A sinister needle in an enormous haystack: A clinician survey regarding aortic dissection diagnostic practice in UK EDs

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Introduction

Acute aortic syndrome (AAS) is a life-threatening emergency which can present a diagnostic conundrum for the emergency department (ED) clinician. AAS is sometimes missed because we fail to consider it. Other times it is considered, but we are unclear how far down a diagnostic pathway (history, examination, biomarkers and radiology) we should proceed to safely rule it out. There are several risk stratification scores in existence, most prominent the ADD-RS, often paired with D-dimer as per the ADvISED study protocol[1]. However, no risk score has yet been externally validated or incorporated into any national guidelines.

Objectives

We aimed to obtain an overview of current UK ED prevalence of AAS and diagnostic work-up practice, including use of risk stratification scores.

Methods

We designed an online survey and invited the clinical leads from all UK EDs to participate in December 2021. The survey was later opened up to a wider range of participants via Twitter in January 2022 in order to obtain responses from as many UK EDs as possible. Only one response was included from each site. Where there were multiple responses from the same ED, the more detailed response was used.

Results

There were 68 responses to the survey. 11 were excluded due to duplication of sites. One was excluded as the site was not stated. 56 responses were analysed. All UK nations were represented.

21.4% of responding EDs manage Type A dissections on site. 53.6% of responding EDs manage Type B dissections on site.

Figure 1: Responding sites

Figure 2: Does your ED have a formal pathway for work-up of potential acute aortic dissection?

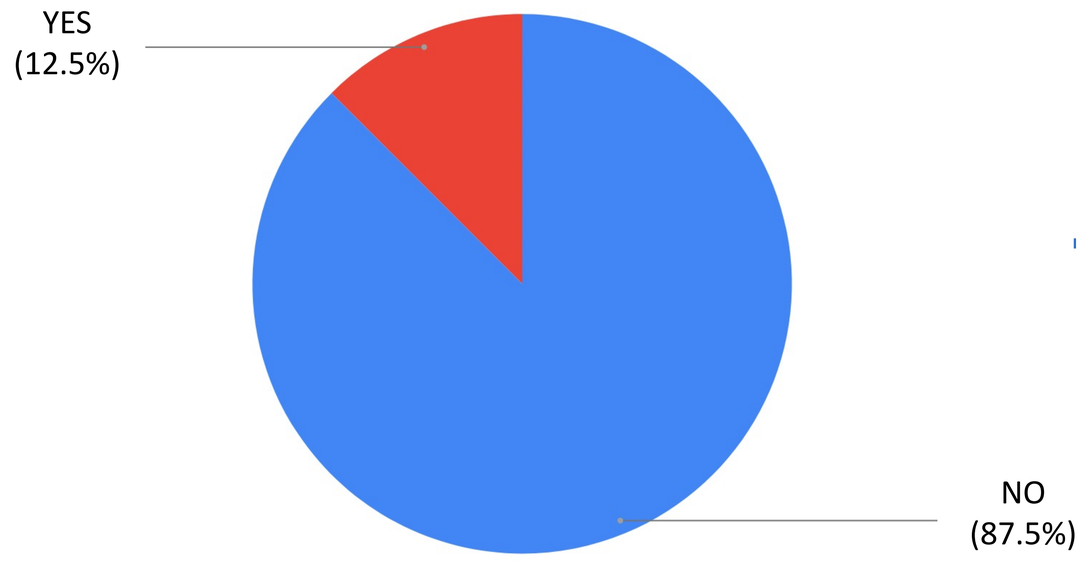
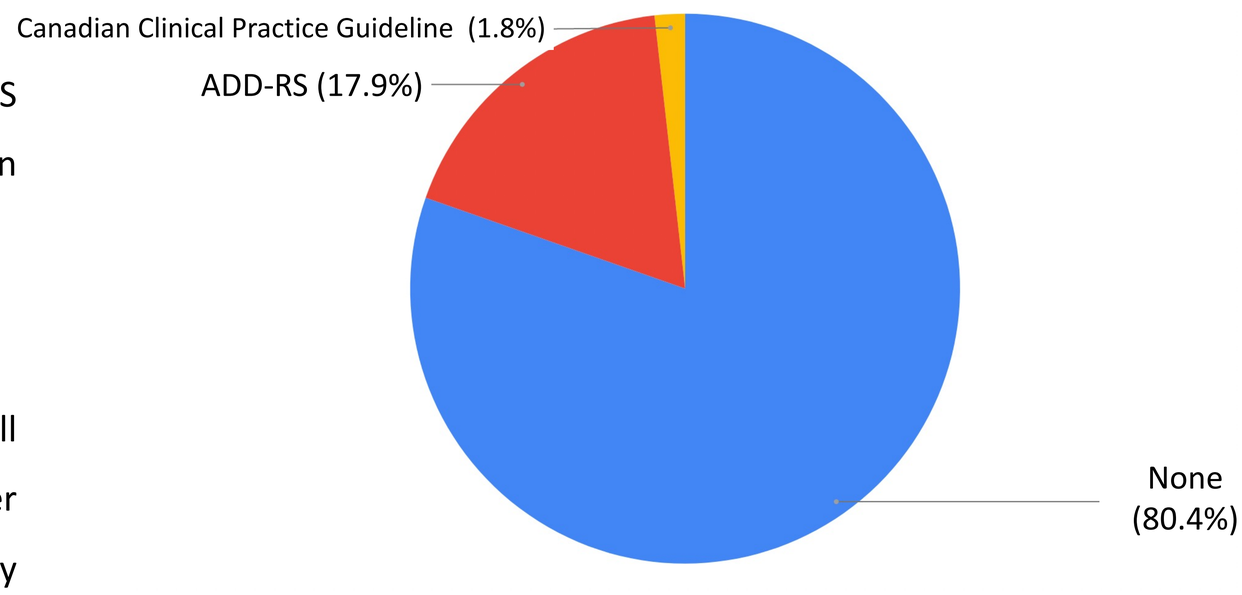


Figure 3: Do you routinely use any of these decision-making tools in your consideration of investigations for acute aortic dissection?



44.7% use D-dimer in some capacity during their work-up, the majority using it outside the context of 'ADD-RS' (or other formal) algorithm. 17.9% use D-dimer in conjunction with ADD-RS.

Median estimated scanning rates for AAS was 1.7 per 1000 ED attendances (n=29 responses).

Median estimated CT positivity rate of 5% scans (n=26 responses) – range of estimates 0.5-20%.

47 EDs were **interested in involvement in further related research.**

Conclusion

This survey has demonstrated variety in approach to this diagnostic challenge across UK EDs, with indication that no diagnostic algorithm has been widely adopted into practice, yet D-dimer is considered to have an important (as yet unstandardised) role. There is an appetite for widespread participation in further research towards improving our diagnostic practice for this important condition.

Reference

1. Nazerian et al. Diagnostic Accuracy of the Aortic Dissection Detection Risk Score Plus D-Dimer for Acute Aortic Syndromes: The ADvISED Prospective Multicenter Study. Circulation 2018; 16; 137(3): 250-258: doi: 10.1161/CIRCULATIONAHA.117.029457. Epub 2017 Oct 13

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