OPEN ACCESS
Scholars International Journal of Obstetrics and Gynecology
Abbreviated Key Title: Sch Int J Obstet Gynec
ISSN 2616-8235 (Print) |ISSN 2617-3492 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://scholarsmepub.com/sijog/

Original Research Article

Rhesus Negative Mother and Perinatal Outcome

Dr. Alakananda[1], Dr. Meghna Das[2], Dr. Manali Paul[3*]

[1]Professor, Department of Obstetrics and Gynecology, Gauhati Medical College and Hospital, Guwahati, Assam, India
[2]Assistant Professor, Department of Obstetrics and Gynecology, Gauhati Medical College and Hospital, Guwahati, Assam, India
[3]3rd Year Post Graduate Trainee, Department of Obstetrics and Gynecology, Gauhati Medical College and Hospital, Guwahati, Assam, India

DOI: 10.36348/sijog.2019.v02i11.006 | **Received:** 16.11.2019 | **Accepted:** 23.11.2019 | **Published:** 28.11.2019

***Corresponding author:** Dr. Manali Paul

Abstract

Background: Rhesus incompatibility is a preventable cause for severe neonatal hyperbilirubinemia, hydrops fetalis and still births. The prevalence of the Rh-negative blood group among Indian woman varies from 2%-5%. Despite declining the incidence of Rhesus incompatibility, due to availability of anti-D immunoglobulin, and improved antenatal care of the Rh-negative pregnant woman, it still accounts for a significant proportion of neonatal hyperbilirubinemia and morbidity. ***Objectives:*** To study the perinatal outcome in Rhesus negative Pregnancies. ***Methodology:*** This prospective observational study was conducted in a tertiary hospital. Women with Rh Negative Blood group admitted for delivery were enrolled. Baby's Blood Group, Birth weight, TSB levels, duration of phototherapy or exchange transfusion, duration of NICU admission, and other investigations were recorded in a predesigned, pretested proforma. ***Conclusion:*** Over the 20th century, Rh isoimmunization was clinically recognized, its pathophysiology was understood, its treatment was established, and preventive measures were created to eliminate it. Awareness should be increased amongst health care providers regarding RAADP and prophylaxis after MTP, abortion, ectopic pregnancy in Rh negative blood group, and importance of Antenatal Care and importance of Rh typing in pregnancy.

Keywords: Rh Negative Pregnancy, Immunoprophylaxis, Isoimmunisation, Hydrops Fetalis.

INTRODUCTION

Fetomaternal bleeding can occur all throughout pregnancy and during delivery independent of presence or absence of any risk factors. But, for sensitization to occur, significant amount of feto-maternal haemorrhage should occur, i.e. after a primary stimulus of more than 0.5 ml of foetal blood and a booster dose of more than 0.1 ml [6]. In the maternal circulation, fetal RBCs are destroyed by the reticulo-endothelial system. Initially, IgM antibodies are produced which are short lived and cannot cross placenta. So immunization during the first pregnancy is unlikely. Subsequently it leads to IgG mediated secondary immune response which can cross placenta causing destruction of fetal RBCs and erythroblastosis fetalis results [7].

AIM

To study the perinatal outcome in Rhesus negative Pregnancies

MATERIALS AND METHODS

The present study is a prospective observational study conducted in the Department of Obstetrics and Gynecology, Gauhati Medical College and Hospital, Guwahati. 100 pregnant women with Rh negative blood group admitted for delivery were taken up for the study during the period of April 2018 to July 2019. Baby's blood group, DCT, Hb% and TSB values were recorded. Descriptive statistics such as percentage were calculated for categorical variables. Pie chart was used for visual representation of analyzed data. Ethical committee clearance was taken before recording data on proforma.

RESULTS

There were total of 14,000 deliveries conducted during the study period starting from 1st April 2018 to 31st July 2019. Out of these, 380 were Rh negative pregnancies. 5 cases were found isoimmunised

in our study. Incidence of Rh negative in our institute is 3%. In our study, 60% cases were unbooked and isoimmunisation was seen in the Multigravida cases.

Table-1: Parity Distribution

Parity	No. of cases	Percentage %
Nullipara	40	40%
Primipara	35	35%
Multipara	25	25%
Total	100	100%

40% cases in our study were nulliparous which was more than primipara and multipara.

