Tubular Functions in Lupus Nephropathy

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Dear Sir,

We were most interested in the findings reported by Yeung et al. in your journal [1]. We had the opportunity to study the tubular functions of 37 SLE patients with histologically proven lupus nephritis and whose creatinine clearance was above 70 ml/min. The tests consisted of (1) renal response 3 and 4 h after an ammonium chloride load; (2) 2-hour PSP excretion test and (3) concentration ability following a 14-hour fasting period and 5 units of intramuscular pitressin. The results were compared to 40 normal individuals matched for age and sex. The patient group was further subdivided into two groups according to the severity of glomerular lesions and their tubular functions compared. Finally, 20 patients had their tubular function tests repeated 5–33 months after treatment (mean 19.5 months).

restriction in the SLE group (715 mOsm/kg) was significantly less than that of the control group (948 mOsm/kg; $p < 0.001$). 21 patients (70%) out of 31 patients tested were unable to concentrate their urine to 800 mOsm/kg or more (the lower limit of normal in our laboratory).

No significant difference was noted between the renal response to ammonium chloride load in patients with mild glomerular lesions (i.e. minimal change and mesangial) and those with moderate glomerular lesions (focal and diffuse proliferative, membranous). Significant difference occurred between the maximum urine concentration between these two groups ($p < 0.02$).

20 patients had their tubular function retested after variable periods of treatment. Although 15 patients showed an improving trend, mean changes for those before and after treatment did not attain statistical significance.

Results

In the renal response to ammonium chloride load, 23 patients (62%) out of 37 were unable to attain a minimum urine pH of 5.35 (normal mean + SD) or less during the test. The SLE group mean pH of 5.6 was significantly higher than that of the control group (pH 5.1; $p < 0.001$). The 2-hour PSP excretion for the SLE group was also lower than the control group (61% vs. 75% or more). The group mean of maximum urine osmolality after fluid

Reference

1 Yeung, C.K.; Wong, K.L.; Ng, R.P.; Ng, W.L.: Tubular dysfunction in systemic lupus erythematosus. Nephron 56:84–88 (1984).