

Predictors of stroke and TIA in cardiac surgery – single center analysis.

P. Olszowka, A. Szafranek, P. O'Keefe, Wales, UK

Background

Neurological complications are a rare but devastating complication after cardiac surgery despite advances in perioperative monitoring and management. The purpose of this study was to determine the predictors of stroke and transient ischemic attack (TIA) in a cardiac surgery population.

Methods

From April 1998 to March 2006, data from 6775 patients undergoing cardiac surgery were analyzed. The association of preoperative and perioperative factors with stroke and TIA was investigated by univariate and multivariate analysis. Stroke and TIA was defined as any new permanent or transient neurological deficit or deterioration and was confirmed by computed tomography imaging whenever possible.

Results

The incidence of stroke or TIA was 1.95% (n=132) and varied between surgical procedures (CABG 1.2%; AVR 1.4%; MVR 1.0%; multi valve surgery 2.8%; CABG and valve surgery 3.7%, ascending aorta surgery 7.5%, cardiac surgery and carotid endarterectomy 12.5%, other 0.9). Multivariate analysis identified as independent predictors of stroke or TIA: previous cerebrovascular accident (CVA), peripheral vascular disease (PVD), atrial fibrillation (AF), long cross clamp time (CCT), carotid endarterectomy and ascending aorta surgery.

Conclusion

Overall incidence of stroke or TIA is relatively low in our series. Previous CVA, PVD, AF and long CCT, carotid endarterectomy and ascending aorta surgery were independent predictors of stroke or TIA. These factors should be taken into account when informing each individual patient on the possible risk of neurological complications and in the decision-making process on the surgical strategy.