Nigerian Journal of Clinical Practice
June 2009 Vol 12(2):187-191

PERCEPTION OF NEONATAL JAUNDICE AMONG WOMEN ATTENDING CHILDREN OUT PATIENT AND IMMUNIZATION CLINICS OF THE UPTH PORTHARCOURT

AU Eneh, RO Ugwu

Department of Paediatrics and Child Health, University of Port Harcourt Teaching Hospital, Port Harcourt

ABSTRACT

Background: Neonatal Jaundice (NNJ) is a common disorder worldwide. Early identification and proper management is needed to prevent the serious neurological complications associated with it.

Objective: To determine the knowledge of the women attending Children Outpatient (CHOP) and Immunization clinics on the causes, treatment and complications of neonatal jaundice.

Method: Women who brought their children/wards to the immunization/ children out patient clinics at the University of Port Harcourt Teaching Hospital Port Harcourt were interviewed using structured questionaire.

Results: There were 255 mothers who participated in the study. Of these 30 (11.8%) have never heard of neonatal jaundice while 225(88.2%) have heard and only those who have heard were further analyzed. The age range was from 16 to 47yrs (mean age 27.1 ±3.3 years). Median parity was 2. One hundred and twenty two (54.2%) women had tertiary education. One hundred and seventy four (77.3%) correctly defined neonatal jaundice, and in 114 (44.7%) source of information was from health talk in the clinic. Seventy five (33.3%), and 50 (22.2%) erroneously believed that eating too much groundnut in pregnancy and mosquito bite respectively were the main causes while 55 (24.4%) correctly answered that it is due to mismatch of mother and baby's blood. Only a few knew that use of dusting powder on baby's cord , prematurity, and storing baby's clothes in camphor were risk factors for NNJ. One hundred and fourteen (50.7%) and 60 (26.7%), wrongly believed that exposure to sunlight and use of glucose drinks respectively were the main forms of treatment and 50 (22.2%) knew brain damage as a possible complication

Conclusion: There is still misconception on the causes and risk factors and treatment of neonatal jaundice among our women. Also only a few women are reached by the health talk in the clinics. There is therefore urgent need for massive health enlightenment campaign.

Key Words: Neonatal jaundice, mother's knowledge and perception. *(Accepted 13 May 2008)*

INTRODUCTION

Neonatal Jaundice (NNJ) is a common disorder worldwide affecting 30-70% of newborn infants.[1-4] In Nigeria it is common and often associated with serious complications .[5-12] Even moderate neonatal hyperbilirubinaemia may lead to some neurological damage. However, severe cases lead to brain damage (Kernicterus) [4,13,14]. It is a leading cause of neonatal mortality among Nigerian children.[15,16] Various studies in Nigeria show that the main aetiological factors in Neonatal Jaundice include Glucose-6-Phosphatase Dehydrogenase(G6PD) deficiency, infection, prematurity, ABO blood group incompatibility [5,6,7,17] exposure to icterogenic drugs eg cotrimoxazole , pyrimethoprine/sulphamethoxazole and chemicals eg insecticides [7,18] Significant exposure to naphthalene, insecticides, mentholathed balms and powders and traditional herbs have been found to be important risk factors in G6PD deficient babies [19,20].The main treatment of Neonatal Jaundice is phototherapy and Exchange Blood Transfusion (EBT). Delay and improper treatment is often associated with high morbidity and mortality. [7,9,11] In order to prevent the onset of bilirubin encephalopathy, it is important that effective therapy is commenced early. Our personal observation in University of Port Harcourt Teaching Hospital (UPTH) on Neonatal jaundice suggests that there is a delay in seeking treatment as a result of using ineffective remedies before coming to hospital. Whether this is as a result of lack of awareness or inadequate knowledge is not known. The present study was therefore undertaken to assess the

Correspondence: Dr A U Eneh
E-Mail:austaeneh@yahoo.com

knowledge of the women attending CHOP and Immunization clinics on the causes, treatment and complications of neonatal jaundice.