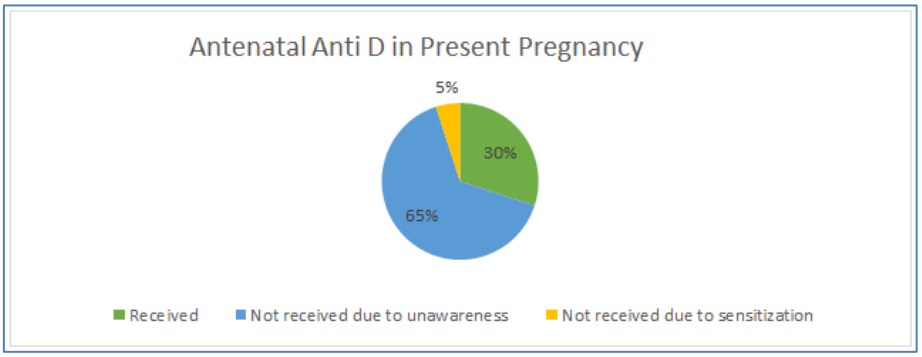

Fig-1: Pie diagram showing Antenatal Anti D prophylaxis in Present Pregnancy

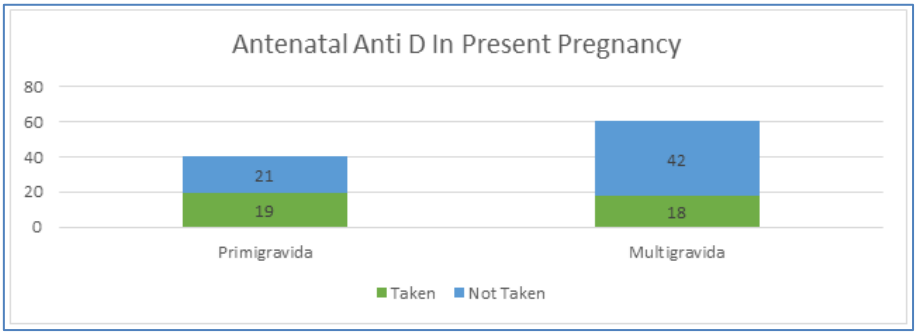

Fig-2: Cluster Bar diagram showing Antenatal Anti D prophylaxis in present pregnancy in relation to gravida

Table-2: Maternal Status of Sensitization

Status	No. of Cases	Percentage%
Sensitized	5	5%
Not Sensitized	95	95%
Total	100	100%

In our study, 5% cases were sensitized i.e. they were Indirect Coombs Test Positive

Table-3: Outcome of newborn babies

Neonatal Outcome	No. of Babies	Percentage%
Neonatal Anemia	3	3%
Jaundice at Birth	55	55%
NICU Admissions	40	40%
Hydrops Fetalis	2	2%
Total	100	100%

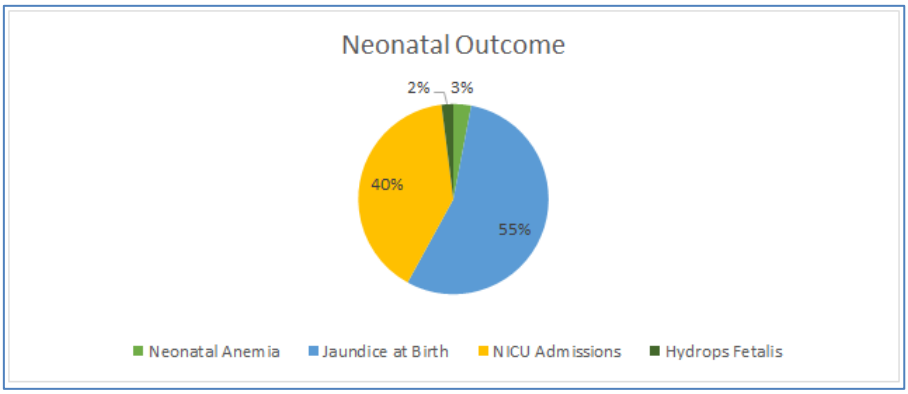

Fig-3: Pie diagram showing neonatal outcomes

Table-4: Neonatal Interventions Done

Neonatal Intervention	No. of Babies	Percentage%
TSB Monitoring	60	60%
Phototherapy	20	20%
Exchange Transfusion	20	20%
Total	100	100%

Routine TSB monitoring was done for 60% cases, 20% required phototherapy and 20% required exchange transfusion.

DISCUSSION

In our study, it was seen that the incidence of Rh negative pregnancy was around 3%, which is similar to the national average of 3% to 5%, in the study done by Rama *et al*.[1] in 2015 showed incidence of Rh negative pregnancy to be 4% and 3% in Andhra Pradesh and West Bengal respectively.

In the study by Shradha *et al*. [2] 2016 found 51.5% cases were multigravida, and studies by Chito *et al*. [3] 2017, Rama *et al*. 2016 also showed that Multigravida cases were more common and was found to be 65.2% and 58% respectively. In our study too, it was found that 60% cases were multigravida.

In our study it was found that 60% cases were unbooked and 40% cases were booked. In studies conducted by Chito *et al*. 2016 also showed 73% cases were unbooked. And studies conducted by Raghad *et al*. [4] 2017 and Joseph *et al*. [5] 2017 also showed that 55% cases and 74% cases were unbooked. Thus unbooked cases were more common in the studies which reflect the situation of unawareness in our society.

