

## ABSTRACT

**Background:** Nephrotic Syndrome (NS) is a common kidney disease in children, marked by edema, proteinuria, hypoalbuminemia, and hyperlipidemia, with complications such as infections and growth delays, especially during prolonged corticosteroid therapy. Corticosteroids, the primary treatment, can impair bone mineral composition (BMC) by disrupting bone metabolism. This study examines the effects of corticosteroid treatment on BMC in children with NS using bioimpedance analysis (BIA), providing insights to enhance care and reduce adverse outcomes.

**Aim:** This study aims to explore the impact of corticosteroid treatment on bone mineral composition in children with nephrotic syndrome, measured using bioimpedance analysis.

**Materials and Methods:** The study uses a cross-sectional method, using data obtained from the nephrotic syndrome registry and patient medical records at Dr. Sardjito General Hospital. The subject involved 96 patients with NS who had already been treated with corticosteroids. The relationship between corticosteroid treatment duration and BMC was analyzed using the Pearson test.

**Result:** The study demonstrated no significant relationship between corticosteroid treatment duration and BMC ( $r = -0.062$ ,  $p = 0.547$ ,  $CI = -0.259 - 0.140$ ). Instead, the findings indicate that BMC is more significantly influenced by other factors, particularly age and height, which showed a stronger association. Furthermore, unmeasured variables such as nutritional status, genetic predisposition, and pubertal development likely contribute to BMC variation, potentially obscuring the impact of corticosteroid therapy duration within the scope of this research.

**Conclusion:** There is a weak, statistically insignificant negative correlation between corticosteroid treatment duration and BMC. However, this study serves as a preliminary study for future research, providing a foundation to further explore this relationship by considering factors such as age, weight, height, and other contributors to BMC in children with nephrotic syndrome.

**Keyword:** Corticosteroid treatment duration, BMC