

Surgical outcome

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Relief of symptoms If revascularisation is complete, CABG alleviates or improves anginal symptoms in more than 90% of patients at 1 year; this falls to 80% at 5 years and 60% at 10 years. This symptomatic deterioration usually reflects progression of atherosclerotic disease in vein grafts and native coronary arteries. Survival Studies have reported survival rates to be >95% at 1 year, 90% at 5 years, 75% at 10 years and 60% at 15 years. These results may improve in the future because of increased use of arterial conduits and widespread use of dual antiplatelet therapy, β -blockers and lipid-lowering agents. Summary box 59.8 Coronary artery bypass surgery outcome

CABG without the use of CPB is gaining popularity and may be combined with a minimally invasive approach or carried out through a conventional sternotomy. It avoids the potential physiological stress associated with CPB and, to some extent, the aortic manipulation that can lead to neurological injury through atherosclerotic embolisation. Since the introduction of cardiac stabilising devices such as the Octopus (Figure 59.8), off-pump coronary artery bypass (OPCAB) grafting has become widespread in the UK and around the world. The advantages of off-pump surgery over on-pump have recently been questioned, especially with the development of mini-bypass pumps, which offer a closed circuit and minimal non-physiological surface area. This reduces proinflammatory activation but at the same time allows the surgeon to operate on a still, bloodless heart. The disadvantages of OPCAB are mainly related to the quality and number of anastomoses. There is still no evidence to support the superiority of any of the above-mentioned techniques and the final decision is usually based on the surgeon's skills and the required operation. Minimal access surgery Minimally invasive direct coronary artery bypass (MIDCAB) grafting is performed through a small incision and avoids the invasive aspects of conventional CABG. Through an anterior submammary incision the LIMA can be dissected using a thoracoscope and grafted to the LAD. More lateral incisions allow access to other coronary vessels, including branches of the circumflex artery. Although not yet evidence based, one approach is to combine MIDCAB (typically LIMA to LAD) with PCI to other less accessible coronary arteries ('hybrid' coronary revascularisation).

Mortality Survival 1–3%

“ 95% at 1 year 90% at 5 years Perioperative infarct 75% at 10 years 2–3% 60% at 15 years Angina Improved in >90% at 1 year 80% at 5 years 60% at 10 years

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