

Comparison of Procalcitonin Levels with Different Micro-Organisms Recovered from Neonates with Suspected Septicemia

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ABSTRACT Background: Septicaemia is a leading cause of mortality and morbidity in neonates. The aim of our study was to evaluate usefulness of serum PCT as a diagnostic marker of neonatal sepsis by taking blood culture as gold standard.

Material and Method: This study was conducted at tertiary care hospital in Lahore over a period of 6 months. 365 neonates with suspected septicaemia from NICU (Neonatal Intensive Care Unit) were enrolled in our study. Blood cultures and levels of serum procalcitonin were performed in all the neonates with clinically suspected septicaemia. Different levels of Procalcitonin were measured and compared with the positive blood cultures by using three different cut-off values for PCT ≥ 0.5 ng/ml, ≥ 2 ng/ml and ≥ 10 ng/ml respectively. Different levels of procalcitonin were compared with different micro organisms recovered from blood culture.

Results: Among neonates with suspected septicemia (n=356), 2.07% positive blood cultures had procalcitonin levels upto 0.5 ng/ml. 26.4% positive blood cultures had procalcitonin levels $> 0.5-2.0$ ng/ml. while 45.3% and 100% blood cultures had procalcitonin levels $>2-10$ ng/ml and > 10 ng/ml respectively.

Among gram positive organisms (n=30), 4 (13.3%) blood cultures were negative for Procalcitonin levels and 12 (40.0%) blood cultures were weak positive.

No gram positive organism was strong positive for procalcitonin levels. Among gram negative organisms (n=38), 8 (21.7%) organisms were mild positive for serum procalcitonin. 25 (65.8%) gram negative organisms were moderate positive for serum procalcitonin while 5 (13.1%) organisms were strong positive for serum procalcitonin levels.

2 (100%) fungi were weak positive for procalcitonin levels. Strong procalcitonin levels (>10 ng/ml) were 68.75% in ESBL producing strains of gram negative organisms and 31.25% in Non ESBLs organisms. **Conclusion:** These findings support that serum procalcitonin levels can be useful in early detection and prompt treatment

in neonatal sepsis.