Schwartz equation

Description

Formula for estimating clearance creatinine in children using:

- serum creatinine – Cr_{serum} [mg/100ml];
- height of the patient – H [cm];
- proportional constants – for age and gender groups [$3.46*10^{-8}kg*s^{-1}*m^{-2}$].

$$CCr_{Schwartz} = \frac{k * H}{Cr_{serum}}$$

Schwartz constant

group	constant	constant for calculation with µmol/l
Infant or newborn with low birth weight (<1 year)	0.33	29
Newborn (<1 year)	0.45	39
Child or adolescent girl	0.55	49
Adolescent boy	0.70	62

Coefficients for other input units

Some laboratories, for example the one in FN Motol, give serum creatinine in µmol/l, it is then more practical to use adjusted constants for calculation.

Note

The formula becomes inaccurate at higher clearance values, so if the CCr rises above 75 mL/min per 1.73 m2, the results should not be considered accurate.

Indicative assessment of GFR in children

The value derived from the Schwartz formula indicates the maximum level of plasma creatinine in a child of a given body height:

$P_{kr\ (max.\ in\ µmol/l)}$ = v_{cm} * 0.54

in_{cm}... *child's height in centimeters*

The index already calculates with a lower limit of GFR of 90 ml/min/1.73 m^2 = 1.5 ml/s/1.73 m^2. The formula is indicative, in the case of repeated pathological findings, it requires control by classical methods.

Links

Related Articles

- Creatinine
- Clearance

External links

Web-based Schwartz clearance calculator (http://www-users.med.cornell.edu/~spon/picu/calc/crclschw.htm)

Source

http://www-users.med.cornell.edu/~spon/picu/calc/crclschw.htm