MATHEMATICAL MODEL FOR UROTOXIN CONCENTRATION IN HEMODIALYSIS PATIENTS AND BODY COMPOSITION.

(Poster)

Rashida Hussain

Institute for Mathematics and Scientific Computing, University of
Graz Heinrichstrasse 36, A 8010 Graz (Austria)
rashida12@gmail.com

(joint work with Franz Kappel, Peter Kontanko, Natan W.Levin, Fansan Zhu)

Abstract

Dialysis patients with high BMI experience survival advantages as compared to dialysis patients with low BMI. Preliminary modeling results seem to confirm the dependence of survival probabilities on BMI, but also show that BMI is a too crude measure. The simulation results strongly indicate that body composition instead of BMI is the important factor. The purpose of this work is to confirm these findings by simulations with a mathematical model using concrete data concerning body composition. In addition we want to demonstrate that the clearance rate during the dialysis process and the generation rate for uremic toxins are also to be considered.

MSC2010: 92B99, 34A30.

Keywords: Body Composition, Hemodialysis, Mathematical modelling.

Section: Applications of Mathematics in the Sciences .

.