3. Observation and Result

The parameter which we included in our study was compared between the Whole Blood & Blood Component Transfusion in neonates is shown in the **Table 5.** The component which was used more in the neonatology group transfusion was Platelets which is shown in the pie chart **Fig.1**. The comparison between the Whole Blood & Blood Component Transfusion in neonates is shown in the statistical bar diagram **Fig.2.**

Table 5: Whole Blood versus Blood Component Transfusion in neonates

Parameters	*Whole blood transfusion*	*Blood component transfusion*
Number of Units	61	**600** PRBC - 218 (35%) Platelet - 270 (**53%**) FFP - 100 (10%) Cryoprecipitate - 12 (02%)
Number of Neonates	50	**200**
Sex : Male Female	 **62%** 38%	 **66%** 34%
Term: Full term Preterm Late Preterm	 36% **56%** 8%	 12% 43% **45%**
Birth Weight: Normal Low Birth Weight Very Low Birth Weight	 26% **48%** 26%	 30% 32% **38%**
Acute Non Infectious Transfusion Reactions: Yes No	4% (2 babies) i] FNHTR – 1 (50%) ii] Hyperkalemia – 1 (50%) **96%**	6% (11 babies) i] TRALI – 1 (9%) ii] FNHTR – 7 (**64%**) iii] Hypoglycamia –2 (18%) iv] Hypomagnesemia – 1 (9%) **94%**

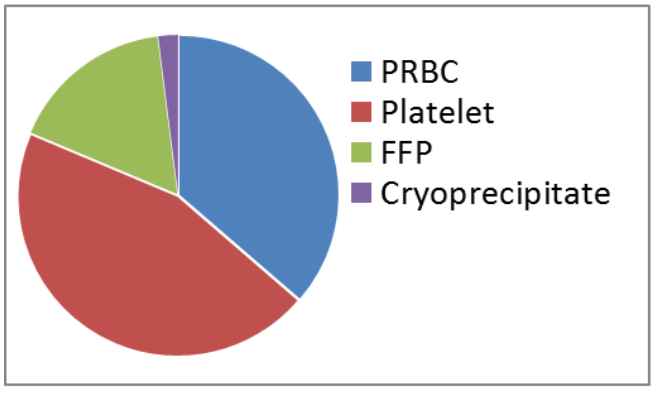

Figure 1: Pattern of usage of Blood Components

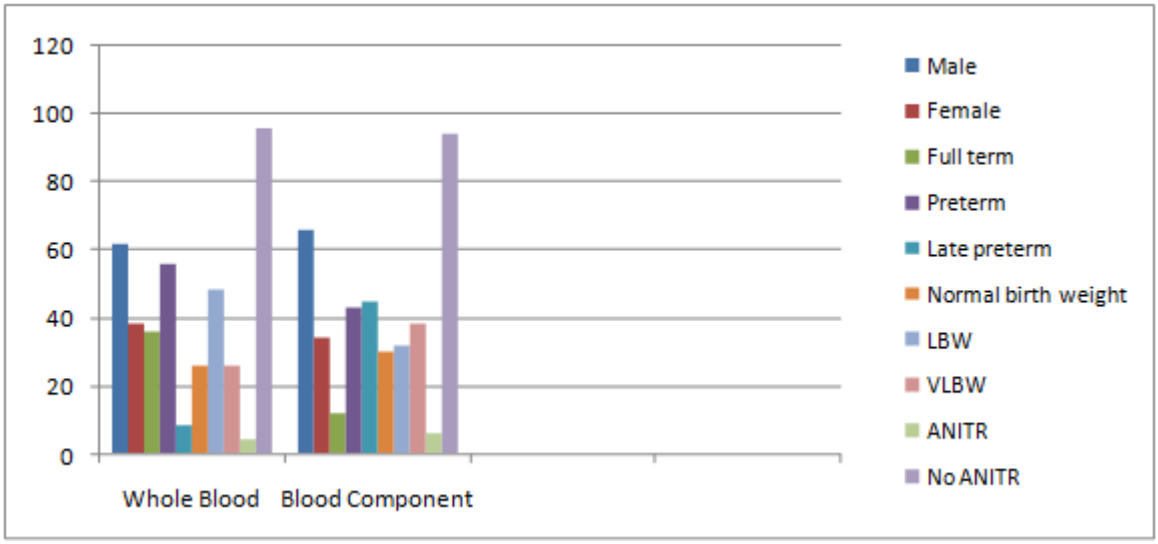

Figure 2: Whole Blood versus Blood Component Transfusion in neonates

The Indications for each blood component that we transfused for the neonates is tabulated in the **Table 6.**

