Introduction:
Plasma or serum creatinine is the most commonly used diagnostic marker for the estimation of glomerular filtration rate (GFR) in clinical routine. Equations to estimate GFR based on serum creatinine have been introduced and the most validated and applied are the MDRD equation. Lately, the low molecular weight protein cystatin C was introduced as a GFR estimate (eGFR) superior to creatinine. However, there are conflicting reports regarding the superiority of Cys C over serum creatinine (Cr), with a few studies suggesting no significant difference. The aim of our study was to compare MDRD formula against Simple Cystatin C (Scys) formula for estimation of GFR in Critically Ill Patients.

Methods:
71 critically ill patients (56.3% women, mean age 66.23±13.77 years, with a mortality rate of 18.3%) were enrolled. In each patient, GFR on the first day of admission to an ICU, was calculated using MDRD equation and Scys formulas. Statistical analysis was performed using MedCalc software.

Results:
The mean serum creatinine was 1.39±0.95 mg/dl, mean GFR (MDRD) was 77.23±4.4 mL/min/1.73m2. The mean serum cystatin was 1.65±1.06 mg/L, mean GFR (Scys) was 62.23±36.41 mL/min/1.73m2. The correlation coefficient (r value) between calculated GFR based on MDRD method and Simple Cystatin C (Scys) formula was 0.716 (P = 0.01)

Conclusion:
The correlation analysis showed the eGFRs from every formula could all to some extent reflect the glomerular function or GFR accurately. The GFR (Scys) formula was a quickly and accurate method for estimating GFR and may apply clinically in critically ill patients.