INTRODUCTION AND

AIM OF THE WORK

The procedure of exchange transfusion is one of the important procedures frequently used in neonatal intensive care units. Originally the use of exchange transfusion was indicated for infants with severe neonatal hyperbilirubinemia (Cloherty et al, 1985). More recently exchange transfusion has been utilized in the management of neonatal septicaemia, respiratory distress syndrome (RDS), disseminated intravascular coagulopathy (DIC), and drug intoxications (Glasgow et al, 1987).

Exchange transfusion aims at reducing the level of serum bilirubin in cases of hyperbilirubinemia to decrease the risk of kernicterus and to treat severe anaemia which results from severe hemolytic jaundice, and to remove toxins in cases of septicaemia and intoxications (Prod'hom, et al, 1974).

Certain metabolic changes during and after exchange transfusion have been documented. Acid-citrate dextrose (ACD) and citrate-phosphate-dextrose (CPD) blood have certain metabolic complications : hypocalcaemia, hyperkalemia, hypernatremia,

rebound hypoglycemia, tissue hypoxia and acidosis which may lead to cardiac arrest during exchange transfusion (Glasgow, et al, 1987).

Exchange transfusion provides immunologically useful factors (i.e. immunoglobulins, complement factors and endotoxin serum inhibitors) (Yoder et al, 1986). And may remove undesirable circulatory components e.g. germs, toxins, abnormal split coagulation products, platelet antibodies and other components sometimes produced in cases of sepsis (Tollnez et al, 1977).

Exchange transfusion removes bacteria or bacterial toxins or both. It also improves oxygenation of the tissues as a result of increase in 2,3 diphosphoglycerate and adult hemoglobin, thus shifting the oxygen dissociation curve to the right. Furthermore, it effectively improves pulmonary and systemic perfusion, pulmonary ventilation, the hemostatic mechanisms and enhances humoral and cellular immunity in infected newborns (Vain et al, 1980).