

#1965 - Evaluation of the extent of acute kidney injury by biochemical assessment of saliva in rats

Authors and Affiliations

Arash Abdi, Mehri Kadkhodaei, Behjat Seifi, Farzaneh Kianian, Keivan Lorian, Sedigheh Shams

a Department of Physiology, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, Iran

b Pediatrics Centre of Excellence, Department of Pathology, Children's Medical Centre, Tehran University of Medical Sciences, Tehran, Iran

Arash Abdi(4120381951)
Mehri Kadkhodaei(0040095843)
Behjat Seifi(2111271349)
Farzaneh Kianian(0011326913)
Keivan Lorian(4420490942)
Sedigheh Shams(0033892725)

Corresponding Author and email

a-abdi@razi.tums.ac.ir

Body

Background: Renal ischemia reperfusion (IR) is the most important cause of acute kidney injury (AKI). Several studies have demonstrated the validity of saliva in the diagnosis of various diseases. Since blood collection causes stress and anxiety in many patients especially in children, the aim of this study was to evaluate the validity of salivary sample measurements comparing to plasma samples in AKI rats.

Method and materials: To establish a model of renal IR, both renal pedicles were occluded for 55 min and then declamped to allow reperfusion for 3, 6 and 24 hours. Twenty-four rats were randomly assigned to four experimental groups :1) control 2) 3h IR 3) 6h IR 4) 24h IR. Control group underwent laparotomy without cross clamping of renal pedicles. After reperfusion, rats received intraperitoneal injections of pilocarpine 1mg/kg to collect saliva. Blood samples were also collected. Creatinine (Cr), urea nitrogen were measured in both plasma and salivary samples.

Results: Significant increases in the blood creatinine, BUN and salivary urea nitrogen (SUN) were found in 3, 6 and 24h IR groups compared to the controls. In addition, salivary creatinine was significantly increased in 3 and 6h IR compared to controls.

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Conclusion: This study showed that correlation exist between blood and salivary creatinine and between BUN and SUN in IR-induced kidney injury in male rats. Measurement of SUN and salivary creatinine may be reliable diagnostic tests for patients with AKI.

Key words: Saliva, Acute kidney injury, Ischemia-reperfusion

References

Generate date 03 November 2018 14:50