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Research Article

The Frequency of RH Negative Blood Group in Pregnant Women

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ABSTRACT

Objective: Research objective was the Rh D negativity prevalence determination in the pregnant women of Nishtar Hospital Multan.

Methodology and Place: The research was carried out a rhesus negative retrospective studyin the Gynecology and Obstetrics department. The data was assessed and analyzed from labor room and antenatal records.

Results: Rh D negative prevalence in the pregnant women was observed as 1.4% in this research. Common most blood group was O negative (36.5%)than A negative (31.75%),B negative (23.76%) and AB blood group was found in 7.98% cases. Women parity was in the range of 0 – 18 having a mean value of (4.4±3.42), including a ninety percent of the non-booked cases without any previous record of anti-D antibody injection.

Conclusion: Negative Rhesus D alloimmunization can be prevented and it is considered as a disease that is preventable, what is required is just routine and regular check-ups, blood group Rh D negative counselling and the assured availability of the anti-D Ig in the healthcare facilities.

Keywords: Pregnancy, Alloimmunization and Rhesus-D negative.

INTRODUCTION

Rh-negative incidence in the individuals differs with the race, observed low in the China (1%) and high in Japan; Basques as (100%), where there is an origination of mutation. Rh negative incidence in the whites of North America genotype was observed as fifteen percent in comparison to the Blacks 7 – 8 percent.Alloimmunizationtotal incidence decreased in the 1990s related to the immune prophylaxis part in the small families. Common cause linked with the alloimmunization is considered as trans placental fetal to maternal hemorrhage[1].Rhesus-positive blood of the babies can be amalgamated with the rhesus-negative blood of mothers during the course of pregnancy and because of the 20th gestational age week bleeding of the vagina, makes it a threat of miscarriage, chorionic villussampling, ectopic pregnancy, amniocentesis, ablow on tummy, at birth and external cephalic version.Second repeated cause id considered a heterologous transfusion of blood in the overall setting.

In the event of 1st pregnancy, sensitizing is not considered as harmful, problems occur when a woman with Rh-negative perceives and becomes pregnant in response to the fetus with positive Rh. Erythroblastosisfetalis and in the severe case because of sensitization is potent for the neurological issues, permanent brain damage, cerebral palsy, speech andphysical disorders[2]. An empirical Anti-D Ig use has proved the reduction of Rh D immunization from a level of sixteen percent in all the women with Rh-D negative to a minimum of 0.3 percent treated with anti-D, same has also been proved through the events of sensitizing and it is also proved by the common and regular use of ante-natal anti-

Dprophylaxis during last pregnancy trimester[3]. Our research was aimed at the determination of Rh-D negative prevalence in the pregnant cases selected as population in this research; whereas, there have been no evidence traced of such nature in the available literature.

METHODOLOGY

Research objective was the Rh D negativity prevalence determination in the pregnant women of Nishtar Hospital Multan. The research was carried out a rhesus negative retrospective study in the Gynecology and Obstetrics department. The data was assessed and analyzed from labor room and antenatal records. Casefiles were also considered as vital source of data collection about the history of the patient's regarding their hospital admission. We included all the cases of labor room in our research and collected information about the name of the patient, gestational age, patient's age, patient's address, occupation, received antenatal care, parity, previous history of obstetric, anti-D received, transfusion history, scan for the anomalies observation, delivery mode, outcomes of the fetal, alive, hydrops signs, stillbirth,hydrops or stillbirth history.Rh-D and ABO are considered integrated part of hospital admission for the regular investigations about ante-natal in the labor rooms. As patients were accompanied by the family so the record of husband's blood group was not documented and there was no availability of levels of serial anti-body titer.

