



Clinical significance of serum procalcitonin levels on admission in patients with cirrhosis of liver

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Abstract :

Procalcitonin is a protein, calcitonin precursor which in healthy individuals is produced by cells of thyroid gland. The half-life of procalcitonin in serum is 20-24 hrs and it is used as a marker of infection. Incidence of bacterial infections in patients with liver disease is high. Due to liver dysfunction immune reactivity is significantly impaired and bacterial infections are more frequent. Clinical signs of infection such as fever or tachycardia are often non-specific or even absent. Procalcitonin has greatest sensitivity (85 percent) and specificity (91 percent) for differentiating patients with SIRS from those with sepsis. Procalcitonin is a useful biochemical marker to differentiate sepsis from other non-infectious causes of systemic inflammatory response syndrome.

Keyword : PCT-Procalcitonin, MELD-Model for end stage liver disease, SIRS-Systemic inflammatory response syndrome

AIM OF THE STUDY:

The aim of the study was to evaluate the diagnostic value of serum procalcitonin levels on admission in diagnosing early infection in chronic liver disease patients and as a prognostic marker.

METHODS:

Retrospective analysis of 55 hospitalised patients with cirrhosis of liver diagnosed by biochemistry and imaging whose procalcitonin levels on admission were taken. **RESULTS:** A total of 55 patients were included. The mean age of patients was 47.64 years. Out of 55 patients, 45 patients (82 percent) had elevated procalcitonin levels ($>0.5\text{ng/dL}$) and out of which 38 patients (82 percent) had evidence of infection which was diagnosed by standard criteria. 7 patients with elevated PCT levels and without evidence of infection had mild elevation i.e. 2ng/dL . 8 patients died and all of them had serum procalcitonin levels of $>50\text{ng/dL}$. Hence PCT levels were significantly elevated in patients with active infection and also correlated with mortality.

CONCLUSION:

In cirrhotic patients, on admission procalcitonin levels has high sensitivity and specificity for early diagnosis of bacterial infection and also has a prognostic value. Procalcitonin levels showed a significant association with sepsis and positive blood culture. Threshold value of $>2\text{ng/dL}$ strongly indicates sepsis. So early detection of infection and management in cirrhotic patients will reduce morbidity, hospital stay and mortality. Procalcitonin has been useful as a biomarker in sepsis and can be used for identifying early sepsis in patients who have cirrhosis of liver having subtle clinical signs and symptoms.

REFERENCES:

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