

PROCALCITONIN FOR DETECTION OF SERIOUS BACTERIAL INFECTIONS IN CHILDREN AGED 1 TO 36 MONTHS PRESENTING WITH FEVER WITHOUT SOURCE - A SYSTEMIC REVIEW AND META-ANALYSIS

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Procalcitonin has been recently used to help clinicians to early identify young children at risk of severe bacterial infection (SBI) among those presented with fever without source (FWS). We performed a systemic review and meta-analysis to assess the diagnostic accuracy of procalcitonin in this particular condition. We also compared the relative diagnostic accuracy between procalcitonin and CRP or leukocyte count.

Methods: MEDLINE, EMBASE, and Cochrane databases were searched. The inclusion criteria include age range between 7 days and 36 months, study patients initially presented with FWS, SBI is one of the...

Results: Ten studies were included (2152 patients) for PCT analysis, eight studies (1795 patients) were included for CRP analysis, and eight studies (1960 patients) were included for leukocyte analysis. Raised procalcitonin levels (odds ratio (OR) 17.1; 95% confidence interval (CI) 8.8 to 33.3) was significantly associated with SBI, so was raised CRP levels (OR 10.3; 95% CI 7.8 to 13.5), and leukocytosis (OR 4.0; 95% CI 3.1 to 5.1). Random effect model was used for PCT and leukocyte analysis because heterogeneity across studies existed. Overall sensitivity was 0.84 (0.74-0.91) for procalcitonin, 0.75 (0.67-0.80) for CRP, and 0.58 (0.46-0.68) for leukocyte count. Overall specificity was 0.74 (0.61-0.84) for procalcitonin, 0.77 (0.72-0.81) for CRP, and 0.74 (0.67-0.79) for leukocyte count.

Conclusions: Of three markers for diagnosis of SBI among young children with FWS, procalcitonin has the best sensitivity followed by CRP, and leukocyte count. The results of this meta-analysis may have important clinical implications in the management of children with FWS.