

Impact of hospital volume on risk-adjusted mortality following oesophagectomy in Japan

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Background: Previous studies have reported that patients undergoing oesophagectomy in high-volume hospitals experience lower mortality rates. However, there has been ongoing discussion regarding the validity of evidence for this association. The purpose of this study was to investigate the relationship between hospital volume and risk-adjusted mortality following oesophagectomy in Japan, using a nationwide web-based database.

Methods: The study included patients registered in the database as having undergone oesophagectomy with reconstruction between 2011 and 2013. Outcome measures were

30-day and operative mortality rates. Logistic regression analysis was used to adjust for hospital volume, surgeon volume and risk factors for mortality after oesophagectomy.

Results: A total of 16 556 oesophagectomies at 988 hospitals were included; the overall unadjusted 30-day and operative mortality rates were 1.1 and 3.0 per cent respectively. The unadjusted operative mortality rate in hospitals performing fewer than ten procedures per year (5.1 per cent) was more than three times higher than that in hospitals conducting 30 or more procedures annually (1.5 per cent). Multivariable models indicated that hospital volume had a significant effect on 30-day (odds ratio 0.88 per 10-patient increase; $P = 0.012$) and operative (odds ratio 0.86 per 10-patient increase; $P < 0.001$) mortality.

Conclusion: In Japan, high-volume hospitals had lower risk-adjusted 30-day and operative mortality rates following oesophagectomy compared with low-volume hospitals.

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