



# A META-ANALYSIS ON PLASMA EXCHANGE VERSUS INTRAVENOUS IMMUNOGLOBULIN IN CHILDREN WITH GUILLAIN-BARRE SYNDROME

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## Introduction:

Guillain-Barre syndrome (GBS) is a rare autoimmune disorder, wherein the body's immune system attacks healthy nerve cells of the peripheral nervous system. Immunotherapy with either plasma exchange or intravenous immunoglobulin (IVIg) has been proven to be effective. However, lack of homogeneity on the disease presentation and course of GBS result to varied treatment results.

## Objectives:

- 1) To compare the length of Intensive Care Unit (ICU) stay between patients who received IVIg and those who underwent plasma exchange.
- 2) To compare the duration of mechanical ventilation between patients who received IVIg and those who underwent plasma exchange.

## Methodology:

A meta-analysis using randomized controlled trials which compared the effectiveness of IVIg with plasma exchange for pediatric GBS published up to 2020. A database search using The Cochrane Library, PubMed®, Medline, Embase, and Google Scholar, was done by the investigators. Pooled estimates of Risk Ratio for quit rates was computed using DerSimonian and Laird random-effects model.

## Results:

Two randomized controlled trials with medium methodologic quality are included. Pooled mean difference showed shorter ICU stay in patients who received IVIg (MD=-1.47, 95% CI = -7.33 to 4.39) and shorter Mechanical Ventilator duration. However, the observed difference was not significant (p-value = 0.62 and 0.65, respectively). Moreover, the studies had high heterogeneity (I<sup>2</sup>= 96-99%).

## Conclusions:

The results of the meta-analysis showed insufficient evidence that IVIg is superior to plasma exchange in the management of GBS among children. Given the conflicting findings from limited studies, further randomized trials with larger sample size are recommended to validate the results of this meta-analysis.

## Keywords:

Guillain Barré syndrome, intravenous immunoglobulin, plasma exchange, intensive care unit, mechanical ventilation