INTRODUCTION

Septicemia has been described as a persistent or recurrent bacteremia due to inability of the body mechanisms to localise the infection giving rise to acute fulminant, sometimes protracted illness, with a significant mortality.

Neonatal septicemia refers to the generalised bacterial infection documented by positive blood culture in the first four weeks of life (Gottlieb & Behrman, 1970).

As many as 2% fetuses are infected in utero and 25% of newborns get infected during delivery or in the first month of life. The reported incidence of neonatal septicemia is 1-36/1000 live births and its case fatality rate varies between 30-70% depending on the organism. Host and socio-economic factors markedly bias the reports of incidence coming from various hospitals.

The incomplete muster of immune-inflammatory response makes newborn infant more susceptible to bacterial invasion from the bloodstream as compared to
older children and adults. The risks are even higher in those born prematurely. Infection may be acquired early (intra-partum) from the mother or later as contact with the environment widens. Bacteria may invade host's body via number of routes and procedures e.g. transplacental, infected amniotic fluid in utero, vaginal secretions during birth, resuscitative process through skin and umbilical cord.

Infants of low birth weight are known to be particularly susceptible: lower the birth weight greater the susceptibility (Bustow et al, 1965).

A variety of organisms can infect the newborn including bacteria, viruses, fungi, protozoa, chlamydia and mycoplasma etc. Septicemia is frequently due to staphylococcus aureus, E. coli, Pseudomonas, Klebsiella, N-meningitis, N. influenzae, S.pyogenes and salmonella. The changing pattern and frequent emergence of resistant bacteria make the problem more difficult.

The diagnosis of neonatal septicemia is often a perplexing and frustrating experience for the neonatologist, as the early clinical symptomatology of neonatal septicemia is non-specific, vague and subtle and often mimicked by a host of other disorders affecting the newborn. viz., birth asphyxia, hypoglycemia, hypothermia, prematurity and intra-cranial hemorrhage.
Indiscriminate over use of antibiotics on the basis of clinical suspicion alone is hazardous for any neonatal unit because this will lead to the emergence of resistant organism. A rationale approach to antibiotic therapy has to be evaluated in order to shorten the hospital stay and to lessen the emergence of resistant bacteria. To achieve this goal various hematological tests have been described by Philips et al (1980), viz., Total leucocyte count, Differential leucocyte count, Band Cell count, Band/Neutrophil ratio, micro Erythrocytic Sedimentation Rate. However, the 'Gold Standard' for a definite diagnosis of sepsis remains the "isolation of micro-organism from blood culture".