Hospital resource use in below-knee surgical bypass procedures with ePTFE vascular grafts with heparin end-point covalent bond in critical limb ischemia peripheral arterial disease (PAD) patients

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OBJECTIVES

PAD is mainly caused by atherosclerosis that reduces blood flow to the limbs. Critical limb ischemia (CLI) is an advanced stage of PAD, presenting as a severe blockage in the arteries of the lower limbs.

Treatment options include a lower limb surgical bypass to treat stenosed or occluded arteries. Different types of conduits can be used for the bypass procedures including venous such as autologous saphenous veins, and synthetic conduits such as ePTFE vascular grafts.

- This study reviewed the hospital resource use reported in published literature for below-knee surgical bypass procedures using a synthetic conduit, the GORE® PROPATEN® Vascular Graft with heparin end-point covalent bond.

METHODS

A literature review of studies on GORE® PROPATEN® Vascular Graft with heparin end-point covalent bond was conducted. Articles were included if they were:

- On below-knee bypass procedures
- On critical limb ischemia patients
- Published after 2010 and
- Reported any type of hospital resource use for example, hospital stay, operating room time, blood products etc.

Studies reporting data from registries were excluded due to high risk of bias. Data was extracted and pooled using a weighted average method.

Table 1: Hospital stay

Study	Country/region	Number of patients (GORE® PROPATEN® Device arm)	Hospital stay reported (days)
Bellosta[1]	Italy, Europe	40	11.8
Monaca[2]	Italy, Europe	221	6.1
Kaisar[3]	U.S., N. America	62	5.2

Table 2: Operating room time

Study	Country/region	Number of patients (GORE® PROPATEN® Device arm)	Operating room time reported (minutes)
Bellosta[1]	Italy, Europe	40	215
Monaca[2]	Italy, Europe	221	103
Kaisar[3]	U.S., N. America	62	196
Hirth-Voury[4]	Italy, Europe	17	203

For below-knee surgical bypass procedures using the GORE® PROPATEN® Vascular Graft with heparin end-point covalent bond, the weighted average:

- Hospital stay was 6.6 days (per patient) and
- Operating room time was 138 minutes (per patient)

RESULTS

11 studies published after 2010 met the inclusion criteria and underwent a full text review. Seven studies did not report any hospital resource use. Four studies were included in the final selection.

- Three studies[1-3] reported hospital stay (n = 323 patients) *(Table 1)* and
- Four studies[1-4] reported operating room time for the bypass procedure (n = 340 patients) *(Table 2)*

No other type of hospital resource use was reported.

CONCLUSIONS

- Clinical outcomes such as patency and complications are consistently reported in studies.
- Outcomes on hospital resource use are not consistently reported and are limited to hospital stay and operating room time.
- More reporting on hospital resources e.g., intensive care bed use, blood products and consumables used in treatment of complications, can assist decision makers understand the broader costs of the bypass procedure in the patient treatment pathway.

REFERENCES

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