

COMPARISON OF DIFFERENT METHODS OF ESTIMATION OF GLOMERULAR FILTRATION RATE

KRISHNA GOURI DURGA

Discipline of Rheumatology and Nephrology, Nicolae Testemitanu SUMPh

Scientific supervisor: Dorian Sasu

Introduction: Glomerular filtration rate (GFR)- measures how much blood is filtered by the kidneys each minute and is considered as the best overall indicator for how well an individual's kidneys are functioning at a given moment.

$$CL_x = \frac{U_x \times \dot{V}}{P_x}$$

where CL_x is clearance of substance X in ml/min

U_x is the urine concentration of substance X in mg/ml

\dot{V} is the urine flow rate in ml/min

P_x is the plasma concentration of substance X in mg/ml

Purpose: To bring out the difference between estimation of GFR via commonly used different methods and compare them.

Material and methods: Study design - descriptive. WHO information sources, scientific papers from the PubMed database were studied using the selected keywords.

Conclusions: There are many methods used to measure the GFR, depending on the clinical application and availability. Although using inulin is still the gold standard, due to being a cumbersome technique, clinicians usually estimate the GFR using serum creatinine and/or cystatin C.

Keywords: GFR estimation, inulin, cystatin c, creatinine

Results: Smith's classical technique for GFR assessment, urinary clearance of inulin, remains the reference against which alternative clearance techniques and filtration indicators are assessed.

Endogenous filtration markers	Exogenous filtration markers
Urea	Iothalamate
Creatinine	Iohexol
Cystatin C	Inulin
Retinol Binding Protein	EDTA

Table 1 : Examples of Endogenous and exogenous filtration markers.