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Research paper 26

Significance of karyorrhexis in children with post-infectious glomerulonephritis

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Introduction and objectives: Post infectious glomerulonephritis (PIGN) is the commonest cause of acute nephritis among children and is self-limiting. Complications such as, increasing serum creatinine (SC) and prolonged disease course are indicators for biopsy. The study objective was to correlate the degree of proteinuria and SC with histological features of complications namely karyorrhexis and crescents among children with PIGN.

Methodology: This was a retrospective study of 34 children with a pathological diagnosis of PIGN, based on light microscopy and immunofluorescence, at the Paediatric Renal Unit, Teaching Hospital Peradeniya from 2021 to 2023. Histological groups were identified as, uncomplicated PIGN (A), PIGN with karyorrhexis alone (B) and PIGN with crescents, with or without karyorrhexis (C) and compared with the mentioned biochemical parameters.

Results: Group A, B and C included 9, 13 and 12 cases with a mean age of 7.8 ,8.6 and 8.5 years respectively. Male: female ratios were 8:1, 3.3:1 and 4:1 respectively. The clinical features were as follows: Group A - nephrotic range proteinuria (NRP) (5/9; 55.5%), hypertension (3/9; 33.3%), rising SC (2/9; 22.2%), Group B - NRP (4/13; 30.7%), hypertension (5/13; 38.4%), rising SC (2/13; 15.2%), Group C - NRP (8/12; 66.6%), hypertension (4/12; 33.3%), rising SC (6/12; 50%). Mean SC levels of groups A, B and C were 86.4 □mol/L, 147.76 □mol/L and 143.3□mol/L respectively. There was a statistically significant difference in the mean serum creatinine levels between groups A and C (p=0.018) but not groups B and C (p=0.947)

Discussion and conclusion: NRP and hypertension were present in all histological groups without significant differences. In both histologically complicated groups, the mean SC was higher than in the uncomplicated group. A statistical significance was reached between groups A and C but not groups B and C. According to current management protocols PIGN with crescents is treated vigorously, but not PIGN with karyorrhexis alone. Further studies are suggested to investigate whether karyorrhexis without crescents too is clinically significant**.**

Keywords: haematuria, post infectious glomerulonephritis, acute kidney injury, crescents, karyorrhexis

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