

ABSTRACT

MONITORING SERUM CREATINE, BLOOD UREA NITROGEN IN
PATIENTS BRAIN INJURY WITH THERAPY MANNITOL
(The study was conducted at the Dr. Soetomo Hospital Surabaya)

Background: Mannitol, an osmotic agent used to decrease intracranial pressure, can cause acute kidney injury (AKI). Acute kidney injury (AKI) is characterized by an abrupt decline in renal function. The objectives of this study were to assess the impact of mannitol on the creatinine serum and blood urea nitrogen to incidence and severity of AKI and to identify risk factors and outcome for AKI in brain trauma injury patients.

Objective: Assess changes in serum creatinine, BUN, in brain injury patients who received 20% mannitol therapy with a loading dose of 200 ml followed tapering ranging from 6x100 ml dose, the data measured before and during therapy mannitol.

Methods: This study retrospectively evaluated 32 patients who received mannitol infusion between 1 January 2014 and December 2016 in the Dr. Soetomo Hospital.

Results: From the research, the number of patients who met the inclusion criteria, 32 patients. The mannitol patients received a mean dose of 328,57 mL of 20% mannitol (131,43 g) and had initial osmolalities the patients who receive mannitol 296,1 mosmol/L. The mean initial serum creatinine was 0.85 ± 0.17 mg / dl and a mean SCr last day administration of 0.74 ± 0.30 mg / dl. While the average BUN (Blood Urea Nitrogen) 11.27 ± 2.75 mg / dl and means the last day of 17.08 mg / dl $\pm 8:59$ mg / dl. Data from Serum creatinine and BUN ($P < 0.005$) it can be concluded that no significant changes.

Conclusion: Mannitol 20% with a loading dose of 200 ml followed tapering ranging from 6x100 ml dose did not affect renal function (serum creatinine and BUN).

Keywords:

Mannitol, Acute kidney Injury, Creatinine Serum, Blood Urea Nitrogen

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DAFTAR SINGKATAN

- AAG : *α-acid glycoprotein*
- ADO : Aliran Darah Otak
- ATP : *Adenosine Triphospat*
- BBB : *Blood Brain Barrier*
- BP : *Blood Pressure*
- COB : Cedera Otak Berat
- COR : Cedera Otak Ringan
- COS : Cedera Otak Sedang
- CPP : *Cerebral Perfusion Pressure*
- CSS : Cairan Cerebrospinal
- ESRD : *End Stage Renal Disease*
- GCS : *Glasgow Coma Scale*
- GFR : Kecepatan Filtrasi Glomerulus
- KDIGO: *Kidney Disease Improving Global Outcome*
- LBW : *Lean Body Weight*
- ROS : *Reactive Oxygen Species*
- SDO : Sawar Darah Otak
- TIK : Tekanan Intrakranial
- TPO : Tekanan Perfusi Otak