



STUDY ON ANTENATAL AND FETAL OUTCOMES AND COMPLICATIONS IN RHESUS ANTIGEN NEGATIVE PREGNANCY IMMUNIZED AND UNIMMUNIZED AND MEASURES TO PREVENT ADVENTITIOUS ONSET

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Abstract:

This study was an ambi-directional observational study to determine the lack of awareness on Rhesus negative pregnancy. In rural population, it is observed that Rhesus Negative pregnant women suffered abortions due to Rhesus negative incompatibility. An observational study was necessary to state the incidence and prevalence of abortions in woman with Rhesus negative pregnancy. This study brings limelight on the practices which still prevail that could result in frequent miscarriages, abnormal fetus and stillbirths.

IndexTerms – Rhesus negative Antigen, Stillbirth, Erythroblastosis fetalis.

Introduction: Rhesus Negative incompatibility is the condition wherein the pregnancy as a result from female with O+ve blood group and man with O-ve blood group, could lead in pregnancy of the fetus with O-ve blood group. Thus, resulting pregnancy with fetus O-ve blood group could sensitization of the antigen present on erythrocytes. If the woman is not immunized for the antibodies thus produced after first parturition, could cause a life-threatening condition “Erythroblastosis fetalis” in fetus and anemia life condition in mother during the second pregnancy and thereafter. To avoid such untoward effects, the woman is vaccinated against Rhesus negative antigen called anti D antigen (Rh IgG). Since Rh IgG is the standard for Rhesus negative pregnancy, the risk of Rh incompatibility has been reduced to great extent.

The usual regimen include Rh IgG routinely administered once at 28-32 weeks gestation and again within 72 hours after birth to all Rh-negative pregnant females as a part of routine and postnatal care. The current recommendation is that every Rh-negative nonimmunized woman who presents to the ED with antepartum bleeding or potential feto-maternal hemorrhage should receive 300 mcg of Rh IgG IM. For every 30 mL of fetal whole blood exposed to maternal circulation, 300 mcg of Rh IgG should be administered. A lower 50-mcg dose preparation of Rh IgG is available and recommended for Rh-negative females who have termination of pregnancy in the first trimester when feto-maternal hemorrhage is believed to be minimal.

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Rhesus negative incompatibility. An observational study was necessary to state the incidence and prevalence of abortions in woman with Rhesus negative pregnancy.

Aim and Objectives: To study the perinatal and fetal outcomes and complications in Rh negative pregnancy (immunized and unimmunized); and measures to prevent the adventitious onset through patient counseling.

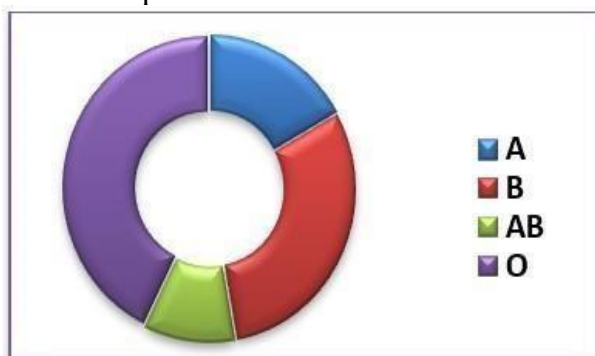
Methodology: A 12 months ambi-directional study was conducted among women of Rh negative pregnancy with incompatible mating reported at the ESI hospital, Sanathnagar @ Nacharam, Hyderabad. Previous abortions, mode of delivery and still birth, birth weight, APGAR were considered as maternal and fetal parameters respectively.

Different study materials used for carrying out the study were:

- Data collection form.
- Patient prescriptions.
- Patient counseling with patient information leaflets (PIL).
- APGAR scoring system.

