A143 - Correlation between central laboratory and point of care measurements of INR in adult intensive care patients

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Introduction:
Early identification of potential participants for enrolment into the SCARLET study [1] (evaluating ART-123 for sepsis associated coagulopathy) was contingent upon identifying a threshold level of coagulopathy (INR>1.40). Point of Care (PoC) devices measuring INR are commercially available but limited validation studies have been conducted for measuring INR values in intensive care patients. We therefore sought to determine whether INR measurements measured using a PoC device correlate with concurrently measured laboratory (LAB) INR values in adult intensive care patients.

Methods:
Using blood already collected for clotting profile measurements as part of clinical management in a convenience sample of adult ICU patients, we concurrently measured INR values using a PoC (Roche CoaguChek Pro II) and LAB (ACLTOP750 Instrumentation Laboratory) devices. The relationship between devices was assessed via correlation, Bland-Altman agreement and diagnostic predictive values.

Results:
In 72 independent paired INR measurements using PoC (range 1.0 - 2.4) and LAB (range 0.9 – 1.4) devices in 37 ICU patients (1 - 4 samples/patient) we determined a Pearson correlation coefficient r = 0.76 and Bland-Altman mean difference (bias) 0.01; 95% limits of agreement 0.33. A PoC INR ≤ 1.2 had a 0.96 negative predictive value for a LAB INR ≥ 1.4 and a PoC INR ≥ 1.3 had a 1.0 positive predictive value for a LAB INR ≥ 1.4.

Conclusion:
PoC device INR measurements correlate relatively well with LAB measurements within this target INR range of interest in adult intensive care patients. The likely value of PoC device INR measurements for future sepsis associated coagulopathy studies requiring a threshold level of coagulopathy would be as a negative predictive tool for screening potential participants.

References:

Image:

Red line - bias (0.01); Blue lines - limits of agreement (0.33)