SUBJECTS AND METHODS

The study was carried out at the immunization and children out patient clinics of the University of Port Harcourt Teaching Hospital (UPTH) in the South Southern part of Nigeria from 1st October to 30th November 2006.The subjects comprised women who brought their children/wards to these clinics. The study was undertaken using structured questionnaire developed by the authors. The instrument was pilot tested on 10 mothers and was revised to remove ambiguity and ensure clarity of the questions. The main survey was conducted by two trained house officers in the department of Paediatrics under supervision of the authors. The questions sought information from the respondents on their ages, educational status, knowledge of jaundice, source of information, causes and risk factors of jaundice, treatment and probable complications. Informed consent was obtained from the respondents. Adequate guidance on how to answer the question was given to the subject, with care being taken so as not to influence the response.The data was analyzed using SPSS version 11.Data was summarized as descriptive statistics namely mean, median, Standard Deviation (SD) and percentage. Chi-square test was used for comparison of proportions and where figures were small the Fisher's exact probability test was applied. The level of statistical significance was set at $p = 0.05$. Ethical approval was obtained from the Ethical Committee of the University of Port Harcourt Teaching Hospital, Port Harcourt.

RESULTS

There were 255 mothers who participated in the study. Of these 30 (11.8%) said they have never heard of neonatal jaundice while 225(88.2%) have heard and only those who have heard were further analyzed. The age range was from 16 to 47yrs (mean age 27.1 ±3.3 years). Table 1 revealed that the majority 37.8% were in the age range 26 30 years. Median parity was 2. Most of the women 122 (54.2%) had tertiary education, while 64 (28.4%) and 39 (17.3%) had secondary and primary educations respectively. One hundred and seventy four (77.3%) respondents correctly defined neonatal jaundice as yellowish discolouration of the eye and skin, 20 (8.9%) answered that it was “baby passing too much urine”, 12 (5.3%) replied that it was when the baby was “off colour”, 6 (2.7%) respectively answered that it was when baby is pale and bluish discolouration while the remaining 7 (3. %) had various answers such as eye discharge , convulsions etc. The sources of information for 114 (50.7%) respondents was from health talk in the clinic, 70 (31.1%) from friends, neighbours and relatives, 21(9.3%) read it from books while mass media and other sources (eg pharmacist, church) was in 10 (4.4%) respectively. Table 2 lists the causes and risk factors of neonatal jaundice as given by the respondents. Seventy five (33.3%) respondents said that eating too much groundnut in pregnancy was a major cause of NNJ, 55 (24.4%) correctly answered that it is when the mother's blood does not match baby's blood while 50 (22.2%) think that mosquito bite was the cause. Only a few knew that use of dusting powder on baby's cord , prematurity, and storing baby's clothes in camphor were causes/ risk factors of NNJ 18 (8%), 16 (7.1) and 10 (4.4%) respectively. The 'don't know' responses numbered 30 (13.3%). On the treatment of NNJ, the responses included exposure to sunlight by 114 (50.7%), giving of glucose drinks by 60 (26.7%), use of oral antibiotics by 51(22.7%) and use of special light source in the hospital by 42 (18.7%) Table 3. Only 6 (2.7%) respondents knew that blood transfusion is a form of treatment and the source of information for these 6 was health talk, while up to 22 (9.8%) said nothing should be done and source of information for all 22 was friends/ neighbours/relatives. On the question on whether they considered NNJ a serious problem that need prompt doctors attention, 144 (64%) answered in the affirmative while 81 (36%) answered no. Only 50 (22.2%) of the respondents recognized brain damage as a possible danger while the majority 175 (77.8%) did not. Table 4 shows the number of respondents in the various age groups who had correct perception of the definition, causes, treatment and complications of NNJ. Although the respondents were similar in their perception on definition and causes, there was low perception on the treatment and complications in all the age groups. There was no statistical significant difference among the various age groups. Table 5 shows the level of education of those with correct perception of various aspects of NNJ. There were statistical significant differences between those with primary education and those with tertiary education on the correct perception of definition (χ^2=17.39, p=0.00003 with Yates correction), treatment (χ^2=6.68, p=0.009 with Yates correction), and complications (χ^2=14.76, p=0.00012 with Yates correction), but no significant difference between those with secondary and tertiary education.

