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Diagnostic Accuracy of Delirium Assessment Tools in Critical Ill Patients: A Systematic Review and Meta-analysis

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Abstract

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Abstract

Aims: To evaluate and compare the diagnostic performance of the confusion assessment method for the intensive care unit (CAM-ICU) and the intensive care delirium screening checklist (ICDSC) in diagnosing delirium in critical ill patients.

Methods: PubMed, Embase, CINAHL databases were searched for studies published in English or Mandarin up to December 2018. The meta-analysis was limited to studies in the ICU settings, used the diagnostic and statistical manual of mental disorders (DSM) as a standard reference to test the diagnostic accuracy of delirium assessment tool. Two investigators independently assessed study eligibility and extracted data. A bivariate random effects meta-analysis models were conducted for pooling and comparing diagnostic performance. The outcomes assessed were pooled sensitivities and specificities, summary receiver operating characteristic curve (sROC), the area under the curve (AUC), and diagnostic odds ratio (DOR). The possibility of publication bias was evaluated using Deek's funnel plot in Stata software.

Results: Of 29 studies met the inclusion criteria of which 23 and 8 focus on CAM-ICU and ICDSC, respectively. The pooled sensitivities of 0.85, 0.87, and pooled specificities of 0.95, 0.91 for CAM-ICU, ICDSC respectively. The AUC of the CAM-ICU was 0.96 (95% CI, 0.94-0.98), with DOR of 99 (95% CI, 55-177). The AUC of the ICDSC was 0.95 (95% CI, 0.92-0.96), and the DOR was 65 (95% CI, 27-153).

Conclusions: Both CAM-ICU and ICDSC performed high accuracy, good sensitivity and excellent specificity. However, the CAM-ICU demonstrated a better diagnostic accuracy and is recommended for the most specific and comprehensive delirium assessment tool.

Keywords: delirium; critical care; intensive care unit; CAM-ICU; ICDSC