PROCALCITONIN (PCT) AS AN EARLY DIAGNOSTIC MARKER OF SEPTIC COMPLICATIONS IN THE IMMEDIATE POSTOPERATIVE ICU SETTING AFTER LIVING DONOR LIVER TRANSPLANTATION (LDLT)

Thesis

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Abstract

Background: Infections are still the most common complication in the immediate postoperative setting after living donor liver transplantation with high mortality rates. Clinical and laboratory data is nonspecific, microbiological data is time-consuming. Infection and rejection (even acute mild episodes) may present with the same clinical features.At this clinical stage, early diagnosis is important for determination of the appropriate treatment.

Objective: PCT is a well-known biomarker for sepsis, we hereby investigate the ability of procalcitonin (PCT) as an early diagnostic marker of septic complications and its ability to differentiate between infection and rejection in complicated cases in the immediate postoperative setting after orthotropic liver transplantation.

Method: Cross sectional study including retrospective part (20 patients) and prospective part (22 patients**)** post liver transplantation. All adult patients underwent post operative clinical course analysis, APACHE II and MELD score, daily routine laboratory tests ;liver function tests, kidney function tests, C-Reactive protein and TLC. Also Procalcitonin was measured every 48 hours starting from day 6 post-operative in the early ICU period.

Results: Our study Included 3 groups: **Group 1(**23 patients**)**: Patients with no early mild rejection pattern or infection and normal PCT, TLC& CRP, **Group 2 (**10 patients**)**: Patients with Infection complication (fever + PCT, TLC, CRP increased, liver function tests impaired) and **Group 3 (**9 patients**)**: patient with suspected early mild rejection pattern. (± Fever + PCT is normal, TLC & CRP increased with impaired liver function tests and normal graft ultrasonography). Length of stay in ICU was longer in group II (16.40±9.40, p value: 0.02). PCT and TLC level were significantly high in group II in day 6 (5.27±6.67, p value: 0.00) and (8.61±6.94, p value 0.02) respectively. PCT, TLC and CRP ROC curve for prediction of infection showed highest results with PCT (sensitivity 60%, specificity 97% and cut-off value 0.75ng/ml and p value 0.000. The area under the curve is 0.883). In group 2, PCT levels showed significant changes between day 8 to day 10 (p value 0.018), day 10 to day 12 (p value: 0.018) and day 12 to day 14. (p value 0.043). In group 2, there was

strong direct correlation between the percentage changes of PCT, TLC in day 6 to day 8 (p value: 0.00, r 0.998).The source of infection were mainly pulmonary (60%) and blood stream (30%), the causative organism were mainly bacterial; klebsiella, Ecoli, and pseudomonas.DM is a risk factor for septic complications (90%).

Conclusion: Based on these results, we believe that PCT seem to possess important diagnostic power in the post-transplant sepsis after liver transplantation.

Key Words:

Liver transplantation, Procalcitonin ,sepsis, complication.