Introduction and Aim of Work

Introduction:

Preterm infants are at high risk to rapidly become anemic, due to an exaggeration of the normal physiological anemia. Which RBCs mass and iron stores are decreased, because of low birth weight and RBCs survival is decreased in comparison with term infant. And there is relatively more rapid rate of growth in preterm than in term infants mor over vitamin E deficiency is common in small premature infants ***(Helen et al., 2008).***

In addition to combination of frequent laboratory blood sampling and immature hematopoietic system. Therefore, more than 90 % of preterm infants receive one or more transfusions of red blood cells ***(Dani et al., 2008).***

However, from a clinical point of view, the risks and benefits of RBC transfusions for preterm infants remain unclear. In fact, previous studies have inconclusive results on the potential benefits from RBC transfusions in regularizing their breath pattern and improving their growth. Thus, if decreasing RBC transfusions may reduce the risk of transfusion-associated infections and iron overload, the consequential low hemoglobin (Hb) levels may increase the risk of morbidities associated with chronic anemic hypoxemia ***(Strauss, 2001).***

In addaition maintaining a higher Hb level results in more infants receiving transfusions without obtaining significant benefits during admission, on the other hand a restrictive policy of RBC transfusion is

associated with more frequent major adverse neurologic events in comparison with a liberal policy ***(Bell et al., 2005).***

In any case, harmful adverse effects may arise acutely after RBC transfusion, such as acid-base, glucose, and electrolyte disturbances This can occur because many factors in the preparation of irradiated RBCs may lead to a severe burden of hydrogen ions, carbon dioxide, potassium, and glucose: the age of the RBCs, the number of procedures used to concentrate the blood the duration of time elapsed from concentration and irradiation, and the volume and hematocrit (Hct) of RBC units are reported to affect the potential risk from transfusions ***(Sumpelmann et al., 2001).***

AIM OF WORK

This thesis aims to shed light on whether RBCs transfusion may induce segnifcant changes of plasma acid base ,electrolytes and, glucose in preterm neonates.