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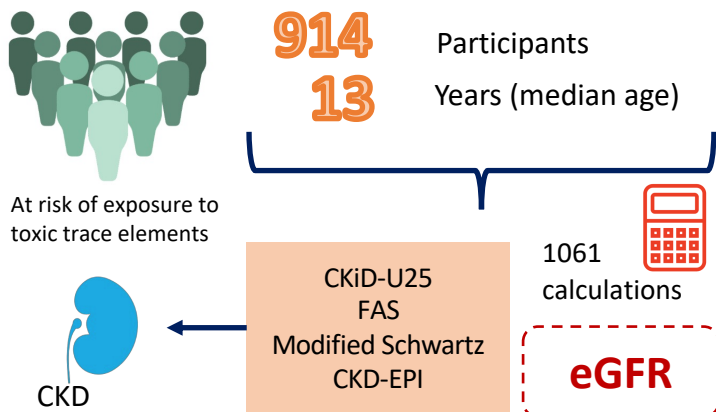
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INTRODUCTION

Guidelines recommend switching estimation of glomerular filtration rate (eGFR) from the CKiD-U25 to the CKD-EPI formula at age 18. We investigated how this would affect chronic kidney disease (CKD) classification.

METHODS

Community-based cross-sectional study



RESULTS

Baseline characteristics of participants are summarized in Table 1. Median CKiD-U25 eGFR was 96.9 (IQR:83.3,113.3) mL/min/1.73m², significantly lower than the CKD-EPI eGFR which was 140.8 (IQR:129.9,149.3) mL/min/1.73m² ($p < 0.0001$). Mean bias was 36.99 ± 12.89 mL/min/1.73m². Pearson $r = 0.8296$ (95% CI 0.0898-0.8474).

Table 1. Characteristics and kidney parameters of the study participants.

Characteristics	n = 914
Age, years (median, IQR)	13 (12 – 15)
Female	503 (55.0)
Male	411 (45.0)
Anthropometry	
Height cm (median, IQR)	158 (152, 160)
BMI, n (%)	
Low weight	20 (2.2)
Normal weight	608 (66.5)
Overweight	171 (18.7)
Obesity	115 (12.6)
BMI kg/m ² , (median, IQR)	21.0 (18.9 – 24.2)
WHR, (median, IQR)	0.47 (0.44 – 0.52)
High blood pressure, n (%)	82 (8.97)
Premature birth <36 weeks gestational, n (%)	110 (12.04)
Poverty, n (%)	
No	392 (42.89)
Moderate	458 (50.11)
Extreme	64 (7)
Kidney parameters	
Serum creatinine mg/dL (median, IQR)	0.62 (0.53 – 0.72)
ACR mg/g, (median, IQR)	4.94 (<LOD – 22.53)
ACR mg/g, n (%)	
< 30	741 (81.07)
30 - 300	169 (18.49)
> 300	4 (0.44)

Abbreviations: BMI, body mass index; WHtR, waist height to ratio; eGFR, estimated glomerular filtration rate; ACR, albumin creatinine ratio; LOD, limit of detection; IQR, interquartile range

Figure 1. Violin plot of the four GFR estimates.

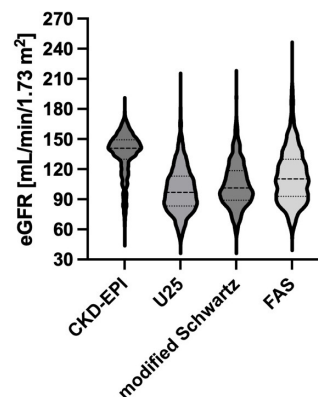
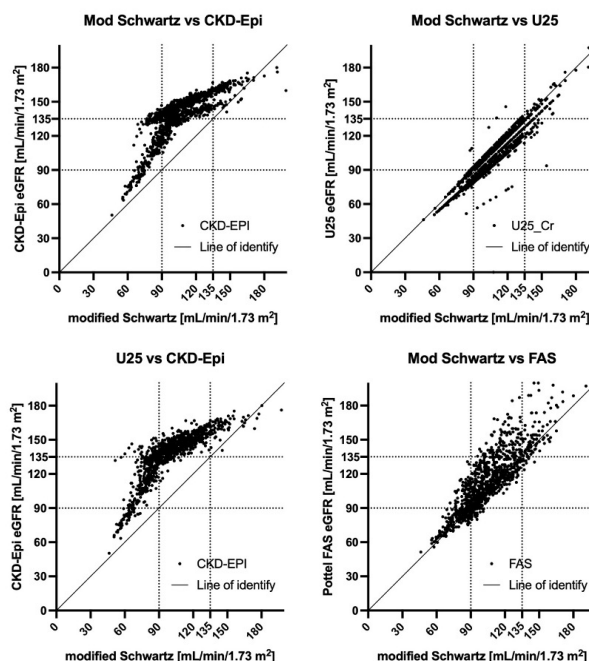


Figure 2. The relationship of the eGFRs with each other.



Modified Schwartz identified 281 (26.4%) measurements as has having CKD 2 and 3 (2+), U25 identified 401 (37.7%) measurements as has having CKD 2+, FAS identified 267 (25.1%) measurements as has having CKD 2+, and CKD-EPI identified 51 (4.8%) measurements as has having CKD 2+, respectively.

CONCLUSIONS

There was poor agreement between the various eGFR formulae. CKD-EPI identifies substantially fewer at-risk participants as having CKD.

Switching from a paediatric approach to CKD-EPI at age 18 may not be accurate. However, since cystatin C is not available in many less-resourced countries, our data favour the use of the modified Schwartz formula up to age 23.