

Are Newer Third-Generation Stent Grafts Safer and Better for Endovascular Aneurysm Repair?

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An analysis of the EUROSTAR-registry database has been undertaken to compare AneuRx, EVT/Ancure, Excluder, Stentor, Talent, and Zenith devices with the Vanguard device and with each other. The data were adjusted to correct for differences in the morphological features of the aneurysms treated, demographic characteristics of the patients and non-device-related post-operative events. Annual incidence rates of complications were determined and comparisons between different stent grafts were made using Cox's Proportional Hazard analysis.

A total of 6,787 patients were included in the analysis. The annual incidence rates for the adverse events analyzed were: device related endoleak 6% (range: 4–10%), type II endoleak 5% (range: 0.3–11%), kinking 2% (range: 1–5%), migration 3% (range: 0.5–5%), device limb occlusion 3% (range: 1–5%), rupture 0.5% (range: 0–1%), and all-cause mortality 7% (range: 5–8%). After adjustment for the factors listed above that are known to influence the outcome AneuRx, Excluder, Talent, and Zenith endografts were associated with a lower risk of kinking, migration, occlusion, and secondary intervention compared to the Vanguard device. Significantly increased risks for conversion (EVT/Ancure) and reduced risk of aneurysm rupture (AneuRx and Zenith) and all cause mortality (Excluder) were found compared to the Vanguard device.

Significant differences in the incidence of adverse events were found between the stent-grafts currently approved by the US Food and Drug Administration and commercially available in the United States (Table 1). Each stent graft was shown to have strengths and weaknesses, but the Zenith and Excluder devices were associated with lower risks of serious adverse events than the other devices.

References

1. van Marrewijk CJ, Leurs LJ, Vallabhaneni SR, et al. Risk adjusted outcome of endovascular abdominal aortic aneurysm repair in a large population: How do stent-grafts compare? JEVS. (In press)