In our study it was seen that only 37% cases had antenatal Anti D prophylaxis and the rest 63% did not receive it. It was seen that Antenatal Anti D prophylaxis was mostly given to the booked cases as they were regular institutional follow up. Similar results were shown by the studies done by Trina *et al*. [8] 2014 and Shradha *et al*. 2016 where Antenatal Anti D prophylaxis was given to 30% cases and 34% cases respectively.

In our study, it was seen that 5% cases were sensitized i.e. they were ICT positive, 2 of them had titres more than the critical titre and rest 95% were not sensitized. All the 5 sensitized cases in our study were multigravida and had never taken any form of Anti D prophylaxis in previous or present pregnancy and were unbooked cases. Studies did by Rama *et al*. 2016 and Agrawal *et al*. 2016 also showed similar results where 4% and 5% cases respectively were sensitized.

In our study it was seen that 60% babies required routine bedside TSB monitoring whereas 20% babies required Phototherapy and 20% babies required Exchange Transfusion in NICU. Studies done by Rama *et al*. 2016, George *et al*. [9] 2015 and Shradha *et al*. 2015 also showed similar results where 80% babies, 78% babies and 65% babies respectively required routine bedside TSB monitoring and the rest 20% cases, 22% cases and 35% cases respectively required phototherapy and exchange transfusion in NICU.

CONCLUSION

Over the 20th century, Rh isoimmunization was clinically recognized, its pathophysiology was understood, its treatment was established, and preventive measures were created to eliminate it. Unfortunately, the incidence of this disease is decreasing at a very slow place in India, in part because of lack of adequate medical information on it and vast degree of unawareness of its importance amongst the general public and in part because of the high cost of medication used to prevent it. Increased morbidity in term of congenital anemia and jaundice poses a great burden to medical professionals leading to increased NICU admissions, phototherapy and need for exchange transfusion. Perinatal and neonatal morbidity and mortality is also significantly higher.

Routine antenatal prophylaxis with 300 mcg at or around 28th weeks followed by 300 mcg within 72 h of delivery is recommended. 50 mcg of anti-D injection must be given after any sensitizing event in the first trimester. There should be increased awareness among doctors for RAADP and prophylaxis after MTP, abortion, ectopic pregnancy, etc., which is still lacking.

REFERENCE

1. Devi, G. R., Patnaik, U. S., & Usha, P. (2016). Prevalence of rh negative pregnancy in antenatal women with evaluation of maternal and foetal outcome. *Evid Based Med Health*, *3*(98), 5400-5403.
2. Shradha, Moitra, B., Kumari, A., & Sahay, P. B. (2016). Obstetrical and Perinatal Outcome in Rhesus Antigen Negative Pregnancy. *International journal of scientific STUDY*, *3*(11), 124-129.
3. Eleje, G. U., Ilika, C. P., & Ezeama, C. O. Feto-maternal outcomes of women with Rhesus iso-immunization in a Nigerian tertiary health care institution. *J Preg Neonatal Med 2017; 1 (1): 21-27. 22 J Preg Neonatal Med 2017 Volume 1 Issue*, *1*, 3.
4. Aljuhaysh, R. M., El-Fetoh, N. M. A., Alanazi, M. I., Albaqawi, A. S., Alanazi, W. M., Alanazi, N. S., ... & Alabdullatif, T. K. (2017). Maternal-fetal Rhesus (Rh) factor incompatibility in Arar, northern Saudi Arabia. *Electronic physician*, *9*(12), 5908.
5. Agarwal, S., Seema, Sharma, S., Chaudhary, V., Bala, S., & Umesh. (2016). Rh negative

pregnancy: maternal and perinatal outcome in bundelkhand region. *Journal of evolution of medical and dental sciences-jemds*, *5*(71), 5165-5168.

6. Greer, J.P., Foerster, J., Lukens, J., Rodgers, G., Paraskevas, F., Glader, B. (2003). Autoimmune Hemolytic Anemia. In: Neff A, editor. Wintrobe's Clinical Hematology. 11. USA: Lippincott Williams & Wilkins Publishers, 2003: 2363–2372.
7. Witebsky, E., Rubin, M. I., Engasser, L. M., & Blum, L. (1947). Studies in erythroblastosis fetalis: II. Investigations on the detection of sensitization of the red blood cells of newborn infants with erythroblastosis fetalis. *The Journal of laboratory and clinical medicine*, *32*(11), 1339-1349.
8. Costumbrado, J., Mansour, T., Ghassemzadeh, S. (2019). Rh Incompatibility. [Updated 2019 Jun 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing, Jan
9. Eleje, G. U., Ilika, C. P., & Ezeama, C. O. Feto-maternal outcomes of women with Rhesus iso-immunization in a Nigerian tertiary health care institution. *J Preg Neonatal Med. 2017; 1 (1): 21-27.*