Drug-Eluting Stent: *Friend or Foe in Coronary Artery Disease*

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Coronary artery stents revolutionized the practice of interventional cardiology after they were first introduced in the mid-1980s. However, in-stent restenosis is a serious occurrence that can lead not only to recurrent angina and repeat revascularisation but also to acute coronary syndromes. Drug-eluting stents (DES) revolutionised interventional cardiology owing to their pronounced ability to reduce restenosis compared with bare-metal stents.

Despite all the benefits of DES, concerns have been raised over their long-term safety, with particular reference to stent thrombosis. Nevertheless, findings of randomised clinical trials have not shown that drug-eluting stents result in excess mortality after 4–5 years of follow-up.

As with other controversial therapies, conflicting data continues to confound judicious DES usage. Subgroup analyses identifying risk factors, both epidemiologic and angiographic, for DES-late thrombosis demonstrate significant overlap with those for BMS restenosis.

In an effort to address the safety concerns about stent thrombosis, newer stents have been developed that include: DES with biodegradable polymers, DES that are polymer free, stents with novel coatings, and completely biodegradable stents. Many of these stents are currently undergoing pre-clinical and clinical trials; however, early results seem promising.

It is clear that no single stent design and polymer type will be suitable for all patients and lesion types. Reassuringly, the new stent technology appears to allow interventional cardiologists to make these choices, and there is great anticipation that this will result in improved long-term clinical efficacy and safety.