

Application of PCT, CRP and WBC levels in the differential diagnosis of acute bacterial, viral, and mycoplasmal respiratory tract infections

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Abstract

Objective There is a lack of studies comparing Procalcitonin (PCT), C-reactive protein (CRP) and white blood cell (WBC) levels in the differential diagnosis of acute bacterial, viral, and mycoplasmal respiratory infections. It is necessary to explore the correlation between above markers and different types of acute respiratory tract infections (ARTI). **Methods** 108 children with confirmed bacterial infection were regarded as group A, 116 children with virus infection were regarded as group B, and 122 children with mycoplasma infection were regarded as group C. The levels of PCT, CRP and WBC of the three groups were detected and compared. **Results** The levels of PCT, CRP and WBC in group A were significantly higher than those in groups B and C ($P < 0.05$). The positive rate of combined detection of PCT, CRP and WBC was significantly higher than that of single detection. There was no significant difference of PCT, CRP and WBC levels between the group of Gram-positive (G+) bacteria infection and Gram-negative (G-) bacteria infection ($P > 0.05$). ROC curve results showed that the area under the curve (AUC) of PCT, CRP and WBC for the diagnosis of bacterial respiratory infections were 0.65, 0.55, and 0.58, respectively. **Conclusions** PCT, CRP and WBC can be used as effective indicators for the identification of acute bacterial or no-bacterial infections in children. The levels of PCT and CRP have higher differential diagnostic value than that of WBC in infection, and the combined examination of the three is more valuable in clinic.

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