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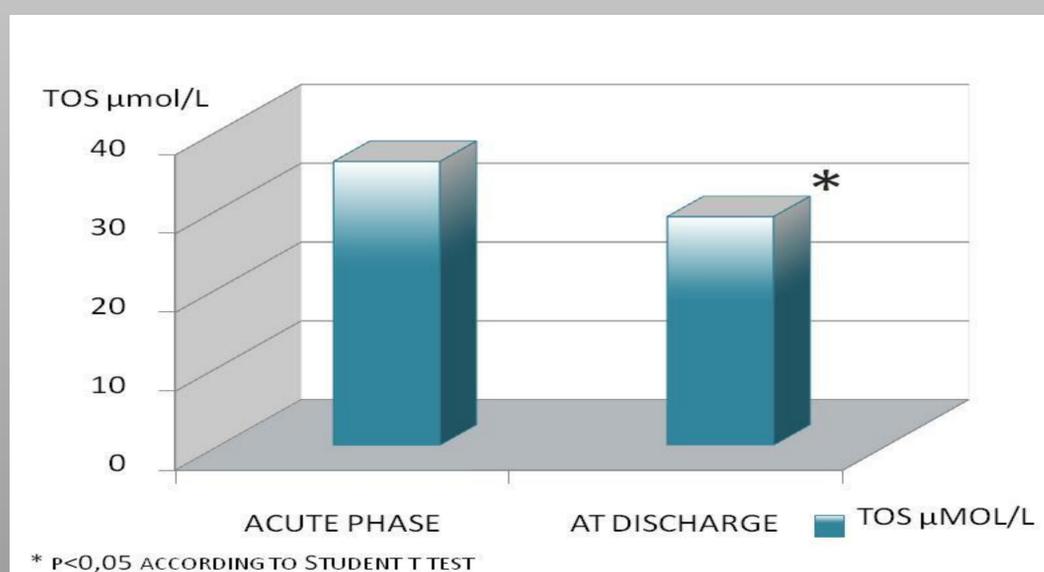
**Introduction:** Acute pyelonephritis is an ascending urinary tract infection that has reached the renal pelvis, usually accompanied by infection within the renal parenchyma. It is one of the most common bacterial infection in children. Imbalance between antioxidants and pro-oxidants in favor of the pro-oxidants is involved in renal parenchymal inflammatory processes and progressive kidney damage.

**Objectives:** The aim of this study was to determine the concentrations of markers of total oxidant and antioxidant status in serum and urine in children during the acute phase, and after normalization of clinical parameters of pyelonephritis, in order to determine the degree of oxidation - stress disorders in pyelonephritis.

## Materials and methods:

The study included 40 children with acute pyelonephritis. Total oxidative status (TOS) and total antioxidative status (TAS) were measured in serum and urine. The samples were taken after hospital admission and also at discharge in clinically stable condition. TOS was determined by spectrophotometric method with o-dianisidine as a chromogen; TAS by colorimetric assay using a stable ABTS + cation as chromogene.

**Results:** Our results showed that the concentration of serum TOS in children with pyelonephritis in acute phase of disease was significantly higher compared to values at discharge (36 15.8 μmol/L vs. 29 15.8 μmol/L P<0.05). Urine TOS values were slightly higher in the acute phase, but the difference was not statistically significant. TAS values were not significantly different either in serum or in urine.



**Figure1:** TOS serum values in acute phase and after normalisation of clinical status.

**Conclusion:** The results showed that the values of TOS in children in the acute phase of pyelonephritis were significantly higher, which indicates that TOS increase could be a marker of tissue damage during pyelonephritis. TAS is not a good indicator of antioxidative protection in acute pyelonephritis. This parameter is the sum of all reducing substances in circulation, urea and uric acid mainly, whose concentration increase in blood due to kidney damage.

## References:

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