

Correspondence

Response to Letter Regarding Article, “Diagnosis of Acute Aortic Dissection by D-Dimer: The International Registry of Acute Aortic Dissection Substudy on Biomarkers (IRAD-Bio) Experience”

We thank Dr Hugli for his interest in our article. Dr Hugli raises issues that were discussed in the article that may benefit from being readdressed in this response. The most notable issue centers on the pretest probability of acute aortic dissection, which is a prerequisite for the estimation of diagnostic measures and their clinical usefulness. We still do not have a firm understanding of this value because sufficient data are not available (eg, prevalence rates and/or clinical decision rules/tools) to calculate it. Having stated that, however, our study was, to the best of our knowledge, the first to determine the prevalence of acute aortic dissection in patients suspected of having this disease. Our earlier study showed a prevalence of 25%,¹ and the described study was ≈40%.² Because our conditions were limited to tertiary centers that see and treat aortic dissection routinely and thus likely have increased awareness to this disease, we noted that these figures are most likely higher than those that will be seen in the community setting. Thus, we described likelihood ratios rather than predictive values because the latter is affected by prevalence. Dr Hugli’s second issue concerns clinical spectrum. Our study and its findings were based on patients with suspected acute aortic dissection and not chest pain in general; thus, caution is needed in the generalization of our findings beyond the tested parameters of patients with acute aortic dissection presenting to mainly tertiary centers. Furthermore, on the topic of selection and verification bias, results of D-dimer measurements were not made available to the treating physician; therefore, this bias was not applicable to the present study. We disagree with the reasoning that examination of consecutive cases may have caused selection bias but rather assert that this allowed a more unbiased selection process. Although our present findings are limited to the described conditions, we believe that D-dimer is useful at present and that our findings, as an initial step, will help make possible the actual clinical use of D-dimer for acute aortic dissection and provide a diagnostic algorithm to optimize the use of imaging tests in these settings. We expect our findings to serve as a “working hypothesis” to be tested in more general settings such as in patients presenting with chest pain in general and in extension to the community setting (eg, nontertiary centers, healthcare systems) and further in studies that address usefulness of diagnostic strategies that incorporate both biochemical and imaging tests. We envision that a clinical algorithm will be developed that assigns patients to clinical risk groups that will help distinguish between high-risk patients who go directly to imaging and moderate-risk groups and identify lower-risk groups in which D-dimer may emerge as a rule-out screening measure.

Disclosures

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