




The diagnostic accuracy of presepsin in neonatal sepsis: a meta-analysis

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Abstract

There is growing evidence that presepsin is a promising biomarker in the diagnosis of sepsis in adults. The objective of our study is to investigate current evidence related to the diagnostic accuracy of presepsin in neonatal sepsis. To accomplish this, we searched the Medline (1966–2017), Scopus (2004–2017), Clinicaltrials.gov (2008–2017), EMBASE (1980–2017), Cochrane Central Register of Controlled Trials CENTRAL (1999–2017), and Google Scholar (2004–2017) databases. Eleven studies were included in the present meta-analysis, with a total number of 783 neonates. The pooled sensitivity of serum presepsin for the prediction of neonatal sepsis was 0.91 (95% CI [0.87–0.93]) and the pooled specificity was 0.91 (95% CI [0.88–0.94]). The diagnostic odds ratio was 170.28 (95% CI [51.13–567.11]) and the area under the curve (AUC) was 0.9751 (SE 0.0117). Head-to-head comparison with AUC values of C-reactive protein (0.9748 vs. 0.8580) and procalcitonin (0.9596 vs. 0.7831) revealed that presepsin was more sensitive in detecting neonatal sepsis.

Conclusion: Current evidence support the use of presepsin in the early neonatal period in high-risk populations as its diagnostic accuracy seems to be high in detecting neonatal sepsis.

What is known:

- Neonatal sepsis is a leading cause of morbidity and mortality.
- Current laboratory tests cannot accurately discriminate endangered neonates.

What is new:

- The diagnostic odds ratio of presepsin is 170.28 and the area under the curve is 0.9751.
- According to our meta-analysis, presepsin is a useful protein that may help clinicians identify neonates at risk.

«Диагностическая точность пресепсина при неонатальном сепсисе: мета-анализ».

Мета-анализ результатов 11 исследований, включавших 783 новорожденных.

Чувствительность ПСП для предсказания неонатального сепсиса - 0.91 (95% CI [0.87–0.93]),

Специфичность ПСП для предсказания неонатального сепсиса - 0.91 (95% CI [0.88–0.94]).

AUC ROC ПСП - 0.9751.

При сравнении AUC ROC ПСП и СРБ - 0.9748 против 0.8580

При сравнении AUC ROC ПСП и ПКТ - 0.9596 против 0.7831.

«ПСП более точный маркер для раннего выявления неонатального сепсиса».