Can haematological parameters and ratios aid in the discrimination of paediatric tuberculosis?

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The clinical presentation of tuberculosis (TB) in children can be highly variable, which, combined with the challenges in obtaining biological samples, significantly impacts diagnosis and treatment. Given the haematological manifestations of TB infection, such as thrombocytosis and anaemia, there is increasing interest in utilizing simple blood count parameters (e.g., platelets PLT, leucocytes LEU, erythrocytes ERY, haemoglobin, and mean platelet volume - MPV) along with their ratios (e.g., neutrophil to lymphocyte ratio - NLR, monocyte to lymphocyte ratio - MLR, and platelet to lymphocyte ratio - PLR) to aid in diagnosing and predicting the prognosis of children with TB, and to differentiate between active and latent forms. Previous studies showed their diagnostic potential given their key role in inflammatory responses and during infections.

This retrospective study involved 230 paediatric participants hospitalized between 2023 and 2024 at the Clinic of Children Tuberculosis and Respiratory Diseases. Among them, 126 had active TB, 42 latent TB, and 62 were healthy controls. Significant differences in blood parameters were found between these groups and additionally, after subdividing the active TB group into patients with positive and negative TB culture/PCR diagnosis, one from each other differed in counts of ERY, PLT, MPV, LEU, lymphocytes, monocytes, and haemoglobin.

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