Table 1: **Age Distribution of Respondents**

Age in years	No of respondents (%)
16-20	7(3.1)
21-25	28 (12.4)
26-30	85 (37.8)
31-35	77 (34.2)
≥ 35	28 (12.4)
Total	**225 (100)**

Table 2: **Causes/Risk Factors for Jaundice As Given By the Respondents.**

Causes/Risk factors	No of respondents (%)
Eating too much groundnut in pregnancy	75 (33.3)
When mother's blood does not match baby's blood	55(24.4)
Mosquito bite	50 (22.2)
Infection in the baby	45 (20)
Don't know	30 (13.3)
Eating too much oil	18 (8)
Use of dusting powder	18 (8)
Prematurity	16 (7.1)
Storing baby's cloth in camphor	10 (4.4)

Table 3:**Treatment Options Given By the Respondents.**

Mode of treatment	No of respondent
Exposure to sunlight	114 (50.7)
Glucose drinks	60 (26.7)
Use of oral antibiotics	51 (22.7)
Use of special light source in the hospital	42 (18.7)
Do nothing	22 (9.8)
Eye drops	11 (4.9)
Take to church	11 (4.9)
Native herbs	10 (4.4)
Give blood in the hospital	6 (2.7)

Table 4: **Number of Respondents in the Various Age Groups with Correct Perception of the Definition, Causes, Treatment and Complications of NNJ.**

Age range	Correct Perception			
	Definition	Causes/ Risk factors	Treatment	Complication
	No (%)	No (%)	No (%)	No (%)
16-20(n=7)	4 (57)	4 (57)	1 (14)	1 (14)
21-25(n=28)	19 (68)	12 (43)	7 (25)	8 (27)
26-30(n=85)	70 (82)	62 (73)	17(20)	14 (16)
31-35(n=77)	60 (78)	52 (68)	14 (18)	19 (25)
>35(n=28)	21 (75)	14 (50)	9 (32)	8 (29)
Total (n=225)	**174 (77)**	**144 (64)**	**48 (21)**	**50 (22)**

Table 5: **Number of Respondents within Various Educational Backgrounds with Correct Perception of the Definition, Causes, Treatment and Complications of NNJ.**

Educational Background	Correct Perception			
	Definition	Causes/Risk Factors	Treatment	Complication
	No (%)	No(%)	No(%)	No(%)
Primary (n=39)	20(51)	20(51)	2(5)	0(0)
Secondary (n=64)	50(78)	42(67)	14(22)	11(17)
Tertiary (n=122)	104(85)	82(67)	32(26)	39(32)
Total (n=225)	**174(77)**	**144(64)**	**48(21)**	**50(22)**

