

# Nationwide regional variations in treatment rate and outcome of patients affected by thoracic aortic diseases (TAD) *by*

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## Objectives

It was suggested that operative mortality rates are lower at hospitals that perform surgery more frequently for TAD. Recommendations were made in many countries to concentrate, or regionalize, selected procedures in higher-volume hospitals. We examined nationwide trends and attempted to determine whether there is any regional variation in rates of admission and treatment of TAD.

## Methods

Between 2004/5-2010/11 using hospital episodes' statistics (HES) of England, we identified all patients with a TAD. Rates were compared between years, across geographic regions, and between hospitals of various bed sizes. The primary outcome was 6 month mortality. Exposures of interest were: having an operation (surgical and/or endovascular) either during the index admission or within six months; having an elective rather than an emergency operation; dissection versus aneurysmal disease, demographics, social deprivation and comorbidity.

## Results

Noted 24548 patients with a diagnosis of TAD. 16448 (67%) were affected by thoracic aortic aneurysms, 6345 (25.9%) by dissections, and 1665 (6.8%) by unspecified TAD; 5445 (22.2%) underwent treatment (surgical/endovascular) within 6 months of diagnosis. Significant regional differences in the treatments rates for TAD were observed, ranging from 7% to 37%, and this remained significant after adjusting for differences in baseline characteristics. There were regional differences by county for 6-month mortality in untreated patients, but not in treated patients.

## Conclusion

Regional differences exist in the treatment rate of patients affected by TAD in England. However, the 6-month mortality rates did not differ across regions for patients receiving surgical or endovascular treatment.