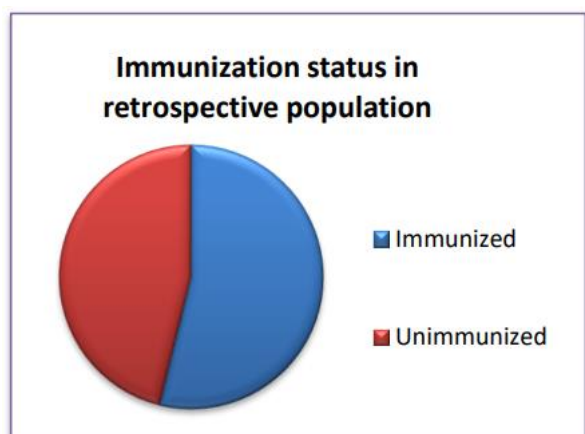
Results:

Blood Group:



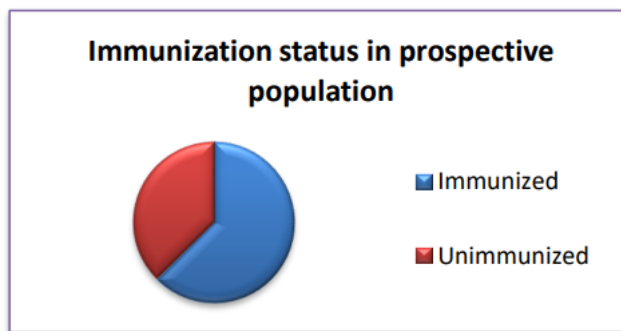
A Blood Group - 16.8 %
B Blood Group – 30.33 %
AB Blood Group – 10.11 %
O Blood Group – 42.69 %

Immunization Status:
Retrospective Aspects



Immunization status in retrospective population	
Immunized	35
Unimmunized	30

Prospective Aspects:



Immunization status in prospective population	
Immunized	15
Unimmunized	9

Obstetric Status:

Retrospective Status:

Obstetric status	Population size	% of population
Primi	10	15.38
G2	29	44.61
G3	21	32.30
G4	04	6.1
G5	00	0
G6	01	1.5

Prospective Status:

Obstetric status	Population size	% of population
Primi	7	29.16
G2	7	29.16
G3	8	33.33
G4	1	4.16
G5	1	4.16
G6	0	0

Prevalence of Abortions in Different Gravida: Retrospective Aspects:

Gravida	Population size	% of population
G2	07	18.42
G3	19	50
G4	09	23.68
G5	00	0
G6	03	7.89

Prospective Aspects:

Gravida	Population size	% of population
G2	0	0
G3	11	68.75
G4	2	12.5
G5	3	18.75
G6	0	0

Neonatal Complications: Retrospective Aspects:

Complication	Population size	% of population
Still births	4	11.42
Fetal hydrocephalus	1	3.33
Multiple clots	1	3.33
Severe anemia	1	3.33
Down's syndrome	1	3.33

Prospective Aspects:

Complication	Population size	% of population
Still births	4	25
Pulmonary insufficiency	1	6.25

Comparison of Birth Weight of Fetus in Immunized and Unimmunized: Retrospective Aspects:

Birth weight	Population of unimmunized with respective %'s		Population of immunized with respective %'s	
≤ 2	2	6.66	1	2.85
≤ 2.5	9	30	7	20
≤ 3	9	30	14	40
> 3	1	3.33	5	14.28

Prospective Aspects:

Birth weight	Population of unimmunized with respective %'s		Population of immunized with respective %'s	
≤ 2	0	0	0	0
≤ 2.5	3	16.66	2	12.5
≤ 3	3	16.66	6	37.5
> 3	0	0	5	31.25

Comparison of Hemoglobin in Immunized and Unimmunized: Retrospective Aspects:

Hemoglobin	
Immunized	15.93 +/- 3.14
unimmunized	13.714 +/- 3.95

Prospective Aspects:

Hemoglobin	
Immunized	17.551 +/- 2.41
unimmunized	17.44 +/- 2.51

Comparison of Hemoglobin in Immunized and Unimmunized: Retrospective Aspects:

Total Bilirubin	
Immunized	10.85 +/- 3.64
unimmunized	11.27 +/- 2.56

Prospective Aspects:

Total Bilirubin	
Immunized	17.551 +/- 2.41
unimmunized	17.44 2+/- 2.51

Comparison of APGAR of neotanes in Immunized and Unimmunized: Retrospective Aspects:

