Abstract from Current Literatures

Neurological manifestations due to dengue virus infection in children: clinical follow-up

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The aim was to assess neurological complications in children with an invasive neurological disease by dengue virus (DENV) and the time to resolve symptoms after hospital discharge. A prospective study was conducted at a referral hospital for infectious diseases in Brazil between March 2014 and July 2019. All children hospitalized with neurologic manifestations and DENV RNA detected by real-time reverse transcription-polymerase chain reaction (RT-qPCR) in cerebrospinal fluid (CSF) were followed up until complete resolution of neurological complications. On average, they were followed up for 16 months. Among 56 DENV-positive children, 39% had some neurologic complications after hospital discharge and found that 19.6% were discharged with anticonvulsants due to seizures, 10.7% developed motor complications (e.g. muscle weakness, paresis, ataxia, and walking disability), 5.4% had headaches, and 14.3% had sleep disorders. Among the 56 children, only three had a clinical diagnosis of dengue because the symptoms are nonspecific and 35% showed no change in cerebrospinal fluid (CSF). The average time to resolve complications was 5.9 months (ranging from 1 m to 32 m). These results should alert physicians to the difficulties of a clinical diagnosis of an infection that causes neurological complications after discharge in a significant number of children. RT-qPCR's etiological diagnosis of DENV infection enabled better clinical follow-up for early intervention in children with neurological complications.

Keywords: Dengue virus; children; encephalitis; meningitis; myelitis; neurologic complication.

Serum Ferritin as a Diagnostic Biomarker for Severity of Childhood Sepsis

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Objective: To explore association between serum ferritin and severity of sepsis among children, and relate levels to the final outcome.

Methods: This observational study was conducted in a tertiary care hospital between I February and 30 July, 2019. Serum ferritin level was estimated in children (age 6 months to 12 years) suffering from sepsis, irrespective of the probable etiology. Children with hemoglobinopathies, autoimmune diseases, previous blood transfusion, severe acute malnutrition, hemophagocytic lymphohistiocytosis and chronic hepatitis were excluded. The ferritin level was measured sequentially at pre-defined stages of illness viz., sepsis, severe sepsis, septic shock and multiorgan dysfunction syndrome (MODS). Association between serum ferritin and severity of sepsis was analyzed, and ferritin level was related to the final outcome of death or recovery by receiver operating characteristic (ROC) curve analysis.

Results: The study group included 47 children with sepsis who progressed to a state of MODS; 32 recovered from MODS. Significant differences in serum ferritin level were observed with severity of sepsis. There was clear demarcation of ferritin levels between sepsis severity stages. The proportion of death among the 47 MODS cases was 31.9% (95% CI 18.6 – 45.2%). ROC analysis in the MODS group indicated that serum ferritin >1994.3 ng/mL predicts mortality (AUC 0.73 [95% CI 0.58-0.85]) with sensitivity 66.7% [95% CI 38.4-88%] and specificity 100.0% [95% CI 89.1-100%].

Conclusions: There is clear demarcation of serum ferritin levels that can help differentiation of sepsis severity stages in children with sepsis. There is no such demarcation between survivors and non-survivors in MODS cases.

Safety and efficacy of eltrombopag in the treatment of children with immune thrombocytopenia: a Meta analysis

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Objectives: To systematically assess the efficacy and safety of eltrombopag in the treatment of children with immune thrombocytopenia (ITP).

Methods: PubMed, Embase, Cochrane Library, Weipu Data, CNKI, and Wanfang Data were searched for studies on eltrombopag used for the treatment of children with ITP. RevMan 5.3 and R version 3.6 were used to perform a Meta analysis of included studies.

Results: A total of 11 studies were included, with 2 randomized controlled trials and 9 cohort studies. The Meta analysis of the 9 cohort studies showed that eltrombopag had a response rate of about 70% (95%CI: 65%-76%) in the treatment of children with ITP, with no serious adverse events. The Meta analysis of the randomized controlled trials showed that the eltrombopag group had a higher response rate than the placebo group (RR=2.64, 95%CI: 1.58-4.44, P<0.05), while there was no significant difference in the incidence rates of adverse events and serious adverse events between the two groups (P>0.05).

Conclusions: Eltrombopag has good efficacy and safety as a second-line treatment regimen for children with ITP.