Urinary netrin-1 concentration in healthy full-term newborns

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Abstract

Background: Netrin-1, a laminin-related secreted protein, is widely expressed in many tissues, including renal tissues. In normal kidneys, netrin-1 is expressed in endothelial cells and in tubular epithelial cells. Urinary netrin-1 is maybe a new marker to demonstrate early kidney damage because is highly induced after acute and chronic kidney injury and excreted in urine.

Aim: The main aim of this work was to determine the normal levels of urinary netrin-1 in healthy full-term newborns.

Methods: The study included 88 healthy full-term neonates (51 male and 37 female) born from normal, uncomplicated pregnancies. Urinary concentrations of netrin-1 in the material obtained in the first or second day of life were determined with a commercially available enzyme-linked immunosorbent assay kits.

Results: Male and female newborns, as well as children in whom the samples were obtained in the first or second day of life, did not differ significantly in terms of their urinary netrin-1 levels. The values of netrin-1/creatinine in the urine differ significantly depending on the time of urine collection. We found a negative correlation between the urinary netrin-1 level after normalization for urinary creatinine and the birth weight. The correlation between urinary netrin-1/creatinine and serum creatinine and cystatin C was positive, but not statistically significant.

Conclusions: This is the first report of urinary netrin-1 levels in healthy full-term newborns during the first postnatal days. We hope that the results will be helpful in further clinical studies.

Biography:

Monika Kamianowska has completed his PhD from Medical University in Białystok, Poland. He has published 44 papers in polish and foreign journals.

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