

Title page

Baseline renal function of pregnant women in a geographical region with an epidemic of Chronic Kidney Disease of unknown etiology in Sri Lanka

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Text:

Chronic Kidney Disease of unknown aetiology (CKDu) is the leading public health problem in the North Central Province of Sri Lanka (SL)¹. Despite being a major public health issue in SL, the actual disease burden is yet to be estimated. The purpose of this letter is to describe the renal function of an apparently healthy population of pregnant women from Anuradhapura as a baseline indicator of the renal functions of the resident population for future reference.

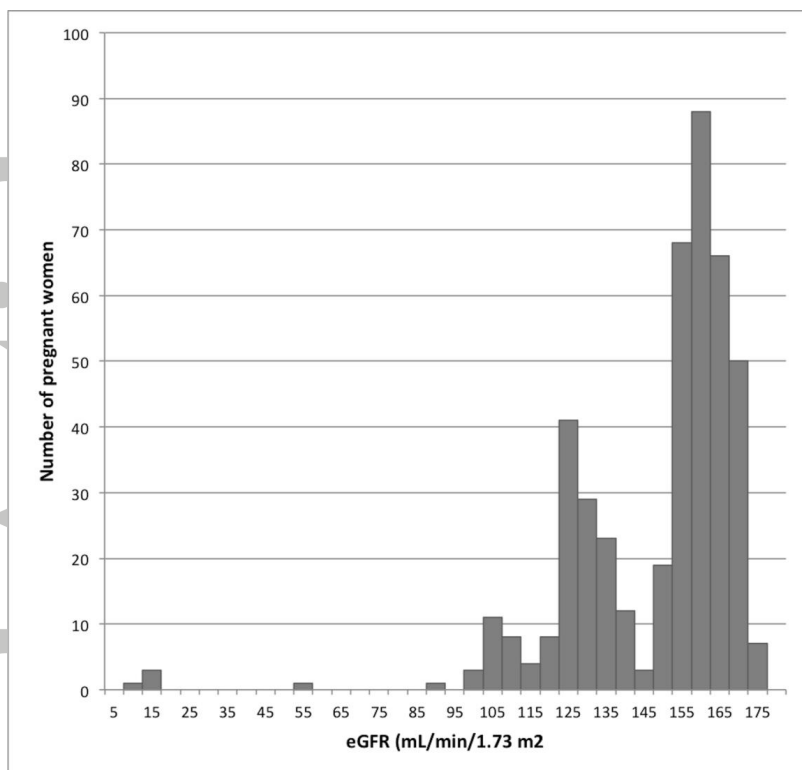
These data are from a descriptive cross sectional study on maternal morbidity. The study methodology was published previously². In summary, we selected a representative sample of pregnant women from Anuradhapura district using a two-stage cluster sample technique. In the first stage five Medical officers of the health areas were selected to represent different geographical locations and in the second stage we selected pregnant women from a pregnant mothers' registers in the field. Venesection was done in the field clinics by trained nurses. Serum creatinine was assessed and estimated glomerular filtration rate (eGFR) was calculated using the Modification of Diet in Renal Disease (MDRD) equation. Ethical clearance for this study was obtained from the ERC committee of the Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka.

The study sample included 451 pregnant mothers with a mean age of 27 years (SD 5.5 years). The gestational age of the mothers ranged from 24 to 38 weeks. The serum creatinine in this sample ranged from 44-619 $\mu\text{mol/L}$. Mean (SE), median, and standard deviation of eGFR in this population was 145.5 (1.08), 154, 22.7 mL/min/1.73 m². The inter quartile range was 130.5-159.8. Figure 1 shows the distribution of eGFR values in the sample. There were 4 (0.9%) pregnant women with an eGFR of <15 mL/min/1.73 m². Of these, 2 had previously diagnosed structural kidney problems. Another pregnant woman with an eGFR of 50.8 mL/min/1.73 m² and the other two in stage three CKD had never previously been diagnosed as having any renal problems. Only a single mother had pregnancy-induced hypertension and reduced eGFR. Among pregnant women in their second trimester, an eGFR below the reference range was observed among 55 (36.2%). The respective number for the third trimester pregnant women was 17 (5.8%). Figure 2

eGFR calculated during pregnancy using MDRD and CKD-EPI equations has been shown to underestimate the eGFR in some populations³. Therefore the high percentage of females with decreased eGFR observed in this sample may be an overestimation and should be used with caution. However, a larger study of baseline renal function in this population is warranted to better assess the prevalence of CKD disease in this area.

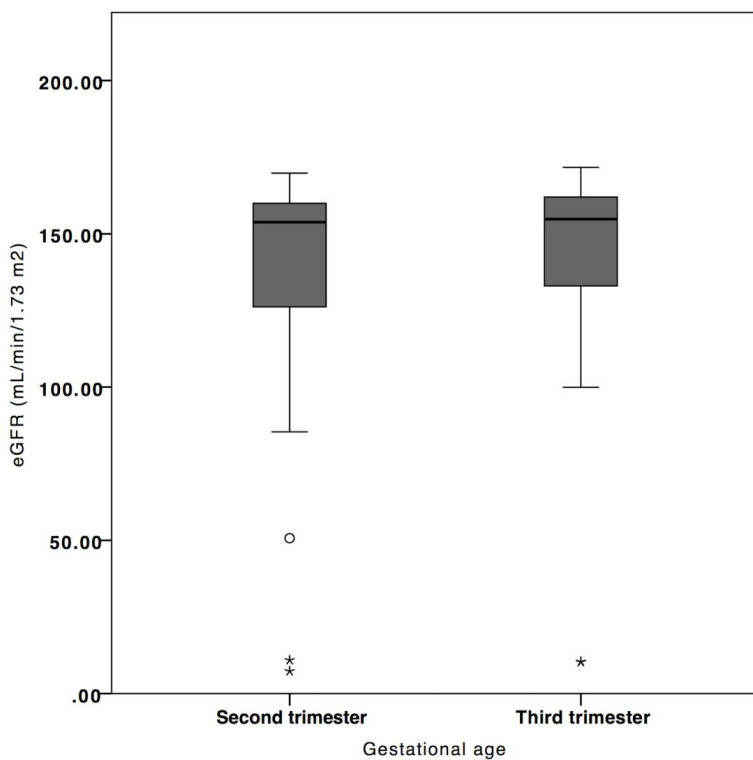
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Distribution of eGFR values among 451 pregnant mothers in Anuradhapura district

Accepted



Distribution of eGFR values by gestational age (trimester) among 451 pregnant mothers in Anuradhapura district

Accepted