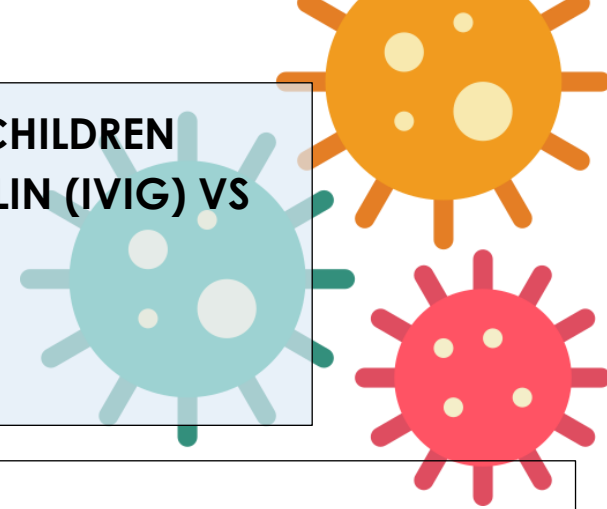




OUTCOME OF MULTI-SYSTEM INFLAMMATORY SYNDROME IN CHILDREN FOLLOWING ADMINISTRATION OF INTRAVENOUS IMMUNOGLOBULIN (IVIG) VS IVIG AND STEROIDS: A META-ANALYSIS

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Introduction

Multi-system inflammatory syndrome in children (MIS-C) is a life-threatening hyperinflammatory complication of COVID-19 infection in children. It has been associated with persistent IgG antibodies, cytopenia, and greater activation of CD8+ T cells. Thus, immunomodulating therapies, such as corticosteroids and IVIG, have been advocated in the treatment of MIS-C

Objectives

- To compare the outcome of patients with MIS-C after treatment with corticosteroids and IVIg versus IVIg alone in terms of:
 - Treatment failure
 - Presence of cardiovascular dysfunction
 - Receipt of adjunctive immunomodulatory therapy
 - Length of hospital stay and in the intensive care unit (ICU).

Methods

A systematic review and meta-analysis of studies published between May 2020 to May 2022 was done to evaluate the use of IVIG versus IVIG and steroids in children with MIS-C. Odds ratio and Forest plot were generated to interpret the outcomes of interest. A p value <0.05 was deemed statistically significant.

Results

Five studies were included in the meta-analysis. There was a significantly lower risk of treatment failure (OR=0.58, 95%CI=0.43 to 0.77, p-value=0.0002) and need of adjunctive therapy (OR=0.27, 95%CI=0.20 to 0.37, p-value<0.00001) among patients who received both IVIg and corticosteroids. However, there was no significance reduction in the need of inotropes in patients who received the combination therapy (OR=1.07, 95%CI=0.54 to 2.11, p-value=0.84).

The length of hospital stay was significantly longer among patients who received both IVIg and corticosteroids (MD=1.00, 95%CI=0.19 to 1.82, p-value=0.02). Lastly, there was no significant difference in the length of ICU stay between the two groups. (MD=-1.07, 95%CI=-2.73 to 0.59, p-value=0.21).

Conclusion

This study recommends the use of combination therapy with intravenous immunoglobulin and corticosteroids as first-line of treatment in children with MIS-C due to lower risk of treatment failure and need for adjunctive therapy.

Keywords: *Corticosteroids, COVID-19, Intravenous immunoglobulin (IVIg), Multi-system inflammatory syndrome in children (MIS-C)*

