Influence of early postoperative heart failure on five-year survival after surgery for aortic stenosis compared with CABG

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Objectives Postoperative heart failure (PHF) is a major cause of in-hospital mortality after cardiac surgery. Different characteristics and short-term outcomes of PHF were recently reported in patients undergoing aortic valve replacement (AVR) for aortic stenosis (AS) compared to patients undergoing coronary surgery (CABG[4]. The influence of PHF on long-term outcome in these patient groups remains to be clarified. Therefore, the aim of this study was to investigate the impact of PHF, in relation to other risk factors and periprocedural events, on five-year survival after AVR for AS and CABG respectively.

Material and methods All patients undergoing AVR for AS during 1995 - 2000 in the southeast region of Sweden (n=398) were compared with a cohort, matched for age- and sex, undergoing CABG (n=398). Forty-five AVR and 47 CABG patients required treatment for PHF. Follow-up was 7.2 ± 1.7 years (range 5.2 – 11.2 years). The proportionality assumption was not met and therefore logistic regression was chosen in favour of Cox regression to evaluate impact of risk factors for 5-year mortality.

Results Thirty-day, one-year and five-year mortality in patients with and without PHF after AVR were 6.7% v 1.4% ($p=0.05$), 8.9% v 4.0% ($p=0.13$) and 42.2% v 14.2% ($p<0.0001$) respectively. Corresponding figures for patients with and without PHF in the CABG group were 21.3% v 1.1% ($p<0.0001$), 25.5% v 3.1% ($p<0.0001$) and 36.2% v 11.1% ($p=0.0015$). PHF, preoperative renal dysfunction, procedure-associated stroke, BMI<19 kg/m^2, increasing age, preoperative atrial fibrillation and preoperative anemia turned out as independent risk factors for overall five-year mortality as well as for late mortality (between 30 days and 5 years) after AVR. In the CABG group PHF emerged as a strong risk factor for early mortality (<30 days) and for overall five-year mortality, but not for late mortality. Independent risk factors for late mortality in the CABG group were increasing age, procedure-associated stroke and diabetes mellitus.

Conclusions The impact of PHF on five-year survival was profound both after AVR for AS and after CABG. PHF was associated with a high early mortality after CABG whereas the consequences of it after AVR for AS became evident only with time.