DISCUSSION

Neonatal jaundice is a worldwide and potentially lethal condition; therefore, mothers involved in the care of the newborn must possess adequate knowledge on the causes/risk factors, treatment and severity of the illness. In the present study 77.3% of the respondents knew what neonatal jaundice is. This may probably be as a result of high literacy rate among them. A minimum of secondary education positively influenced their perception. This awareness however, is not associated with adequate knowledge of certain aspects of the condition such as treatment and complication.Although 50.7% of the women were reached by the health talk in the clinics this did not have much impact on their knowledge of causes, treatment and complications. In this study mass media was an insignificant source of information, this is similar to a study by Ogunfowora and co-workers in Shagamu [21] Also in this study 31.1% had their source of information from friends/neighbours/relations, this is also comparable to findings by Ogunfowora and co-workers [21]. There are still misconceptions on the causes and treatment of neonatal jaundice among our women. A lot of women think that eating too much ground nut and mosquito bite in pregnancy cause jaundice. These misconceptions may have also stemmed from the fact that the sources of information in 31.1% of the respondents were from either friends, neighbours or relatives who may have also gotten wrong information themselves. Although several studies in Nigeria show that exposure to some household icterogenic substances are risk factors, in this study only a few women knew this. Since these household chemicals are important in the pathogenesis of neonatal jaundice in our environment and these icterogenic agents are commonly used in storage of the babies' clothes, dressing of the babies cords and as mosquito repellant, health education aimed at eliminating the exposure of neonates to such agents is highly needed. In this study a large number of the women believe that exposure to sunlight is the main treatment. This usually diverts attention and lead to delay in seeking medical attention. There is insufficient evidence to support exposure to sunlight for the treatment of jaundice. The persistence of this practice 40 years after publication of a report on a single case series raises questions about the influence of evidence on the beliefs of professional healthcare workers [22]. The use of sunlight as treatment appears to have resulted from anecdotal reports of its effectiveness [23] rather than from rigorous medical evidence. If the effectiveness of sunlight exposure for jaundice is unknown, so too is the incidence of potential risks to the neonate for example, sunburn or photosensitivity. The effectiveness of "sunshine phototherapy cot" in the treatment of NNJ has been reported by Olowe [24] for use in Primary Health Care (PHC) facilities although it was recommended for mild jaundice. Also exposure to sunlight has been said to be effective if it is intense and prolonged, [25] but such intense and prolonged exposure in our environment may cause hyperpyrexia and sunburn. Glucose water drink as a treatment for NNJ was

highly rated in this study. This has no physiological basis; such a therapy not only diverts attention from breast milk but creates a false confidence in the mother thus delaying seeking appropriate medical attention. Thus the high rating of exposure to sunlight and use of glucose drinks is unfounded and tantamount to dangerous delays or mismanagement. There was lack of knowledge on the possible dangers of Neonatal jaundice. Although 64% considered NNJ a serious problem that needs doctor's attention, only 22.2% knew that brain damage was a possible danger. The inadequacy of knowledge of this danger may have caused the trivialization of the illness as some of the respondents said nothing should be done, and child should be taking to church, or use eye drop or herbal medication.

CONCLUSION

It is concluded that a lot of mothers do not have adequate knowledge on the causes / risk factors, treatment and complications of NNJ. A lot of information has been obtained on NNJ in Nigeria. The information accumulated must be shared with the community especially the mothers. We therefore recommend that there is urgent need for health enlightenment campaign on NNJ in the hospitals (as health talks and information pamphlet), mass media, women organizations and churches by paediatricians emphasizing the possible trigger factors available in the home, the appropriate treatment (what to do and what not to do with a jaundiced baby) and the effect on the brain. It should also emphasize early medical consultation and discourage use of self medication and reliance on unproven treatment methods. This will make them seek prompt attention in the hospital and reduce the neurological effect and mortality from NNJ in the society.

ACKNOWLEDGMENT

The authors wish to thank Dr. Bathlomew Ntui and Dr. Eze, house officers in the Department of Paediatrics, for the active role they played in the data collection.

REFERENCES

1. **Juretschke LJ.** Kernicterus: still a concern. Neonatal Netw 2005; 17(2): 167-9.

2. **Mohammadzadeh A, Farhat AS, Iranpour R**. Effect of clofibrate in jaundiced term newborns. Indian J Paediatr 2005:72:123-6.

3. **Janjidamai W, Tansantiwong T**. Accuracy of transcutaneous bilirubinometer estimates using Bilicheck in Thai neonates. J Med Assic Thai 2005; 88(2):187-90.