APGAR Scoring	Unimmunized population	Immunized population
4/7	1	0
5/7	0	1
6/7	0	1
7/8	0	0
7/9	4	8
7/10	1	0
8/9	8	10
8/10	8	10
9/10	0	0

Prospective Aspects:

APGAR Scoring	Unimmunized population	Immunized population
4/7	0	0
5/7	0	1
6/7	0	0
7/8	0	0
7/9	2	1
7/10	0	0
8/9	3	9
8/10	1	4
9/10	0	0

Discussion:

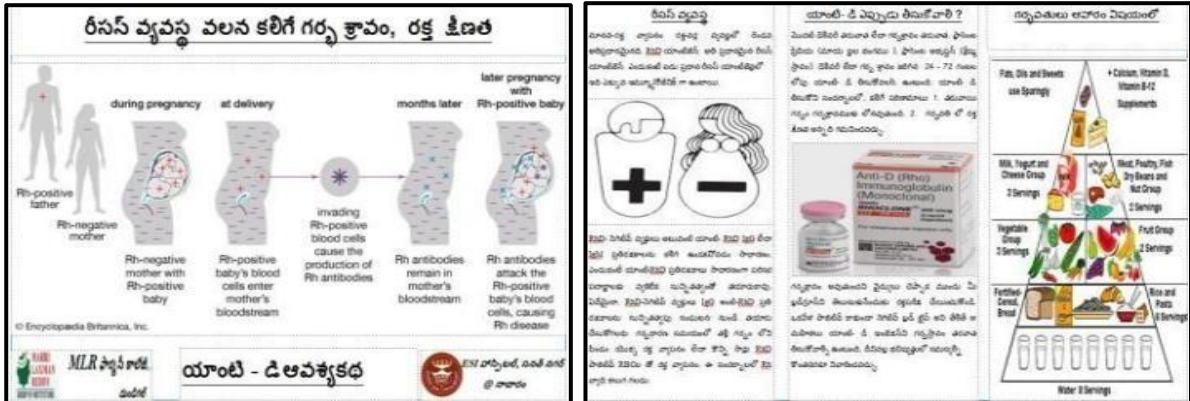
- Among the 89 enceintes included, 56.17% were immunized (administered with anti-D) while unimmunized were 43.82%, similar scenario was observed in study performed by Idowu, O.A et al who observed 87.5% of the Rhesus negative primigravidae delivered at the TBH without being given the post partum injection of anti-D-gama globulin within 72 h of delivery and in contrast to the study performed by shradha et al in which 48 out of 51 booked patients received routine antenatal anti-D prophylaxis in contrast to only 8 out of 99 unbooked patients. 3 of booked patients refused it because of the cost factor. 94 patients received post-natal prophylaxis with 300 mg antiD.
- In the current study, it was observed that most of the pregnant belonged to the age group ≤ 25 with 58.42% of the population which was very much similar to studies done by Idowu et al, shardha et al, bhavani bhagat et al, which had 90%, 44% , 69.5% of the population at the age ≤ 25 years respectively.
- Most of the study population was second and third gravid with 76.91% and 62.49% respectively. The similar phenomenon was observed in studies performed by Bhavani bhagat et al with 47.5% at third gravid, shradha et al with 24% at second gravida.
- The still births have been the most common fetal complication in the current study with 19.10% while study done by shradha et al had 3.3% neonatal death and 2.7% intrauterine death as their fetal complications; study by khatun J at al showed 4% still birth, 4% neonatal death, 14% with erythroblastosis foetalis and 4% developed hydrops as fetal complications
- The study exhibited that hemoglobin in immunized was greater than in unimmunized population with average of 16.74 mg/dL. Study conducted by shradha et al reported there were several cases

of neonatal anemia.

- In our study there was prevalence of hyperbilirubinemia in both immunized and unimmunized population of the study with bilirubin levels ranging around 12-13 mg/dL. shradha et al found hyperbilirubinemia was very common in their study. In study done by prof. Sebija Izetbegovic, at General hospital “Prim. dr. Abdulah Nakas” found many such cases that were unimmunized rhesus negative pregnant with severe hyperbilirubinemia babies.

Conclusion:

Importance of Anti-D:



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