

Quantitative analysis of infantile ureteropelvic junction obstruction by diuretic renography

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Infantile hydronephrosis detected by ultrasonography poses a clinical dilemma on how to treat the condition. This article reports a retrospective study to evaluate infantile hydronephrosis due to suspected ureteropelvic junction (UPJ) obstruction by means of standardized diuretic renography and to speculate its usefulness for quantitative assessment and management of this condition. Between November 1992 and July 1999, 43 patients who had the disease detected in their fetal or infantile period were submitted to this study. Standardized diuretic renograms were obtained with ^{99m}Tc -labeled diethylene-triaminepenta-acetate (Tc-99m-DTPA) or ^{99m}Tc -labeled mercaptoacetyl triglycine (Tc-99m-MAG3) as radiopharmaceuticals. Drainage half-time clearance ($T_{1/2}$) of the activity at each region of interest set to encompass the entire kidney and the dilated pelvis was used as an index of quantitative analysis of UPJ obstruction. Initial $T_{1/2}$ s of 32 kidneys with suspected UPJ obstruction were significantly longer than those of 37 without obstruction. $T_{1/2}$ s of kidneys which had undergone pyeloplasty decreased promptly after surgery whereas those of units followed up without surgery decreased more sluggishly. These findings demonstrate that a standardized diuretic renographic analysis with $T_{1/2}$ can reliably assess infantile hydronephrosis with UPJ obstruction and be helpful in making a decision on surgical intervention.

Key words: hydronephrosis, diuretic renography, quantitative analysis, infant, pyeloplasty