SONOGRAPHIC RENAL LENGTH IN MALAYSIAN INFANT POPULATION: A HOSPITAL BASED CROSS-SECTIONAL STUDY

Azian Abd Aziz[1], **Aidi Aswadi Halim[1]***

[1]International Islamic University Malaysia

*Corresponding author's email: aidi_aah@hotmail.com

ABSTRACT

Neonatal stage is an important period of growth and development. Organ maturity takes place rapidly during this stage. Any insult could potentially result in impairment of the affected organs, for example the kidneys. Medical personnel have been reliant on renal ultrasonography to determine organ characteristics including renal lengths. However, the lack of local data means that we are dependent on overseas data, which may not be suitable locally. Our primary aim is to determine the range of normal sonographic renal length up to 1 year old in SASMEC@IIUM and HTAA in Kuantan. We also aim to investigate any renal lengths differences between the genders. Finally, we aim to propose simple mathematical equations to estimate the ideal length based on age. All children under the age of 1 who had normal renal ultrasonography were included in this study. Five age groups were formed based on previous studies. Data were mined from Radiology Information Systems, giving a total of 463 cases. Three important data were obtained – infant's age, sonographic renal lengths for both kidneys and gender. Their sonographic renal lengths were tabulated according to age group, following which the mean and corresponding 95% confidence interval (C.I) were derived. We tabulated the means and 95% C.I for both right and left kidneys separately for each group. We found no significant difference in renal sonographic lengths comparing between the genders. Two separate linear regression equations were formulated for right and left kidneys respectively. We formulated tables of normal sonographic renal lengths according to age, useful in daily practice.

Keywords: Ultrasound kidneys, renal length, infant