

Abstract

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Title of diploma thesis: Role of RFR in developing and recovering from cisplatin-induced renal injury

The purpose of this study was to find out the role of renal functional reserve (RFR) during development and recovery from cisplatin renal damage. This work focuses on evaluating whether RFR can detect (stages) of kidney damage that are not diagnosed with the clinical reference biomarker: plasma creatinine. To evaluate the RFR, Wistar rats produced in the animal house of the University of Salamanca were used. A protocol was established in which an intravenous perfusion of the amino acid glycine was used as a stressor and the glomerular filtration rate was evaluated through creatinine clearance. The animals received a toxic dose of cisplatin and the RFR was determined in one group two days before the maximum point of toxicity (day 2 of the experiment, evolution of kidney damage), in another one on the day of maximum toxicity (day 4) and in the last group on day 11 (recovery from kidney damage) after drug administration on day 0. The values are compared with those of a control group not treated with cisplatin. While on day 4 (maximum toxicity) the ability to activate RFR has been lost, two days before this mechanism is still active (to a lesser extent than a control) although creatinine is already elevated. On the other hand, on day 10 the animals had not completely recovered, presenting variability in the RFR results. This work lays the foundations to continue addressing the study of the role of RFR in cisplatin damage.