Bypass surgery for chronic lower limb ischaemia: Cochrane Review

Oliver Cawley MBChB BSc Hons

Department of Vascular and Endovascular Surgery, The Royal Oldham Hospital, Pennine Acute Hospitals NHS Trust, Manchester, United Kingdom

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GEORGE A ANTONIOU, GEORGE S GEORGIADIS, STAVROS A ANTONIOU, RAGAI R MAKAR, JONATHAN D SMOUT, FRANCESCO TORELLA

Overview

- To investigate the effectiveness of bypass surgery compared with placebo or no intervention, medical management alone, and other forms of interventional treatment for lower limb peripheral arterial disease (RCTs)

- Primary outcomes:
  - **Early post-operative non-thrombotic complications**
  - **Procedural/ Overall mortality**
  - **Clinical improvement**
  - **Amputation**
  - **primary patency**

11 studies N= 1486	Bypass vs PTA (6 studies)
	Bypass vs remote endarterectomy
	Bypass vs Thromboendarterectomy
	Bypass vs Thrombolysis
	Bypass vs exercise
	Bypass vs SC stimulation

Bypass vs PTA (n=1015)

Bypass showed trend towards

- Higher technical success rates
- Primary patency rate at 1 year (but eliminated at four years)

- Increased Peri + Post interventional complications

No significant differences:

- Re-intervention rates, clinical improvement, amputation rates, mortality

Bypass vs Thrombolysis (n=237)

- Amputation rate significantly lower after bypass surgery

No Significant difference:

- Mortality (30 days, late mortality)
- Complication rate

Bypass surgery vs. Remote Endarterectomy (n=116)

- Technical success rate higher in bypass group (not significant)

No significant difference:

- post-interventional non-thrombotic complications, patency, amputation, and mortality rates,

Bypass surgery vs Thromboendarterectomy (n=43)

- Technical success significantly higher in Bypass group

No significant difference:

- Peri-operative mortality, amputation rates

Bypass vs exercise (n=75)

- No significant differences in early post-interventional complications and mortality or walking distance

Conclusions

- Limited evidence for the effectiveness of bypass surgery compared with other treatments
- PTA associated with decreased peri-interventional + shorter hospital stays compared with bypass surgery.
- Bypass confers improved patency rates in short term, but longer-term effects similar
- Endovascular treatment may be advisable in patients with significant co-morbid conditions, rendering them high risk surgical candidates.

Conclusions

- No solid conclusions can be drawn regarding comparisons of bypass surgery with other treatments because of the paucity of related (wide CI)

- No studies compare bypass to optimal medical treatment

- Further large trials evaluating the impact of anatomical location and extent of disease and clinical severity are required.