

Proenkephalin, the new marker for kidney function on the Intensive Care Unit?

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Acute Kidney Injury (AKI)

ICU* 50%

Glomerular Filtration Rate (GFR)

PROENKEPHALIN

- Endogenous
- Complete filtration
- Inflammation-independent
- One-plasma sample-method

CREATININE

- Muscle mass-dependent
- Late rise
- Tubular secretion[†]

IOHEXOL

- Correlation Inulin ($r^2=0.96$)[‡]
- Exogenous
- Labour-intensive

+ Iohexol plasma clearance

"true GFR"

- Modification of Diet in Renal Disease (MDRD)
- Endogenous Creatinine Clearance (ECC)
- ◆ Proenkephalin plasma concentration

Is proenkephalin a better indicator for kidney function than creatinine?

Study design

INCLUSION (n=24)

- Diagnosis sepsis
- Age >18 yrs
- No RRT

PROCEDURE AND SAMPLING

IOHEXOL DECAY CURVE

A. Correlation MDRD

B. Bland-Altman MDRD

E. Correlation proenkephaline

C. Correlation ECC

D. Bland-Altman ECC

CONCLUSION

- Creatinine inaccurate
- Proenkephalin promising
- Validation in larger cohort → **EASI-study**

* Singbartl et al. *Kidney Int.* 2012. † Soveri et al. *Am J Kidney Dis.* 2014. ‡ Erley et al. *Crit Care Med.* 2001.