Peripheral arterial disease (PAD) can lead to reduced health-related quality of life for individuals and increased costs for healthcare systems. Results from a systematic review and cost-effectiveness analysis were published in 2013 (Kearns, 2013); this considered alternatives to percutaneous transluminal angioplasty (PTA) as treatment for PAD. In the preceding years additional evidence on alternatives to PTA have arisen. In particular, a new class of bare metal stent – the biomimetic stent – is now available.

The objective of this work was to update the cost-effectiveness analysis to incorporate the latest clinical effectiveness evidence. Both UK and German healthcare perspectives were considered.

What is a cost-effectiveness analysis?

For a health technology (such as a stent), a cost-effectiveness analysis considers as outputs both the lifetime costs incurred by the healthcare system and also the impact on a patient’s length of and quality of life. For PAD costs relate to the cost of the initial treatment, along with the management and treatment of PAD (including re-interventions) if symptoms return. For patients, quality of life is reduced if they experience a return of symptoms or if their disease progresses. Length of life will be reduced if a patient dies during a re-intervention. Cost-effectiveness analyses attempt to help answer the question ‘does a health technology represent value for money?’ This is important because healthcare systems cannot pay for all clinically effective technologies, so a framework is needed to inform decisions about what to pay for.

Methods

The mathematical model from the previous cost-effectiveness analysis was used. This model simulates outcomes and costs associated with the use of PTA or an alternative intervention. Outcomes include mortality (due to the intervention other causes), rates of acute or late failure, return of symptoms, disease progression and rates of amputation. A model schematic is provided in Figure 1. For more details see Simpson et al.(2014).

Figure 1: Model; schematic.

Perioperative outcomes
- Perioperative mortality
- Acute failure*
- Alive and patent

Long-term outcomes
- Late failure (with return of symptoms)*
- Late failure (no return of symptoms)
- Develop contralateral symptoms*
- Disease progression (following failure)
- Requires amputation

*Re-intervention

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References

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