Table 6: Indications for the Blood Component Transfusion in neonates

Blood components	*Indications for transfusion*	*No. of neonates*
1. PRBC – **35%**	Hematocrit <20% with low retic with symptoms	11
	Hematocrit 20% - 30% and on ventilation	**13**
	Hematocrit 20% - 30% and With significant tachycardia. HR -180/min	2
	Hematocrit 30% - 40%	4
	Hematocrit 40% - 45% and With congenital cyanotic heart disease	5
2.Platelet – **53%**	Platelet count less than 30,000/cubic mm	18
	Platelet count 30,000 to 50,000/cubic mm	**25**
	Platelet count more than 50,000 to 99,000/cubic mm	10
3.FFP – **10%**	Disseminated intravascular coagulation	4
	Bleeding Diathesis	**6**
4.Cryoprecipitate – **2%**	Congenital factor VIII deficiency	1
	Von Willebrand disease	1

The Indications for the whole blood transfusion for the neonates is tabulated in the **Table 7.**

Table 7: Indications for the Whole Blood Transfusion

Criteria	**No. of babies**
Anemia Hb - <12g% - Anemia in 1st 24 hours Hb - 8 to 10g% - Oxygen dependency Hb - ≤7g% - Late anemia	25 (**50%**) 5 15 5
Exchange transfusion	10 (**20%**)
Others – Surgery, Bleeding diathesis & Sepsis	15 (**30%**)

4. Discussion

The Pattern of usage of Blood Components in neonatal transfusion from APRIL 2012 – APRIL 2014 was, usage of Platelets > PRBCs > FFP > Cryoprecipitate.

The Indications of Blood Components in neonatal transfusion from APRIL 2012 – APRIL 2014 were i] PRBC transfusion in Haematocrit range 20 % - 30% was more. ii] Platelet transfusion in Platelet count 30,000 – 50,000 was more. iii] Fresh Frozen Plasma transfusion in Bleeding diathesis was more. iv] Cryoprecipitate transfusion in Clotting factor deficiency and Von Willebrand disease in equal percentage was observed.

The Acute Non Infectious Transfusion Reactions of Blood Components transfusion in 200 neonates from APRIL 2012 – APRIL 2014: 11 (6%) babies had transfusion reactions, were noted and treated. i] Transfusion Related Acute Lung Injury (TRALI) – 1 (9%) ii] Febrile Non Hemolytic Transfusion Reaction (FNHTR) – 7 (64%) iii] Hypoglycemia –2 (18%) iv] Hypomagnesaemia – 1 (9%). The incidence of Febrile Non Hemolytic Transfusion Reactions was more.

The other parameters observed in this study were i] Usage of Blood Components (600 units) was more than the Whole blood (61 units) for the transfusion in neonates. ii] Male babies (66%) received more Blood Component Transfusion than Female babies. iii] Preterm (43%) and Late preterm Babies (45%) received more Blood Component Transfusion than Full term babies. iv] Very Low Birth Weight babies (38%) received more Blood Component Transfusion than Normal weight and Low Birth Weight babies. Our results were similar to other study, Bell EF, Strauss RG, Widness JA, Mahoney LT, Mock DM, et al.[4], Ohls R J [5], Richa Jain, Bipin Jose, et al.[8].

5. Conclusion

Through this cross sectional study we noted the transfusion of Blood was increased in general when compared to the previous years, increased transfusion of Blood Components than the Whole Blood was achieved, increased preparation of the Blood Component - Platelets was achieved since the indication for the platelet transfusion in neonates was more, usage of appropriate Blood Components for the appropriate indication for the neonates with minimal acute transfusion reactions was achieved, usage of cryoprecipitate to be increased was noted.

6. Future Scope

The highest achievement in this new modern era in the field of Transfusion medicine is the separation of one unit of blood into its various components for the transfusion. So more Blood component transfusion to be achieved than the whole blood transfusion, to minimise unnecessary transfusion reactions and to use one unit of blood to save many lives. So further extension of this study to the patients of all age groups who got admitted in various departments and receiving various blood component transfusions is recommended in order to know the pattern of usage and the common indications of the blood components among all age groups and to increase the preparation and storage of the blood components which is used more and to minimise acute as well as long term transfusion reactions. This can be done in all the institutions throughout the world for the same and to promote voluntary blood donation to save many lives in one unit of blood.

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