A MODIFIED GOLDMAN RISK SCORE IN COMBINATION WITH HIGH-SENSITIVITY TROPONIN PROVES SUPERIOR TO TIMI IN THE EVALUATION OF SUSPECTED ACUTE CARDIAC CHEST PAIN

Poster Contributions
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Background: A single high-sensitivity Troponin (hsTn) result below the 99th centile value taken at presentation in Emergency Department (ED) patients with suspected cardiac chest pain has sensitivity too low for clinical use. The combination of clinical risk scoring and early hsTn testing improves sensitivity and has been shown to identify a group suitable for early discharge. However recent literature has focussed on the TIMI score, which was originally developed for high-risk ACS cohorts. We hypothesized that a modified Goldman (MG) score designed to identify those without unstable clinical features and validated in a low-risk ED cohort would be superior to the TIMI score in identifying a higher proportion of patients at low risk of Major Adverse Cardiac Events (MACE) and therefore suitable for early discharge after a single hsTn at presentation.

Methods: This prospective observational study was carried out from July 2012 to August 2013 in a UK District ED. Recruitment was undertaken 24/7 and included patients aged 18-79 years who presented with suspected cardiac chest pain and a non-ischemic ECG. Performance of the MG and TIMI scores in combination with a single hsTnT of <14ng/L (99th Centile value) taken at presentation was compared. Follow-up for MACE at 30 days was undertaken from electronic patient or General Practitioner records.

Results: 666 patients with a mean age of 58.1(± 13.1) years were recruited. The overall prevalence of MACE was 13.7%. An hsTnT <14ng/L had a sensitivity of 80.2% (95%CI 70.3-86.6%) for MACE. The sensitivity and specificity of a hsTnT and either a MG ≤1 or TIMI ≤1 for the detection of MACE were 98.9% (93.2-99.9), 48% (43.8-52.2), 96.7% (89-99.1) and 40.6% (36.7-44.8), respectively. There was 1/276 MACE in the MG ≤1 group and 3/234 in the TIMI ≤1 group. An MG Score of ≤1 identified a significantly higher proportion of patients suitable for early discharge when compared to a TIMI score of ≤1: 41.4% compared to 35.1% (P=0.008).

Conclusions: A modified Goldman risk score in combination with a single hsTnT result at presentation safely identifies significantly more patients at very low risk of MACE at 30 days who may be suitable for early discharge when compared to the TIMI score.