



A SYSTEMATIC REVIEW ON TREATMENT MODALITIES FOR MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN (JANUARY 2020 TO AUGUST 2021)

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INTRODUCTION:

Clinical features of COVID-19 in children are generally milder as compared to adults, however, cases are being reported with severe courses requiring intensive care. These children present with a hyperinflammatory syndrome similar to Kawasaki disease, associated with SARS COV 2 infection. We aimed to summarize the recent evidences regarding treatment of this disease, ultimately to reduce morbidity and mortality.

OBJECTIVES:

This systematic review aims to present the clinical features, pathogenesis and current treatment options for effective management of MIS-C.

METHODOLOGY:

Cohort, case-control, cross-sectional, case reports and clinical trials (randomized/non-randomized) studies were included. Studies included are those who fulfilled the case definition of MIS-C according to CDC, and tested positive for COVID-19 RT-PCR.

RESULTS:

A total of 1206 records were identified through various databases and were screened for eligibility. A total of 45 studies were included in this review. Most of the management were based on the guidelines by the ACR, using IVIG as the first line treatment, with adjunct IV glucocorticoids in more severe cases. Anti-thrombotic therapy with Aspirin is also recommended if without contraindications.

CONCLUSIONS AND RECOMMENDATIONS:

Conclusions and Recommendations: The use of IVIG at 2g/kg is recommended to treat patients who fulfill the criteria for MIS-C. IV glucocorticoids are given in addition to IVIG in cases with refractory shock, persistent fever or elevated inflammatory markers. The use of low dose aspirin at 3-5 mg/kg/day is also recommended for patients with thrombocytosis (platelet count >450,000 u/L). Additional studies regarding the use of second dose IVIG or IVIG with IV steroids as initial treatment is still recommended to further evaluate effectiveness. The use of alternative therapies, including Anakinra, Infliximab and Tocilizumab, to patients refractory to IVIG and steroid therapy revealed favorable outcome in some sources, but still warrants additional studies to prove safety and effectiveness. Future studies on patient follow up is recommended to document possible long term complications and prognosis.

KEYWORDS: COVID-19, Multisystem inflammatory syndrome in children (MIS-C), Kawasaki disease, Toxic Shock syndrome, Macrophage activation syndrome (MAS), IVIG, Anakinra, Methylprednisolone