INTRODUCTION AND AIM OF WORK

Urinary tract infection is a disease of major concern, it carries high inconvenience to the child, his parents and the nephrologist. Neglected cases may ultimately lead to renal damage as hypertension or end stage renal disease. Predisposing factors for urinary tract infection include host factors as anatomical or functional abnormalities of urinary tract, immune status and genetic predisposition. Bacterial virulence factors also contribute much to the site and extent of the disease and its final outcome including renal growth and function **(Burbige et al., 1984)**.

Imaging of urinary tract is mandatory in all infants and children with urinary tract infection to detect predisposing factors as obstruction, reflux and anomalies. Anatomical renal evaluation (to detect impaired growth or development of renal scar) as well as differential renal functional evaluation is important in these cases. Follow-up of these cases with repeated cultures, imaging, medical and/or surgical treatment can save many children from progressing to end stage renal disease **(Smellie, 1995)**.

Measurement of renal size and assessment of renal growth are important parts of the radiologic evaluation of the urinary tract in children. Sonography is now the

standard technique for evaluation of renal growth **(Sargent and Gupta, 1993).**

Sonographic measurement of renal length is used commonly to evaluate growth of the kidneys in children. Measurements of renal length on follow-up sonograms are used to determine if renal growth in the interval between examinations has been appropriate **(Schlesinger et al., 1991).**

Calculated renal volume can be used to assess renal size **(Dinkel et al., 1985)**. Estimation of the renal volume showed fairly poor reproducibility. As renal length measurement showed the best reproducibility, it is suggested that the renal length should be used as an indicator of renal size, especially when repeated measurements are to be compared **(Emamian et al., 1995)**.

Normal standards have been developed for renal length in children as a function of weight, height, body surface area and age **(Schlesinger et al., 1991).**

Comparing renal length with age is the easiest and the most practical approach to evaluate renal growth **(Rosenbaum et al., 1983)**.

Radiographic evaluation of kidneys includes measurement of renal length and its comparison to growth chart of normal **(Lebowitz et al., 1975)**.