EVIDENCE BRIEF

CVD: Secondary prevention of

Peripheral artery disease
(DCP4 ID: CVD03-03)
Cluster: Cardiovascular & related disorders

FairChoices
DCP Analytic Tool

Secondary prevention of peripheral artery disease

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Description of condition and intervention

Peripheral artery disease (PAD) is one of the common causes for vascular problem, which accounts for 202 million globally (Sanjot S. Sunner, 2021). The prevalence of this health problem increasing with age. The critical limb ischemia is the most severe type of PAD which links with severe resting leg pain, with or without tissue necrosis. The common symptom of PAD is buttock pain, weakness in legs, aching or burning in feet or toes during resting time, a sore on leg, feeling cold or changing colour of legs and loss of hair on legs. It can be prevented by regular exercise, smoking cessation, statins, antithrombotic, managing blood pressure and glucose. In this evidence brief, we present the effect and cost of the following intervention being analysed in FairChoices:DCP Analytical tool:

Secondary prevention of peripheral artery disease

International guidelines

Organization	Indications/recommendations
NICE, 2020	Peripheral arterial disease: diagnosis and management

Source: https://www.nice.org.uk/guidance/cg147/chapter/recommendations

Intervention attributes

Type of interventions
Prevention

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Delivery platform

This intervention may be delivered as part of routine care services predominantly at health centre level.

Equity

In addition to considerations like cost-effectiveness and health systems factors, dimensions of equity can be relevant for priority setting. The opportunity for a long and healthy life varies according to the severity of a health condition that individuals might have, so there are inequities in individuals' opportunities for long and healthy lives based on the health conditions they face. Metrics used to estimate the severity of illness at an individual level can be used to help prioritize those with less opportunity for lifetime health. FairChoices: DCP Analytics Tool uses Health adjusted age of death (HAAD), which is a metric that estimates the number of years lived from birth to death, discounting years lived with disability. A high HAAD thus represents a disease less severe in terms of lifetime health loss, while a low HAAD represents a disease that is severe on average, causing early death or a long period of severe disability. It is also possible to estimate the distribution of HAAD across individuals with a health condition. FairChoices shows for each intervention an average HAAD value of the conditions that are affected by respective interventions that have health effects. Additionally, a plot shows HAAD values for around 290 conditions (Johansson KA et al 2020).

Time dependence

Moderate level of urgency. Treatment outcomes not highly affected by some days of delay.

Population in need of interventions

Prevalent cases of peripheral artery disease for age group 15 to 99 years.

Disease stage addressed

Primary cause addressed by Global burden of disease nosology is peripheral artery disease.

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Intervention effect and safety

Table 1: Effect and safety of secondary prevention for peripheral artery disease

Effect of intervention		Certainty of evidence
Mortality (due to condition) ACEi* Aspirin* Beta-blockers* Statins*	0.8 0.72 0.68 0.46	See appendix
Total relative mortality reduction (RRR)**	0.813	

*RR=Relative risk   **RRR=Relative risk reduction   ACEi=Angiotensin converting enzyme inhibitors

Model assumptions

Table 2: Summary of model parameters and values used in FairChoices – DCP Analytical Tool

Category	Model parameter	Notes
Intervention	Secondary prevention of peripheral artery disease	
Cost calculation		
Treated population	Based on prevalence of peripheral artery disease	Global Burden of Disease Study 2019
Gender	Both male & female	
Age	15-99 years	
Treated fraction	1	
Effect calculation		
Affected population	Those with the condition	
Affected gender	Both male & female	
Affected fraction age	15 to 99 years	
Affected fraction	1	
Comparison	No intervention	
Effect on mortality (RRR)	0.813	Feringa et al 2006 Coppola et al 2008

**Relative risk reduction (RRR) estimated as 1-Relative risk (RR)

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Intervention cost

The unit cost for delivering this intervention per patient was 101.05 USD, based on Ngalesoni et al 2016.

References

Feringa et al 2006: Feringa HH, van Waning VH, & Bax JJ, Elhendy A, Boersma E, Schouten O, Galal W, Vidakovic RV, Tangelder MJ, Poldermans D(2006). Cardioprotective medication is associated with improved survival in patients with peripheral arterial disease. J Am Coll Cardiol, 47(6), 1182–1187. https://doi.org/10.1016/j.jacc.2005.09.074

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Johansson KA et al 2020: Johansson KA, Coates MM, Økland JM, Tsuchiya A, Bukhman G, Norheim OF, Haaland Ø. Health by disease categories. Distributional Cost-Effectiveness Analysis: Quantifying Health Equity Impacts and Trade-Offs. 2020 Sep 30:105.

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Appendix

Literature Review for effectiveness & safety

This literature search is an example of Level 1 search for intervention inputs taken from DCP3 or generated in an ad hoc manner (e.g., quick google search found one study of cervical cancer screening cost-effectiveness that was used to create an effectiveness parameter for that intervention).

Level of evidence of efficacy studies:

1. low (expert opinions, case series, reports, low-quality case control studies)

2. moderate (high quality case control studies, low quality cohort studies)

3. high (high quality cohort studies, individual RCTs)

4. very high (multiple RCTs, metaanalysis, systematic review, clinical practice guidelines).