

RENAL FUNCTION AND FLUORIDE LEVELS IN SERUM AND KIDNEYS OF UNILATERAL URETERAL OBSTRUCTION MODELS USING RATS ADMINISTERED FLUORIDE VIA DRINKING WATER

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SUMMARY:In our previous study, a model of impaired renal function with tubulointerstitial fibrosis was induced in rats by unilateral ureteral obstruction (UUO) and exacerbated by the administration of fluoride (F). In this study, we determined the levels of BUN and creatinine in the serum and the F levels in the serum and kidneys. Rats were treated with a left UUO or underwent a sham operation. F was administered, in the drinking water for 2 weeks, to the UUO rats at 0, 75, and 150 ppm and to the sham rats at 0 and 150 ppm. Blood from the tail artery was sampled on days 3, 7, 10, and 14. The BUN, serum creatinine, and F in the serum and the kidneys were determined. The mean body weights in the 150 ppm UUO rats were significantly lower than those of the controls over the observation period. There were no significant differences in BUN or serum creatinine among the UUO groups. The mean BUN in the F sham rats was significantly higher than that of the controls on day 10. The serum F was significantly higher in the UUO rats exposed to 75 ppm and 150 ppm and the F sham rats than the respective controls. The F levels in both the UUO kidneys and the non-obstructed contralateral kidneys from the UUO rats exposed to F were slightly higher than those in the controls. The tubulointerstitial fibrosis, exacerbated by F, in the UUO rats was not closely related to BUN, serum creatinine, or the F levels in the kidneys.

Keywords: BUN; Creatinine; Fluoride; Rats; Renal function; Unilateral ureteral obstruction.

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