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Research Article

Evaluation of Incidence, Causes and Management of Neonatal Jaundice in Abia State Teaching Hospital Aba, Nigeria

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Abstract

Background: Jaundice is the yellow discoloration of the skin and sclera that result from raised level of bilirubin in the blood and the commonest complication among newborn infant in Nigeria. When a baby has jaundice, either too much bilirubin is being produced or the liver does not get rid of it quickly enough due to immaturity of the liver.

Objectives: The objectives were to ascertain the incidence, risk factors, management and preventive measures of neonatal jaundice.

Methodology: Past medical record of the neonates from 2016 to 2018 were gotten from labor and Postnatal wards, and nursery units. Questionnaires were also used to collect data from nurses working in the same wards to ascertain the accuracy of the data collected.

Results: The study revealed that neonatal jaundice is on the increase and had the highest incidence between 2016, On the causes of neonatal jaundice,40 (80%) said enzyme deficiency increase red blood cell breakdown, while 10(20%) of the respondents said that ABO incompatibility. On prevention, respondents agreed that putting baby to breast immediately after birth, administration of phenol barbitone prevents neonatal jaundice, 40(80%) had the highest response. 8(16%) respondents agreed that health educating the mother on breasting feeding, while 42 (84%) agreed that early detection and proper treatment given with phototherapy or exchange blood transfusion increases the chance of survival.

Conclusions: To ascertain the incidence of neonatal jaundice in Abia State Teaching Hospital Aba between 2016-2018, The researchers concluded that this conduction is on increase and require intervention of health workers through health education, early antenatal visit, periodic check up of the pregnant women and prevention of toxic drugs.

Keywords: Jaundice; Neonate; Incidence; Evaluation

Abbreviations

NBSCU: New Born Special Unit; HDN: Haemolytic the Disease of the Newborn

Background of Study

Bilirubin, a bright yellow-orange bile pigment resulting from the breakdown of haemoglobin (waste product), it is fat solute and unconjugated and excreted through the biliary system, but when this normal phenomenon fails to take its natural course in neonate that is either due to transportation problem, inability of the liver to secrete glucuronyl transferase for conjunction or when the conjugated bilirubin cannot be excreted via the biliary system into the small intestine, staining of the skin will occur (jaundice), yellow discoloration of the sclera, extreme weakness,

refusal to breast feed. This condition is mostly seen during a first few days of baby's life. In neonates, jaundice is considered to be either physiological or pathological, Physiological jaundice appears approximately 48hours after birth while Pathological jaundice appears immediately after birth and last longer. Other kinds of jaundice are breath milk jaundice seen on breast fed babies but of little significance due to the substance produced in the mothers breast milk that rises the bilirubin level above 20mg. Naturally, all neonates have a transient rise in serum bilirubin in the first weeks of life and about half of term babies become obviously jaundiced though this varies in races. Jaundice is a very common complication of neonates and a major disease in infants were many of all full term infant present with non-haemolytic hyperbilirubinemia which is higher in healthy premature babies with a weight below 1.5 kg. The underlying cause enable a prediction of the bilirubin and allowing anticipating treatment, in severe haemolysis laboratory investigations will assist to determine the level of bilirubin both conjugated and unconjugated. Phototherapy is used to prevent the concentration of unconjugated bilirubin in the blood from reaching levels where neurotoxicity may occur, the neonates skin surface is exposed to high intensity light, which photochemically converts fat soluble unconjugated bilirubin into water soluble bilirubin. Excess bilirubin is removed from the baby during a blood exchange transfusion, the haemolytic disease of the newborn (HDN) sensitized erythrocytes are replaced with blood compatible with both the mothers and the infant serum. Phenobarbitone has been demonstrated to be effective in preventing or reducing the severity of neonatal jaundice by rapid induction of glucuronyl transferease together with increase level of ligandin, thus improving the efficiency of conjugation.

Materials and Methods

Study area

Abia State Teaching Hospital Aba is located in Aba South Local Government Area, is bounded by Umagasi Road, along Aba owerri Road and along Afule market. It has many departments, which include, maternity section and public health unit while the general section has the causalty department, main theatre, mental health unit, female medical, surgical ward, male medical, surgical ward paediatrics unit and x-ray department and offices. Also nursery unit, postnatal ward, labour ward, antenatal clinic, family planning, infant welfare clinic and maternity theatre while public health unit comprises, the chest unit and HIV/AIDS department. It has necessary amenities; water and light supply are irregular.

