

Abstract from Current Literature

Neonatal and Maternal 25-OH Vitamin D Serum Levels in Neonates with Early-Onset Sepsis.

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Vitamin D is a fat-soluble vitamin that is important for calcium metabolism and plays an important role in the immune functions. The aim of this study was to measure neonatal and maternal 25-OH vitamin D serum levels in neonates with early onset sepsis. The study included fifty neonates with early onset sepsis (25 full-term and 25 preterm infants) and thirty age and sex matched healthy neonates as controls. After history taking and clinical examination, complete blood count, C-reactive protein and 25-OH vitamin D serum levels (neonatal and maternal) were measured for all neonates. The mean gestational age for neonates with sepsis was (37.5 ± 0.98 for full term and 34.1 ± 1.26 for preterm neonates). Neonatal and maternal 25-OH vitamin D serum levels were significantly lower in patients (6.4 ± 1.8 and 24.6 ± 2.2 nmol/L) than controls (42.5 ± 20.7 and 50.4 ± 21.4 nmol/L). Significant negative correlations between neonatal and maternal 25-OH vitamin D serum levels and all sepsis markers and significant positive correlations between neonatal and maternal 25-OH vitamin D levels were present. At cut-off values <20 nmol/L for neonatal and <42 nmol/L for maternal 25-OH vitamin D for detection of neonatal sepsis, the sensitivity, specificity, positive predicted value (PPV) and negative predicted value (NPV) were 84%, 79%, 94.7% and 82.3% for neonatal and 82%, 77%, 91.4% and 80.6% for maternal 25-OH vitamin D, respectively. Positive correlations between neonatal and maternal 25-OH Vitamin D serum levels are present and they are negatively correlated with all sepsis markers. They can be sensitive early predictors for early onset sepsis in neonates.

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MRI in Thoracic Tuberculosis of Children

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Objective: To explore the utility of lung magnetic resonance imaging (MRI) in children with thoracic tuberculosis (TB).

Methods: This prospective study of forty children (age range of 5 to 15 y) with thoracic TB was approved by the institutional ethics committee. Chest radiograph, lung MRI and computed tomography (CT) scan were performed in all children. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) of MRI were calculated and kappa test of agreement was used to determine the strength of agreement between the MRI and CT findings.

Results: MRI performed equivalent to CT scan in detection of mediastinal and hilar lymphadenopathy, pleural effusion and lung cavitation (considered typical for TB) with sensitivity and specificity of 100%. MRI also yielded a sensitivity of 88.2% and specificity of 95.7% for nodules, with sensitivity of 100% and specificity of 92.9% for consolidation. Kappa agreement between CT and MRI in detection of each finding was almost perfect ($k: 0.8-1$).

Conclusions: Although CT scan is still superior to MRI in detection of smaller nodules, MRI demonstrates a very high degree of correlation and agreement with CT scan for detecting lung and mediastinal pathology related to TB, in children with thoracic TB and can be particularly useful in select population and follow-up of these children to avoid repeated radiation exposures.

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