



Mukherjee's Equation: An Equation to Calculate GFR of an Obese Asian

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Dear Editor,

Glomerular Filtration Rate [GFR] is an essential value to understand the condition of two kidneys.¹ Currently we are using different formulas to calculate it. One of the formulae is 1973s Cockcroft-Gault formula.² The formula is:

$$C_{Cr} = \frac{[140 - \text{age}] \times \text{wt}}{S.Cr \times 72}$$

Wherein

- C_{Cr} (creatinine clearance) = mL/minute, this reflects the GFR
- Age = years
- Weight = kg
- S_{Cr} (serum creatinine) = mg/dL

Currently the most used formula is 2009 CKD-EPI creatinine equation³ which has parameters like S_{Cr}, Age, Gender, Race.

Now, I have studied and realized that we are missing with an important factor, that is height which is a very important demographic factor. Several studies have shown that BMI is inversely proportional to GFR.⁴ So, after calculating I am proposing an equation which has height as a measuring factor. This equation will be called Mukherjee's equation. The equation is:

$$GFR = \frac{[2100 - \text{age}]}{[0.72 \times S.Cr \times BMI]}$$

Wherein:

- BMI = Weight in Kg/Height in m²
- Age in years
- S_{Cr} in mg/dl

Points to be noted:

1. This formula is for Asian patients
2. Age is more than 18 years

3. Only for obese patients, BMI > 30
4. For female, the value will be multiplied by 0.8

I am proposing this equation and, in my calculation, I have found some differences with the conventional one. I believe this equation will give more precise result than the conventional one. Through this equation, I have tried to create a bridge between Cockcroft and 2009 CKD-EPI. Although, a clinical trial is needed to validate this equation. Through this article, I am first proposing my equation, Mukherjee's Equation in front of the scientific world.

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