Study population

The target population are neonates 0-28days who were born within the study scope, but the pertinent data to the study were collected from past records and from nurses working in Labor and Postnatal wards and Nursery unit.

Sample size

Four objectives and 7 structured questionnaire were employed to generate data from 50 respondents that were selected, the researchers also made use of past medical records gotten from the hospital record office. The research design used was descriptive survey design to select the sample size of 50 and the researchers used simple random sampling to choose the nurses (respondents) working in studied wards/units, A total of 60 nurses were given equal chance to participate in the exercise with the sample size of 50 nurses. Balloting without replacement method was used where by pieces of papers with numbers written on them where folded and dropped in a container for the 60 nurses to pick, those who picked the paper bearing number from 1-50 where selected.

Inclusion and exclusion

The researchers included the neonates born within the years of the study (0-28 months) who were diagnosed and treated of neonatal jaundice in this hospital. All other children were excluded from the study.

Ethical consideration

The hospital consented and granted ethical approval for the research after going through the ethical committee assessment, although they assigned their staff to collect the data from the files of the patients to maintain confidentiality. With the use of questionnaire, the researchers also assured the respondents (nurses) that any information given by them must be treated with maximum confidentially and will be used for academic research before distributing.

Instrument for data correction

The researcher made use of past medical record gotten from Maternity and Postnatal wards, and nursery unit. Questionnaire were also used to collect data from nurses working in the above wards and unit mentioned above. The questionnaire which contained structured and unstructured questions, section A

is made up of demographic data while section B is made up of questionnaire and respondents responses to it.

Results

Age in years	No of respondents	Percentage %
21-30	14	28%
31-40	20	40%
41-50	10	20%
50 and above	6	12%
Total	50	100%

Table 1: Showed the age distribution of the respondents.

Education qualification	No of respondents	Percentage %
SSCE	-	-
OND	4	8%
HND	34	68%
MASTERS	12	42%
TOTAL	50	100%

Table 2: Showed the educational qualifications of respondents.

Working Experience	No of respondents	Percentage %
1-5	20	40%
6-10	8	16%
11-20	10	20%
21 and above	12	24%

Table 3: Showed the years of working experience of respondent.

The incidence of neonate Jaundice with within 2016-2018

Name of ward	2016	2017	2018
Labour ward	18	12	10
Postnatal Ward	20	14	12
Nursery Unit	10	15	28
Total	48	41	50

Table 4: Showed the incidence of neonatal Jaundice.

From the above record collected, Labour ward had total of 18 cases of neonatal Jaundice in 2016, 12 in 2017 and 10 in 2018, while postnatal ward had 20 in 2016, 14 in 2017 and 12 in 2018 than nursery unit had 10 in 2016, 15 in 2017 and 28 in 2018.

The year that had the highest incidence of neonatal Jaundice within 2016 -2018

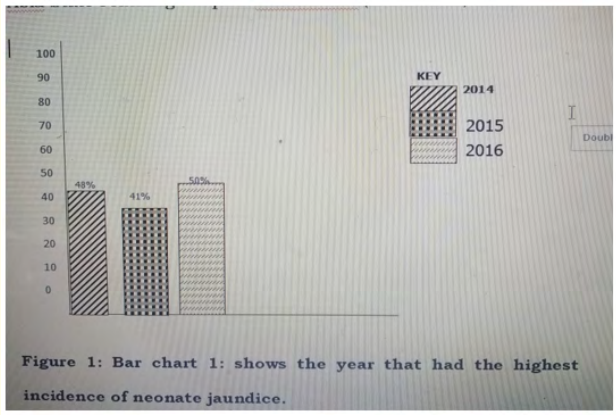

Figure 1: Bar chart 1 above showed the year that had the highest incidence of neonate jaundice.

The above figure showed that 2016 had 48%, 2017 had 41% and 2018 had 50% and with the highest incidence.

Cause or predisposing factors of neonatal jaundice within the study years

Response	No of respondents	Percentage %
ABO in compatibility, Rhesus incompatibility, premature baby	10	20%
Enzyme deficiency, increase red blood cell break down	40	80%
Post maturity	-	-
Total	50	100%

Table 5: Showed the causes or predisposing factors of neonatal jaundice.