RESULTS

In the research duration a total of 36854 delivery cases were dealt in the obstetrics and gynecology department of Nishtar Hospital Multan; among these delivery cases Rh-D negative blood group cases were 526 with 1.4 percent prevalence rate, blood group "O" was reported as the repeated blood group in 192 patients (36.5%), blood group "A" was reported in 167 patients (31.75%), blood group "B" was reported in 125 patients (23.76%) and bloodgroup "AB" was reported in 42 patients (7.98%) through clinical investigation as reflected in the Table-I. Women parity was in the range of 0 – 18 having a mean value of (4.4 ± 3.42), including a ninety percent of the non-booked cases without any previous record of anti-D antibody injection.

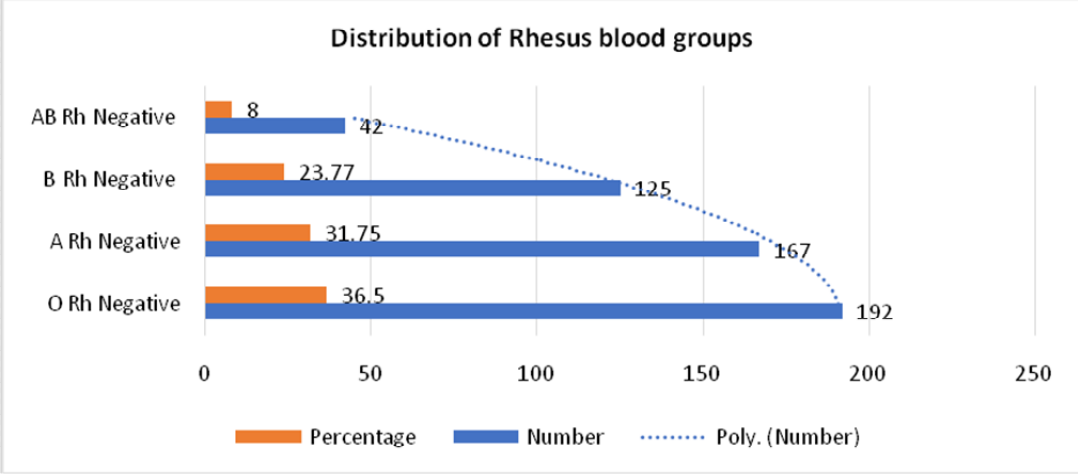
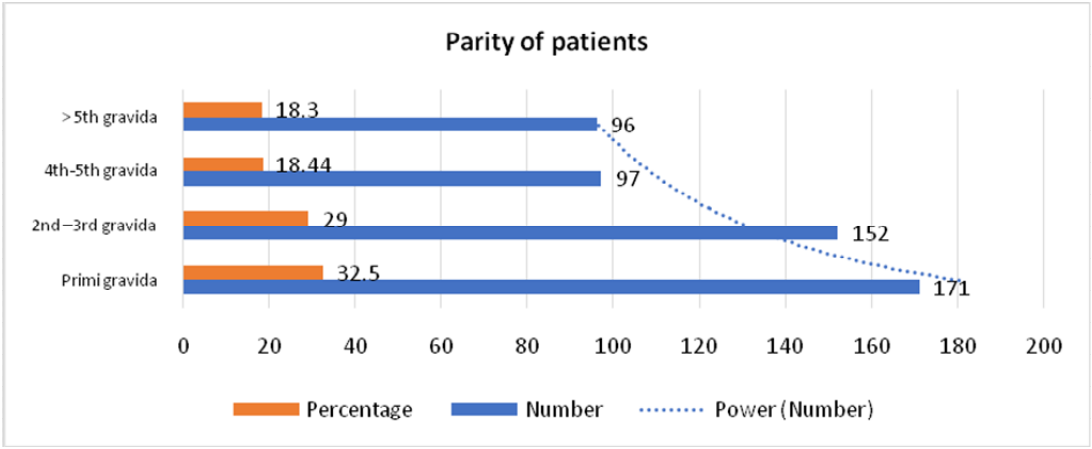


Table I: Distribution of Rhesus blood groups

Blood Group	Number	Percentage
O Rh Negative	192	36.5
A Rh Negative	167	31.75
B Rh Negative	125	23.77
AB Rh Negative	42	8

