THE CLINICAL SIGNIFICANCE OF GROWTH FACTORS WITH VESICO-URETERAL REFLUX IN CHILDREN

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Objective: This study was conducted to investigate whether circulating active TGF-beta1 (transforming growth factor) and urinary EGF (epidermal growth factor) levels could be detected in patients with vesico-ureteral reflux (VUR) and whether they were correlated with renal scarring.

Methods: Plasma TGF-beta1 and urinary EGF levels were measured in 115 children (aged 1 month to 11 years) with VUR and 27 age-matched normal controls, using an enzyme linked immunosorbent assay (ELISA).

Results: The mean plasma TGF-beta1 levels in patients with VUR were significantly higher (32.3 +/- 12.9 mg/ml) compared to (12.7 +/- 2.9 mg/ml) for the control. The mean plasma TGF-beta1 levels for the VUR patients with scarring (grade III, 48.2 +/- 17.1 mg/ml; grades IV and V, 39.3 +/- 8.1 mg/ml) were significantly higher than those for the children with VUR without renal scarring (grade III, 24.6 +/- 8.3 mg/ml, grades IV and V, 28.2 +/- 7.9 mg/ml; p<0.001). The urinary EGF levels for VUR increased significantly with advances in grades of reflux but there was no difference between the groups with or without scarring or between grades of reflux.

Conclusion: Raised circulating TGF-beta1 levels reflect increased renal tissue damage in children with VUR, and the higher levels of TGF-beta1, associated with renal scarring, suggested that TGF-beta1 levels might be a useful marker for the reflux nephropathy.