The above table showed that out of the total number of 50 respondents, 40 (80%) ticked enzyme deficiency and increased blood cell breakdown. 10 (20%) ticked ABO incompatibility/ Rhesus incompatibility while 0% ticked post maturity.

Measures to reduce the reoccurrence of neonatal jaundice

Responses	No of respondent	Percentage %
Yes	50	100%
No	-	-
Total	50	100%

Table 6: Showed if there are measures to use in reducing the occurrence of neonatal jaundice.

The above table showed that all the respondents believed that the condition can be reduced or cured 50 ticked yes 50(100%) while non 0% ticked No.

Responses	No of respondents	Percentage %
Weighing the baby immediately after birth	-	-
Putting baby to breast immediately after birth administering of phenobarbitone	10	20%
Detection of Rhesus negative mother and	40	80%
Drug to non sensitize women after birth or only abortion had	-	-
Total	50	100%

Table 7: Showed the exact measures taken to reduce the occurrence of neonatal jaundice.

From the above table none of the respondents 0% ticked statement A, while 10(20%) chose B and 40 (80%) respondents ticked statement C. Showing that most of the respondents believed that rhesus check and administration of drug after delivery for rhesus negative play a role in reducing neonatal jaundice.

Management for neonatal jaundice in the hospital setting

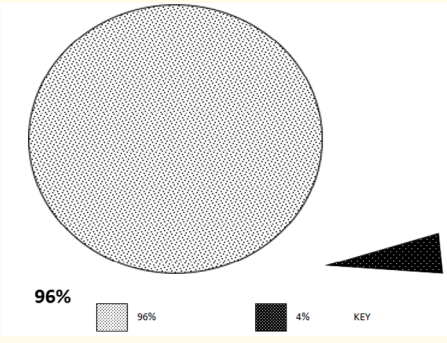

Figure 1: Bar chart 1 above showed the year that had the highest incidence of neonate jaundice.

Response	No of respondents	Percentage %
Early detection and prompt treatment given with phototherapy exchange blood transfusion	42	84%
Health educating the mother on breast feeding	8	16%
Isolating the affected babies	-	-

Table 8: Showed the management of neonatal Jaundice in hospital setting.

From the table above, out of total number of 50 respondents representing 42(84%) said early detection, prompt treatment and phototherapy are the measures to treat the condition while 8(16%) said health education on breast feeding.

Discussion

From the analysis, neonatal jaundice is on the increase with the highest incidence on 2016. Most respondents agreed that enzyme deficiency increase red blood cell breakdown thereby putting the neonates at risk of the condition. Most respondents agreed putting baby to breast immediately after birth and administration of phenol barbitone prevents neonatal jaundice while 40(80%) respondents agreed that detection of Rhesus negative mother and administration of immunoglobulin D drug to non sensitized women after birth or any abortion prevents the condition. Respondents also agreed that, health educating the mothers on breasting feeding, early detection and proper treatment given with phototherapy or exchange blood transfusion can help in treatment of neonatal jaundice. From the analysis of the research work the researchers found out that neonatal jaundice is commonest complication among newborn infant Abia state teaching hospital Aba ABSUTH. Neonatal jaundice poses a challenge to the hospital practice health practitioners, have effect on the infant growth and development so the nurses should be at alert to detect a baby with jaundice and apply preventive and curative measures to reduce the incidence [1-15].

Conclusion

In conclusion neonatal jaundice is a yellow discoloration of the skin and sclera in the neonate that result from raised level of bilirubin in blood. The researchers motioned that all the respondents have knowledge of what neonatal jaundice is and in order to tackle the problem, possible risk factors should be prevented to reduce infant morbidity and mortality rate. Also, organization of

seminars and workshop on jaundice for obstetricians, midwives and paediatricians to update their knowledge on neonatal jaundice should be adopted.. Government should made health care affordable, accessible, avoidable and acceptable to the pregnant women in the community to enhance early dictation and even to come for hospital admission when their babies are sick. Also all pregnant women design should check their genotype to prevent any sensitization during delivering and prompt management given to affected baby (ies).

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Conflict of Interest

The authors clarified that no conflict of interest identified and it was a team research work.

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