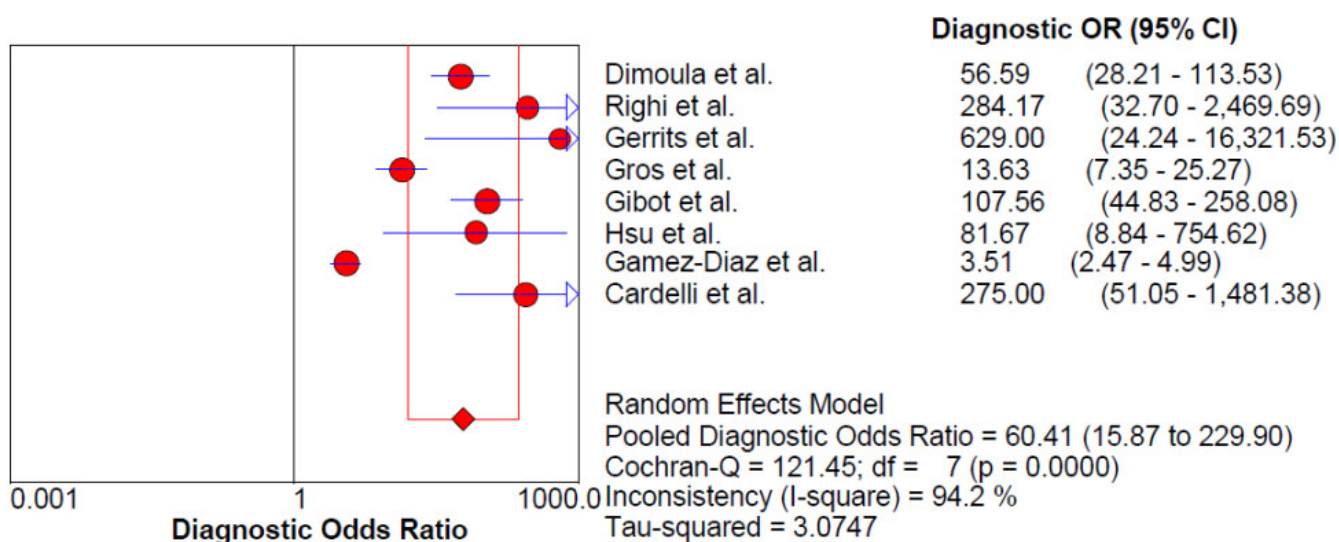


CD64 as a sepsis marker

Sepsis is the most common cause of mortality in critically ill patients worldwide. Despite with huge costs, it is difficult to treat sepsis. Early diagnosis sepsis and timely treatment are vital to improving outcomes and lightening the financial burden for patients. Microbiological culture is a gold standard for distinguishing sepsis from non-infectious conditions. However, incubation of bacteria may take a long time, and blood culture always has poor sensitivity. Thus, there is an urgent need of a biomarker that can identify sepsis in an early stage so that timely and appropriate use of antibiotics can be initiated.



CD64 is one of the immunoglobulin receptors expressed on monocytes and eosinophils. CD64 expression is low on resting neutrophils, and it is rapidly deregulated after activation by bacteria. When the bacteria are removed, neutrophil CD64 (nCD64) expression will dramatically decrease within 48 hours and be back to normal levels within 7 days. Therefore, nCD64 is a vital candidate marker for bacterial infections and sepsis. Recently, an increasing number of studies have been performed to investigate the role of neutrophil CD64 (nCD64) expression in the diagnosis of bacterial infection and sepsis. However, these studies had limited numbers of patients and conflicting results. Thus, no firm conclusions could be drawn. So this study aimed to synthesize all published studies to investigate the role of nCD64 for sepsis diagnosis.

The major databases of medicine had been searched. Ultimately, eight studies fulfilled all eligibility criteria and were included in the final pooled analysis. The DOR is the ratio of the odds of a positive

result in a patient with sepsis compared with a patient without sepsis. The value of the DOR ranges from 0 to infinity, with higher values indicating greater diagnostic accuracy. In the included studies, the DOR ranged from 3.51 to 629.00, and the pooled DOR was 60.41, indicating a high level of overall accuracy. The area under the SROC curve was 0.95, the Q^* value was 0.89, also indicating a high level of overall accuracy. However, nCD64 expression is not sufficient to correctly distinguish all patients with sepsis from critically ill patients. It must be interpreted in combination with medical history, physical examination, and other test results. Before the CD64 test is widely used in the clinical setting, we need further larger, multicenter studies to confirm its predictive value.

Publication

[Neutrophil CD64 expression as a diagnostic marker for sepsis in adult patients: a meta-analysis.](#)

Wang X, Li ZY, Zeng L, Zhang AQ, Pan W, Gu W, Jiang JX.

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