limitations, were used to establish its clinical role. Actually, FFR had 76% sensitivity and 76% specificity in comparison to imaging studies.

Moreover, there is incomplete correlation between ICUS and FFR, as Takagi et al. reported that differences in ICUS minimal lumen area explain only 62% of the variability in FFR measurements.

Thus, clinical decision can be helped by non-invasive or invasive tests, but most complex decisions still rely on comprehensive clinical judgement. Nonetheless, appropriate supportive diagnostic tools should certainly be encouraged to resolve equivocal or uncertain circumstances.

References


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Enoxaparin and ST elevation myocardial infarction

The ExTRACT-TIMI 25 investigators conclude that enoxaparin is superior to intravenous unfractionated heparin in patients with ST elevation myocardial infarction undergoing fibrinolysis, with either a fibrin-specific agent or streptokinase. Since intravenous unfractionated heparin has not been demonstrated to be superior to placebo in this context, the relevance of this finding to clinical practice is not clear. The investigators cite a review as evidence that unfractionated heparin is efficacious for patients with ST elevation myocardial infarction treated with fibrinolysis and aspirin. In fact, this review concludes with the statement 'Nor is there good evidence that, among patients who are given aspirin and fibrinolytic therapy, the routine addition of either intravenous or subcutaneous heparin produces any worthwhile improvement in outcome'.

The pertinent clinical question is: does the addition of enoxaparin to standard therapy (fibrinolysis plus aspirin) for ST elevation myocardial infarction improve outcome? Unfortunately, this question remains unanswered. We cannot assume that intravenous unfractionated heparin is a surrogate for placebo. The small number of studies that have compared unfractionated heparin with placebo have been underpowered to detect any likely benefit either individually or as part of a meta-analysis. Therefore, whether unfractionated heparin is slightly better or worse than placebo remains unknown. The finding that enoxaparin is marginally superior to unfractionated heparin does not allow us to conclude that it is superior to placebo.

References


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Enoxaparin and ST-elevation myocardial infarction: reply

The current versions of the American College of Cardiology/American Heart Association (ACC/AHA) and European Society of Cardiology (ESC) guidelines recommend the use of unfractionated heparin (UFH) with fibrin-specific lytics (Class I) or streptokinase (Class II). The indication for the combined use of an antithrombin with fibrinolytic therapy is based on the desire to treat the increase in procoagulant activity secondary to thrombin generation associated with lytic administration, higher early patency rates in ST-elevation myocardial infarction (STEMI) patients treated with UFH compared with placebo in angiographic studies, and reduced rates of death and myocardial infarction in a large meta-analysis comparing UFH to placebo with fibrinolysis. In this analysis, a significant reduction (P = 0.03) of five lives per 1000 patients is seen when UFH is used in conjunction with a non-fibrin-specific fibrinolytic in the presence of aspirin.

Our analysis demonstrates a significant reduction of death and non-fatal myocardial infarction in patients receiving fibrinolytic therapy with enoxaparin when compared with UFH regardless of the lytic agent administered. In conjunction with the CREATE trial (reviparin vs. placebo) and the comparison of fondaparinux with placebo in stratum I of the OASIS-6 study (UFH not indicated), our ExTRACT-TIMI 25 analysis emphasizes the importance of adding antithrombin therapy across the spectrum of fibrinolytic therapy currently in use, including streptokinase.

These findings led to the FDA-approved change in the package insert for enoxaparin to include the use of this antithrombin agent in STEMI patients undergoing fibrinolysis.

References