SUMMARY

Use of Drug Eluting Coronary Artery Stents in NSW Public Hospitals

Key recommendations
1. Drug eluting stents (DES) represent a safe, effective and economical treatment for coronary artery stenosis. They should be used at the treating clinician’s discretion in the management of Coronary Artery Disease (NMHRC Level of evidence: A I*)
2. The location and severity of the stenosis, patient comorbidities and the individual’s ability to tolerate and adhere to antiplatelet therapy should be considered prior to stent implantation. (NMHRC Level of evidence: A I)
3. Discharge planning for Aboriginal people should include Aboriginal health providers and mainstream general practitioners connecting patients to Closing the Gap practice initiatives, supporting best-practice medication management and ensuring regular follow-up.

Background
In 2008, the Greater Metropolitan Clinical Taskforce (now known as The Agency for Clinical Innovation), Cardiac Coordinating Committee published Clinical Guidelines for the Use of Drug Eluting Coronary Artery Stents in Public Hospitals in NSW.¹ These guidelines recommended that DES be considered in the following clinical circumstances:

- patients with diabetes
- lesions greater than 18mm in length
- vessels less than 2.5mm in diameter
- in-stent re-stenosis and bifurcation or ostial lesions.

Further data is now available on the short and long-term safety, efficacy and cost-effectiveness of DES. Therefore, the 2008 recommendation on the use of DES has been updated to incorporate contemporary evidence.

Safety and effectiveness
The long-term benefits on the use of DES versus bare metal stents (BMS) have been demonstrated in a number of large randomised controlled trials. The most recent NORSTENT trial involved 9,013 patients with five year follow-up. Mortality and non-fatal infarction rates were no different in patients with DES compared to BMS. However, the DES group had fewer repeat revascularisations (16.5% vs 19.8% HR, 0.76; 95% CI, 0.69 to 0.85; P<0.001) and fewer incidences of stent thrombosis (0.8% and 1.2% P = 0.0498).² These results mirror numerous studies reporting no differences in mortality or acute myocardial infarction associated with the type of stent used in addition to studies that show significant variation in the incidence of adverse events such as target lesion revascularisation with DES being associated with fewer events.³ The NORSTENT results are also supported by studies that assessed DES effectiveness in patients with conditions which are usually associated with worse outcomes in coronary artery disease, such as patients on regular dialysis, or those experiencing ST-segment elevation myocardial infarction.⁴,⁵,⁶

Data from the Victorian Cardiac Outcomes Registry demonstrates that DES are safe with no excess risk of stent thrombosis compared to BMS. DES were used on average in 71% of public hospital cases in Victoria in 2015 (range 51%–94%).⁷

Long-term medication
The insertion of stents into coronary arteries is associated with the risk of stent thrombosis, a rare, but serious complication. The American College of Cardiology/American Heart Association recommend treatment with dual antiplatelet therapy for at least one month post stent insertion in patients with stable ischaemic heart disease and 12 months for patients with unstable disease including acute myocardial infarction.⁸

* Level of evidence based on a large number of studies including systematic reviews of randomised controlled trials.
Cost-effectiveness

The increased cost of DES has been a barrier to uptake in public hospitals in many jurisdictions. Early economic evaluations suggested that DES may be better value in higher risk populations. However, multiple cost-effectiveness studies have demonstrated that DES are either cost neutral or have favourable cost-effectiveness, compared to BMS, independent of the condition. This change is driven by a reduction in the cost of DES and emerging evidence regarding fewer post-stent complications, such as the need for revascularisation, offsetting the initial cost difference between DES and BMS. This position is reflected internationally with changes to clinical guidelines in the United Kingdom, Europe and the United States of America. These guidelines support the use of DES for most patients if they meet other criteria including the affected artery diameter, position and individual tolerance of extended antiplatelet therapy.

Supporting improved access to DES for Aboriginal people

Aboriginal people have a higher burden of cardiovascular disease and associated poorer health outcomes with:

- lower rates of revascularisation
- a higher risk of dying within two years after myocardial infarction compared to non-Aboriginal people
- are more likely to be admitted to hospitals without a cardiac catheterisation laboratory.

It is important that Aboriginal people and their families have a good understanding of risks and benefits of DES including ongoing care and follow-up. This may include translation and development of culturally appropriate resources to support health literacy. This information should include why the stent was needed and the importance of taking medication after the procedure. Hospital services need to engage and develop early partnerships with local Aboriginal health providers (including Aboriginal Health Workers, Aboriginal controlled community health services and Aboriginal Medical Services) and mainstream general practitioners to individually tailor discharge planning to support best-practice medication management, regular follow-up and optimal health outcomes for Aboriginal patients that have a DES inserted.

Primary care providers should use practice incentives to provide holistic care and support best practice management of chronic cardiac disease. Referral should also be made to cardiac rehabilitation and other support services such as integrated care. General practitioners should connect Aboriginal patients to Closing the Gap practice initiatives and ensure they can access Closing the Gap scripts.

Conclusion

Following review of the current evidence comparing health and economic outcomes associated with DES and BMS the ACI Cardiac Network recommends that the choice of stent is at the treating clinician’s discretion following consideration of the location and severity of the stenosis, patient comorbidities and the individual’s ability to tolerate and adhere to long-term antiplatelet therapy.

References


