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Clinical differences between men and women undergoing surgery for acute type A aortic dissection

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Background: Difference of clinical feature, surgical outcome, and long-term fate between men and women who undergo surgery for type A aortic dissection have not been well known.

Methods: From January 2004 to December 2016, 303 patients underwent surgery for acute type A aortic dissection at our institution which consisted of 147 females and 156 males. We compared clinical outcomes between the two cohorts.

Results: Men were younger (72.6 vs. 63.0; $p < 0.001$) and had more prevalent of smoking history than female (9.5% vs. 71%; $p < 0.001$). Operative mortality was similar between the groups (8.2% vs. 8.9%; $p = 0.80$). The duration of intensive care unit (ICU) stay (54 vs. 64 median hours; $p = 0.03$) and mechanical ventilator support (34 vs. 43; $p = 0.02$) were significantly shorter in female. Multivariate logistic regression analysis revealed that preoperative cardio-pulmonary resuscitation ($p = 0.012$), cardiac tamponade ($p = 0.001$), chronic obstructive pulmonary disease ($p = 0.005$), hemodialysis ($p = 0.035$) and longer cardio-pulmonary bypass time ($p < 0.001$) were independent risk factors for early death. Among the hospital survivors, the actual survival rate was 59.0% in women and 65.7% in men at 10 years ($p = 0.81$). Cox regression analysis revealed that cerebrovascular accident (hazard ratio [HR], 3.21; 95% CI, 1.05-9.80; $p = 0.04$), chronic obstructive pulmonary disease (HR 4.58; 95%CI, 1.64-12.8; $p = 0.004$), operation time (HR, 1.005; 95% CI, 1.002-1.008; $p = 0.003$) were independent predictors of late mortality. During the follow-up period, there were 9 female and 27 male patients who underwent reoperation that related to the aortic dissection. The rate of 10-year actual freedom from reoperation was 80.7% in female and 53.1% in male (log-rank $p = 0.018$). The female gender was an independent suppression factor for long-term reoperation (HR, 0.49; 95% CI, 1.002-1.008; $p = 0.003$).

Conclusions: There were no differences in surgical mortality, surgical complication, and long-term mortality between females and males. The male patients had significantly higher rate of reoperation than female.

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