4. **Newman TB, Maisels MS**. Kernicterus in otherwise healthy, breastfed term newborns. Pediatr 1995; 96:730-3.

5. **Ransome-Kuti O**. Problems of Paediatrics emergencies in Nigeria. Niger Med. J. 1972; 2:6 2-70.

6. **Effiong CE, Aimaku VE, Bienzle U, Oyedeji GA, Ikpe DE**. Neonatal jaundice in Ibadan. Incidence and etiologic factors in babies born in hospital. *J Natl Med Assoc* 1975; 67: 208-213.

7. **Effiong CE, Laditan AAO.** Neonatal Jaundice in Ibadan: a study of cases in the out-patient clinic. Nig J Paediatr 1976; 3: 1-8.

8. **Animashaun A**. Aetiology of Cerebral palsy in African Children. Afr J Med Sci 1997; 2: 165-171.

9. **Owa JA, Dawodu AH, Familusi JB**. Kerniterus in Nigerian infants. West Afr. J. Med 1987;6: 11-22.

10. **Duggan MB, Ogala W**. Cerebral palsy in Nigeria- A report from Zaria. Ann Trop Paediatr 1982; 2: 7-11.

11. **Asindi AA**. The pattern of neurological disabilities in children seen at the University of Calabar Teaching Hospital. Nig J Paediatr1988; 13: 127-132.

12. **Fadero FF**. Causes of Neonatal deaths in UCH Ibadan: An autopsy study. Nig J Paediatr 1985; 12: 65-68.

13. **Hansen TW**. Treatment of neonatal jaundice. Tidsskr Nor Laegeforen 2005; 125(5):594-8.

14. **Bhutani VK, Johnson LH**. Newborn jaundice and kernicterus health and societal perspectives. Indian J Pediatr 2003; 70(5):407-16.

15. **Owa JA, Oshinaike AI**. Neonatal morbidity and mortality in Nigeria. Indian J Pediatr 1998; 65(3):441-9.

16. **Ezechukwu CC, Ugochukwu EF, Egbuonu I, Chukwuka JO**. Risk factors for neonatal mortality in a regional tertiary hospital in Nigeria. Nigerian Journal of Clinical Practice 2004; 7(2) : 50-2.

17. **Azubuike JC** . Neonatal jaundice in Eastern Nigeria. J Trop Paediatr. 1985; 31: 82-84.

18. **Coulter JBS, Akpabio MA, Jikeme MA, Kay T**. Neonatal Jaundice in Northern Nigeria. Nig J Paediatr 1978; 5: 12-5.

19. **Familusi JB, Dawodu AH. A** survey of neonatal jaundice in association with household drugs and chemicals in Nigeria. Ann Trop Paediatri 1985; 5: 219-222.

20. **Olowe SA, Ransome-Kuti O**. The risk of jaundice in glucose-6-phosphate dehydrogenase deficient babies exposed to menthol. Acta Paediatr Scand 1980;69(3):341-5.

21 **Ogunfowora OB, Adefuye PO, Fetuga MB.** What Do Expectant Mothers Know about Neonatal Jaundice? International Electronic Journal of Health Education, 2006; 9:134-140.

22. **Renea V Johnston, Jeremy N Anderson, Cheryl Prentice**. Is sunlight an effective treatment for infants with jaundice? EBM IN ACTION MJA 2003; 178: 1

23. **Harrison SL, Buettner PG, MacLennan R.** Why do mothers still sun their infants? *J Paediatr Child Health* 1999; 35: 296-29**9**.

24. **Olowe SA.** Sunshine phototherapy cot: utilization of sunlight for phototherapy. Nig J Paediatr 1985; 12; 69-. 3

25. **Chan MCK**. The fetus and the newborn. In : Paediatrics in the Tropics. Hendrickse RG, Barr DCD and Mathews TS (eds). London, Blackwell Scientific Publications 1991: 163-6.