

### Calculation for packed RBC transfusion

$$\frac{\text{Weight in Kg} \times \text{Blood Volume per Kg} \times (\text{Desired PCV} - \text{Observed PCV})}{\text{Hematocrit of blood to be given}}$$

Average blood volume of newborn is 80 ml/kg. The hematocrit of Packed RBCs is 70 and whole blood is around 50.

Example: In infant weighing 2.5 kg is on ventilator, needs 40% oxygen and has a haematocrit of 20. The volume of packed cells required to be transfused will be

$$\frac{2.5 \times 80 \times (40-20)}{70} = 55\text{ml}$$

The maximum transfusion should be 10-15 ml/kg. Volumes larger than 15 ml/kg are to be divided. The transfusion should be given over a period of 3-4 hrs.

Exchange transfusion with packed RBC is preferred when there is severe anemia and large volume is required to correct anemia. This would help to prevent CHF due to circulatory overload.