IS-17 Estimation of Plasma Renin in Patients with Chronic Unilateral Hydronephrosis

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PURPOSE: Acute experimental hydronephrosis induces increased output of renin from ipsilateral kidney. In most clinical presentation of unilateral hydronephrosis the patients are normotensive with normal circulating plasma renin activity. It has been argued that such finding are an expression by compensatory regulation by the contralateral normal kidney. In consideration of this argument we undertook this prospective study of ipsilateral renal vein renin activity in children with congenital unilateral hydronephrosis and contrasted them with otherwise normal children.

METHODS: Prospective study, from July 1999 to June 2001. In study group 20 patients, age upto 12 years with unilateral hydronephrosis and in control group 10 patients without hydronephrosis. The Gamma Coat Plasma Renin Activity 125I radioimmunoassay kit imported from USA was used for the quantitative determination of Plasma Renin Activity (PRA) by the radioimmunoassay of generated angiotensin I.

RESULTS: All the patients had advanced grade of hydronephrosis and 2 patients (13%) had mild hypertension. In this study the mean result of plasma renin activity was 45.58 ng/ml/hr in study group and ranging from 11.69-67.56 ng/ml/hr. The mean result of PRA in control group was 5.9 ng/ml/hr. The result of study group was significantly higher than normal (P value 0.0003).

CONCLUSIONS: In Bangladesh we are doing more conservative kidney preserving surgery and this observation calls for long term follow up of the patients undergoing in childhood for potential of developing renin-angiotensin induced hypertension in later life.