Table II: Parity of patients

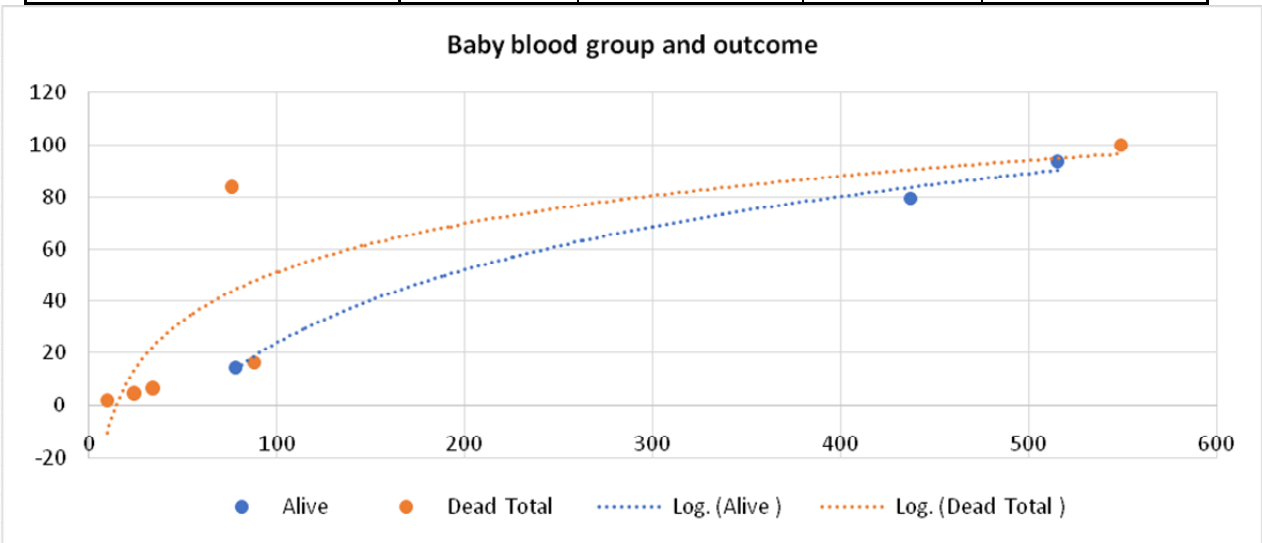
Parity	Number	Percentage
Primigravida	171	32.5
2^{nd} – 3^{rd} gravida	152	29
4^{th} – 5^{th} gravida	97	18.44
> 5^{th} gravida	96	18.3



Twin were observed as twenty-one sets and one case of triple delivery was also observed in the total of 549 infants; among them 461 cases were of Rh-D positive blood group as (84%) and 88 cases of Rh negative blood group as shown in Table-III.

Table III: Baby blood group and outcome

Rh Blood Group	Alive		Dead Total	
	Number	Percentage	Number	Percentage
Rh-Positive	437	79.6	24	4.4
			76	84
Rh-Negative	78	14.2	10	1.8
			88	16
Total	515	93.8	34	6.2
			549	100



Dead intrauterine incidence was observed in 34 cases (6.2%), hydropsfetalis cases were ten in total and three cases of hydro-ceph were also observed in the prim gravida. Proportion of male and female was respectively 298 and 251 babies.

DISCUSSION

Rh D negative prevalence in women in (Quetta,Baluchistan) was observed as 1.4 percent which is in comparison to the incidence of NorthWestern Nigeria and Nigeria respectively as 1.2% and 4.5% as referred by various authors[3]. According to the research outcomes of Karim Fet, Rh-negative and Rh-positivein southern part of Pakistani women is respectively 13.6% and 86.4%. There is variation in our country about this factor as observed in our research[4].According to the research of Bondagj NS and Bragner as they report about the prevalence in Saudi Arabia and France respectively observed as 7.5% and 15%[5].In the gained mutation the Rh-D positive in Papua Guinae is at its extreme observed cent percent and opposite to that in Basques it is at negative extreme with an incidence of cent percent[6].

