

Relevance. This study on post-streptococcal glomerulonephritis is highly relevant due to its impact on pediatric nephrology, public health, and clinical management. It remains a significant cause of acute kidney injury in children, especially in resource-limited settings, and this study provides essential epidemiological data on its prevalence, clinical presentation, and outcomes. By identifying key risk factors such as severe hypertension, elevated serum creatinine, and low C3 levels, it facilitates early recognition of high-risk cases, enabling timely intervention and reducing complications. **The aim of the study:** the primary objectives of this study were to assess the clinical presentation, risk factors, and laboratory findings of children and evaluate the prevalence of severe complications, such as hypertensive encephalopathy, pulmonary edema, and heart failure and determine short-term and long-term renal outcomes, including persistent hypertension and provide recommendations for early diagnosis, effective management, and follow-up strategies to improve clinical outcomes in children.

Materials and methods. This retrospective cohort study analyzed medical records of two hundred fifty children diagnosed with post-streptococcal glomerulonephritis at a tertiary pediatric hospital between 2022 and 2024. 2–15 years children were confirmed through clinical, laboratory, and histopathological findings, and evidence of prior group A streptococcal infection were included, while those with pre-existing chronic kidney disease, congenital renal anomalies, or other glomerular diseases were excluded. Data collection focused on clinical features (hematuria, proteinuria, edema, hypertension, acute kidney injury), laboratory investigations (serum creatinine, complement levels, urinalysis), complications (seizures, pulmonary edema, hypertensive encephalopathy, congestive heart failure), and treatment approaches (fluid restriction, antihypertensives, diuretics, dialysis if needed). Outcome measures included hospital stay duration, recovery time, mortality, and long-term risks like hypertension. Statistical analysis involved descriptive statistics to summarize patient characteristics, chi-square tests to assess risk factors for severe PSGN, and multivariate logistic regression to identify predictors of complications, with significance set at $p < 0.05$.

Results. Among 250 patients with a mean age of 7.6 ± 2.8 years and a male-to-female ratio of 1.4:1, 68% had preceding pharyngitis and 32% had impetigo. The most common clinical findings included hematuria (94%), proteinuria (72%), edema (76%), hypertension (65%), and acute kidney injury (30%), while severe complications such as encephalopathy and heart failure occurred in 8% of cases. The mean hospital stay was 8.4 ± 3.1 days, 6.8% requiring dialysis, 12% needing ICU admission, and a mortality rate of 1.2%. Notable complications included hypertensive encephalopathy (5%), pulmonary edema (6%), congestive heart failure (4%), and dialysis-dependent AKI (7%). At a six-month follow-up, 12% had persistent hypertension, 8% had residual proteinuria, and 4% developed chronic kidney disease (Stage 2-3). Multivariate analysis identified severe hypertension (OR 3.2, $p < 0.01$), elevated serum creatinine > 1.5 mg/dL (OR 2.8, $p < 0.01$), and low C3 levels < 50 mg/dL (OR 2.1, $p = 0.02$) as significant risk factors for severe disease.

Conclusion. This study highlights that post-streptococcal glomerulonephritis remains a significant cause of acute kidney injury in children, with hypertension, hematuria, and edema being the most common clinical features. Risk factors for severe disease included severe hypertension, elevated serum creatinine, and low C3 levels. Clinically, early diagnosis and aggressive blood pressure control are essential to preventing complications, and long-term monitoring is necessary to detect and manage persistent

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POST-STREPTOCOCCAL GLOMERULAR IN CHILDREN: CLINICAL OUTCOMES AND RISK FACTORS

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hypertension. Public health strategies, such as improved hygiene and early antibiotic treatment, may help prevent in endemic regions. Overall, this study underscores the importance of early intervention, effective management, and follow-up care to improve outcomes in affected children.

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