

SUMMARY

The Curative Effect of Low Molecular Weight Heparins on Histopathological Score of Focal Segmental Glomerulosclerosis Model

Focal segmental glomerulosclerosis (FSGS) is one of the major causes of end-stage renal failure in children. The response of patients with FSGS to corticosteroids and other immunosuppressive therapies is poor. There is a need of a new, efficient therapeutic agent with limited adverse effects in FSGS. The aim of this study was to investigate the histopathological and clinical efficacy of low-molecular weight heparin in rats with experimentally-induced FSGS.

The study consisted of 4 groups. Group ADR received adriamycin 7,5 mg/kg, group PADR received corticosteroids for 15 days two weeks after adriamycin administration, group HADR received low molecular weight heparin (fraxiparine sodium, 2 mg/kg/day, 15 days) two weeks after adriamycin administration and a control group involving healthy rats. Serum creatinine, urea, protein, albumin, trygliceride, cholesterol and daily urinary protein and creatinine were studied on days 0, 16 and 31. At day 31, all rats were sacrificed and histopathological study of renal tissues was performed. Differences of the groups were established by univariate analysis, comparisons according to time by multivariate analysis and histopathological data by Pearson chi-square exact test. Data were presented as mean \pm standard deviation; $p < 0.05$ was accepted as significant.

The growth and nutrition of rats were negatively affected and renal functions were preserved after administration of adriamycin. Signs of nephrotic syndrome as proteinuria, hypoalbuminemia and hyperlipidemia were observed at day 15. Likewise, histopathological examination revealed glomerular necrosis and congestion, enlargement of Bowman capsule,

tubular necrosis, degeneration and enhancement, and mesangial collagen deposition; glomerular sclerosis and interstitial fibrosis were not seen.

During the treatment period with low molecular weight heparin proteinuria, hypoalbuminemia and hyperlipidemia were not improved. However, in HADR and PADR groups glomerular necrosis and congestion, enlargement of Bowman capsule, tubular necrosis, degeneration and enhancement, and mesangial collagen deposition were similar to healthy control group.

We conclude that low molecular weight heparin is beneficial on the histopathology of adriamycin-induced nephropathy.