A meta-analysis of Early Warning Scores in sepsis: Do they predict anything?

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Objectives

Early Warning Scores are used to evaluate patients in many hospital settings. It is not clear if these are accurate in predicting mortality in sepsis. We performed a systematic review and meta-analysis of multiple studies in sepsis. Our aim was to estimate the accuracy of EWS for mortality in this setting.

Methods

PubMed, CINAHL, Cochrane, Web of Science and EMBASE were searched to October 2016. Studies of adults with sepsis who had EWS calculated using any appropriate tool (e.g. NEWS, MEWS) were eligible for inclusion. Study quality was assessed using QUADAS-2. Summary estimates were derived using HSROC analysis.

Results

Six studies (4,298 participants) were included. Results suggest that EWS cannot be used to predict which patients with sepsis will (positive likelihood ratio 1.79, 95% CI 1.53 to 2.11) or will not die (negative likelihood ratio 0.59, 95% CI 0.45 to 0.78). Two studies were rated as low risk of bias and one as unclear risk of bias on all domains. The other three studies were judged at high risk of bias in one domain.

Conclusion

Early Warning Scores are not sufficiently accurate to rule in or rule out mortality in patients with sepsis, based on the evidence available.

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