Predominance of the blood group negative incidence in our research was observed as O-negative, A-negative, B-negative and AB-negative respectively as 36.5%, 31.75%, 23.76% and 7.98%. According to Karim F, O-negative and AB-negative was respectively 30.5% and 9.5%[7]. As stated by another author Touinssi, the incidence of O-negative, A-negative and AB-negative was observed as 39%, 17% and 17% respectively; whereas, in the outcomes of the French (Basques) research the incidence of B-negative was observed as 16%[8]. A dominance of O-negative was observed by Okekein the incidence of Rh-negative blood group as(64.5%). In terms of A-negative, B-negative and AB-negative respectively as 20%, 12.1% and 3.2%[9].

It was also observed that 90% cases were never booked, observed with no previous pregnancy history of an anti-D. Majority of the cases were delivered in their homes. In the total of 84% the rate of hydrops was observed as ten cases in the Rh-D positive babies, which is very unfortunate for us[10]. The rate of intra-uterine death was observed as 6.2% attributed to numerous other causes. Our research presented a very strong natural incidence of protection[11].As per the non-availability of sources or investigative tools we failed to screen the cases of all immunization; whereas, in the global perspective it is extensively studied and observed in the range of 0.4 – 2.7 percent[12]. The cell volumes and triggering potential ofalloimmunization increases in the course of pregnancy causing a significant silent all immunization in the last twelve gestational weeks[13]. Prim gravidaand multigravida were respectively 32.5% and 67.5% as observed in our research. According to Karim F prim gravida were 36.7% and multigravidas were 63.3%. Concern has been shown about the twelve deaths in the case of intra-uterine cases and there was no history of alloimmunization suggested in this case[14]. Every Rh-negative childwith Rh-positive cases were treated with 1500 IU anti-D Ig in the seventy-two hours after delivery. According to Kliehaurthe feto-maternal hemorrhage test was not available or if it was available it was very expensive[15].

For the prevention of Rhesus negativealloimmunizationin maternal cases was positive in the case of fetus, according to NationalInstitute for Health and Clinical Excellence (NICE), it is recommended that regular offers should be made to the antenatal prophylaxis including an anti-D Ig for all the Rh-D negativepregnant cases in 28th gestation week and 34thgestation week; in addition to that, after birth the babies with rhesus-positive have the association of fetal maternal hemorrhage[16]. Same has been advocated by the research literature of resourceful countries and even in the case of under-developed countries like ours.It is recommended to treat with one dose after the act of delivery when the fetus becomes Rh-positive but not in the case of feto-maternal hemorrhage[17]. It is also observed in the United

Kingdom that forty percent of the cases with Rh-D negative women also carry Rh – negativefetus and an unnecessary anti-D is treated to them[18]. There were also few limitations of our research such as absence of blood groups record of husbands, as it is a retrospective research vital and required information was not available in the documents.Low paid patients refused anti-D and also left the follow-ups[19]. Unanswered cases of one triplet and twenty-one twins were also a part of the research. Alloimmunizationtesting was not carried out as it was expensive and unaffordable.

CONCLUSION

Negative Rhesus D alloimmunization can be prevented and it is considered as a disease that is preventable, what is required is just routine and regular check-ups, blood group Rh D negative counselling and the assured availability of the anti-D Ig in the healthcare facilities.Rh-D negative prevalence was observed low in our population in comparison to the global perspective. We cannot deny the its seriousness. Sensitization is counted fatal for the mothers. Chain of intra-uterinedeaths and the incidence of an iso-immune child is considered as a challenge. People need awareness and education, ante-natal visits are also required and proper management of the Rh-Dnegative in women. We need to assure the availability of anti-D in the healthcare facilities all the time on affordable price for the patients.

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