Summary and Conclusion

This study was conducted to evaluate serum concentration of procalcitonin (PCT) as a new diagnostic marker for early detection of occult bacteremia (OB) which means bacteremia without an obvious focus of infection in comparison with other routinely markers of infection as C-reactive protein and total leukocytic count (TLC).

For this purpose ,Two hundred febrile children attending the pediatric department in Benha university over a period of one year, among these 40 cases were fulfilling the enrollment criteria of the study, these children presenting with fever for more than 39°c and were included in this study. In addition 10 healthy children of comparable age were included as controls.

All occult bacteremia cases and control were subjected to proper clinical evaluation (complete history taking, thorough physical examination and laboratory investigations)

From all study populations (50 children), blood samples were examined for :-

Complete blood count.

Quantitative measurement of C-reactive protein .

Blood culture.

Quantitative measurement of serum procalcitonin concentration by radioimmunoassay

Our study shows that PCT concentration levels were increased in children with proved bacteremia by their +ve blood culture and there was significant difference of procalcitonin concentration levels between blood culture +ve cases and other cases with blood culture –ve and control groups($p<0.001$), while CRP shows significant difference between all febrile children (+ve and –ve blood culture cases) and control group , and WBC count shows no difference between +ve ,-ve blood culture and control groups.

Also PCT shows the highest sensitivity and specificity for detection of occult bacteremia compared to other parameters of infection and we recommend its use.

The present study had concluded that procalcitonin is considered to be more sensitive and specific marker but the high cost of this test will be lowered when it will be used in wide scale as diagnostic tool for bacterial infection.

In conclusion, procalcitonin measurement might provide the clinician with a usefull addition to currently available investigations, although given the poor performance of the leuccyte count, and to a lesser extent C-reactive protein, it might even be argued that the routine use of these tests is motivated more by low cost, easy availability, and historical practice rather than diagnostic value.