critical limb ischaemia are assessed by a vascular multidisciplinary team before treatment decisions are made.
- Offer angioplasty or bypass surgery to people with critical limb ischaemia who require revascularisation, into account factors such as comorbidities, pattern of disease, availability of a vein, and patient preference.
- Do not offer major amputation to people with critical limb ischaemia unless all options for revascularisation have been considered by a vascular multidisciplinary team.

Overcoming barriers

A major problem in current practice is the failure to recognise the cardiovascular risk associated with a diagnosis of peripheral arterial disease and the importance of managing this risk through exercise, a healthy diet, smoking cessation, and management of diabetes, hypertension, and other related cardiovascular disease. The Guideline Development Group considered that the modification of risk factors for cardiovascular disease was key priority for implementation as it was concerned that, although peripheral arterial disease is known to be a significant risk factor for cardiovascular morbidity and mortality, it may not be as widely recognised or as actively managed as other known risk factors. The guideline recommendation to offer supervised exercise programmes to all people with intermittent claudication is likely to lead to major change in practice, but the availability and use of such programmes is variable and largely occurs within a secondary care setting. Ideally, such programmes should be community based and easily accessible to patients. The set-up costs of new exercise programmes may be a barrier to implementation, but providers should note that the guideline recommendation of supervised exercise is backed by a detailed analysis showing this to be cost effective. Services could make use of or modify existing exercise programmes for cardiac or respiratory rehabilitation.

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A 37 year old woman presented to her general practitioner with a two month history of low mood, poor sleep, and irritability. She was initially treated for depression with sertraline. Her mood improved slightly over six weeks, but, because of continued insomnia and irritability, her medication was changed to citalopram, with no further improvement. Through regular review and the building of a trusting relationship with her doctor, the patient felt able to disclose that she was experiencing intrusive images of past domestic violence. She was diagnosed with post-traumatic stress disorder and referred for trauma-focused cognitive behavioural therapy; over 15 sessions, this led to a substantial reduction in her symptoms.

What is post-traumatic stress disorder?
Post-traumatic stress disorder (PTSD) is a severe, prolonged, and impairing psychological reaction to a distressing event. The precipitating incident must be “exceptionally threatening or catastrophic” and can range from interpersonal violence and combat to accidents and natural disasters; sexual violence is a particularly potent cause. Serious illnesses or medical interventions can also precipitate PTSD if the individual perceived their own or someone else’s health or life to be under threat. The individual repeatedly relives the event through intrusive imagery, bodily re-experiencing, nightmares, and flashbacks. Irritability, insomnia, and other symptoms related to increased arousal also occur. Sufferers usually have difficulty remembering aspects of the event and avoid reminders of it (see box of diagnostic criteria). Children may act out the traumatic event through repetitive play, drawings, and stories, and have frightening dreams without recognisable content. Adolescents with PTSD can show aggressive or withdrawn behaviour and can find it difficult to relate to their peers.

Why is it missed?
A survey of London general practitioners indicated that most significantly underestimate the prevalence of PTSD among their patients compared with what is expected from epidemiological data. Many were unfamiliar with guidelines, and referral rates for psychological therapy were low. After the 2005 London bombings and treatment programme for PTSD received only 14 referrals from GPs, but identified 184 additional severe cases. There are several reasons why PTSD is underdiagnosed or misdiagnosed. About 80% of PTSD cases are comorbid with other conditions, including depression, panic attacks, substance misuse, and personality disorders. Comorbid disorders are often erroneously treated as the sole or primary diagnosis. Patients might not volunteer re-experiencing symptoms because of shame or distress, yet specific inquiries about such features are only made infrequently once a comorbid condition has been diagnosed.

Cultural and language are additional barriers to the correct diagnosis. Some patients primarily express distress through somatic symptoms, and the psychological component can be missed. Descriptions of intrusive imagery and auditory re-experiencing can be misinterpreted as psychotic symptoms in patients with limited English.

Why does this matter?
Most treatments for anxiety or depression will be of limited effectiveness for PTSD, and patients might be incorrectly assumed to have a treatment-resistant anxiety or mood disorder. Although some sufferers remit without treatment, especially within the first year, others develop chronic symptoms and comorbid conditions and are at increased risk of suicide. Secondary adversities such as unemployment and separation can arise. PTSD in children can have long term negative consequences for psychosocial development and education; children’s health and development can also be negatively affected by parental PTSD.

How is post-traumatic stress disorder diagnosed?
PTSD is diagnosed by assessing the patient’s symptoms against psychiatric diagnostic criteria in ICD-10 (International classification of diseases, 10th revision) and DSM-IV (diagnostic manual of mental disorders, fourth edition), although these are to be substantially revised in forthcoming editions. A careful chronological symptom history...
is key, and patients should be offered time alone, whatever their sex or age. For patients with atypical or apparently treatment resistant mood or anxiety disorders, or unexplained physical symptoms, clinicians should consider asking about potentially traumatic events such as assault, accidents, and complicated childbirth.\(^4\) The 10 item Trauma Screening Questionnaire is a useful, validated, freely available tool to elicit symptoms of PTSD.\(^5\)

**How is post-traumatic stress disorder managed?**

The National Institute for Health and Clinical Excellence (NICE) guideline for PTSD covers recommended treatment strategies for all ages.\(^6\) This and other major guidelines, based on systematic reviews of randomised controlled trials, concur that psychological interventions that include some exposure to reminders of the traumatic event are effective for both children and adults.\(^7\) These include trauma-focused cognitive behavioural therapy or eye movement desensitisation and reprocessing. In adults for whom these psychological therapies are not appropriate or are ineffective, paroxetine or mirtazapine may be offered in either primary or secondary care. Specialist psychiatric management is indicated if there are complex comorbitides, significant risk concerns, or a poor treatment response. PTSD is normally treated before mild or moderate comorbid disorders.\(^8\) Severe comorbid depression or substance misuse can be treated first if they might limit treatment engagement or contribute to significant risk to self or others.\(^9\)

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**The name game**

Names are important for patient identification. In our paediatric surgery centre anecdotal reports from clinicians suggested parents were often changing the names of their infants, making patient identification difficult.

We aimed to establish how commonly patients’ names were being changed by searching the hospital’s database for the names of all neonates admitted under every surgical consultant in the previous five years. Using the unique patient identification number, we searched the hospital’s electronic integrated healthcare system, which provides details of previously registered names. We recorded each patient’s forename and surname and whether either or both had been changed.

Of the 457 patients who were admitted to our unit during this period, forenames or surnames were changed in 32.4% of admissions. Both first and second names were changed in 1.3%.

Paediatricians should be aware that a substantial proportion of their patients may have changed their names. Appreciation of this may safeguard against potential errors in identification.

**Sean Strong** surgical research fellow

**Kathryn Evans** specialist registrar, paediatric surgery

**Janet McNally** consultant, paediatric surgery, Paediatric Surgical Department, Bristol Royal Hospital for Children, Bristol, UK

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