

Maternal Immunization Status in Neonatal Tetanus

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Summary

Taiwo O, Senbanjo T and Adamolekun B. Maternal Immunization Status in Neonatal Tetanus. *Nigerian Journal of Paediatrics* 1992; 19:6. In a review of 99 cases of neonatal tetanus admitted over a three-year period (January 1986 to December 1988), tetanus accounted for 6.8 percent of all admissions into the neonatal ward and the case fatality rate was 54.9 percent. All mothers who delivered at home and in the church premises were unimmunized against tetanus, while 46.5 percent of those who delivered in hospital were partially immunized. No mother was fully immunized. Partially immunized mothers had a significantly reduced mortality rate than unimmunized mothers. These findings underline the need to utilize fully all opportunities for tetanus immunization among mothers attending hospital clinics and to fashion strategies of extending EPI programmes for tetanus to cover non-hospital deliveries.

Introduction

TETANUS remains a significant cause of neonatal mortality world-wide, despite the fact that it is eminently preventable. At conservative estimates, there are more than half a million neonatal deaths yearly due to tetanus, mostly in the developing countries.¹ The vaccine which effectively prevents tetanus has been available for some time, yet only 14 percent of pregnant African women are thought to be fully immunized against tetanus.² Immunization of pregnant women provides passive immunity to the

child.³ At least, two appropriately-spaced inoculations are thought necessary to assure a level of antitoxin adequate to protect the baby.⁴ The non-completion of schedules of immunization is a well-known problem faced by health workers in developing countries.⁵

In the present study we have assessed the maternal tetanus vaccination coverage rate in cases of neonatal tetanus. The results of this study may be useful in improving the effectiveness of the Expanded Programme of Immunization (EPI) strategy for the elimination of Neonatal tetanus in our community.

Materials and Methods

The case-notes of all cases of neonatal tetanus admitted to the neonatal ward, Obafemi Awolowo University Teaching Hospital, Ile-Ife, over a three-year period (January 1986 to December 1988) were reviewed. The diagnosis of neonatal tetanus in all cases was based on clini-

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Maternal Immunization Status in neonatal Tetanus

features and was cross-checked by the attending paediatrician. The personal data of the patients, the maternal immunization status for tetanus and the place of delivery were extracted from the case notes. The data obtained were subjected to statistical analysis, using the chi-squared statistical test, where appropriate.

Results

A total of 99 cases of neonatal tetanus were admitted into the neonatal wards during the study period and this number constituted 6.2 percent of a total of 1,596 admissions into the neonatal ward during the same period. Forty-two of the neonates admitted with tetanus were males, while 57 were females (M:F ratio: 1:1.4). The mean age at presentation was eight days (range 3-20 days).

Maternal Immunization Status for Tetanus

Records of maternal immunization were available in 88 cases. Seventy five mothers (85.2 percent) were never immunized, while 13 mothers (14.7 percent) were immunized once during the pregnancy of the affected neonate. Of this latter group, six were primips, while the seven others gave no history of tetanus immunization in the previous pregnancy. The thirteen mothers were therefore judged to be partially immunized.

Antenatal Care and Place of Birth

Forty patients (40.4 percent) were born at home, and had not received any hospital antenatal care. Twenty patients (20.2 percent) were born in church premises and did not receive any hospital antenatal care prior to delivery. Twenty-nine patients (39.4 percent) were delivered in a health institution, with 24 delivered in private hospitals and 15 in primary health centres. Ten (25.6 percent) of the 39 patients delivered in hospital were unbooked cases and had not re-

ceived antenatal care in the hospital of delivery or any other hospital. Twenty-nine (74.4 percent) of the 39 patients delivered in hospital had received antenatal care in hospital prior to delivery.

Outcome

A total of 54 patients died, giving a case fatality rate of 54.5 percent (Table). There was a statistically significant difference in the mortality rates of patients whose mothers were partially immunized and those whose mothers were not ($P < 0.01$).

TABLE

Maternal immunization status, place of birth and outcome in 88 cases of neonatal Tetanus

	Maternal Immunization Status (n = 88)	
	None (n = 75)	Partial (n = 13)
Place of Delivery:		
In Hospital	15	13
Outside Hospital	60	0
Outcome:		
Survived	23	11
Died	52	2(P<0.01)

Discussion

Neonatal tetanus remains a significant cause of neonatal morbidity and mortality, accounting in this study for 6.8 percent of total neonatal admissions with a mortality rate of 54.5 percent. The mortality rate in this study is lower than that of an earlier report⁶ and may be attributed to improved hospital management of the condition. In the present study, there was a significantly less fatality in children of partially immu-

nized mothers as compared to unimmunized mothers. This does suggest that partial maternal immunization, while not adequate to fully protect against neonatal tetanus, significantly improves prognosis in patients with tetanus.

All women delivered at home and in Church premises were completely unimmunized. Clearly, this finding emphasises the need for strategies by which EPI programmes for tetanus immunization can cover religious homes and traditional birth attendants. Out of twenty-eight cases who received antenatal care and whose immunization status were known, 15, or 53.5 percent, were completely unimmunized. This raises disquieting questions about the efficacy of the EPI programme for tetanus in our community and implies missed opportunities for immunization in mothers coming into contact with antenatal care. All opportunities for tetanus immunization need to be sought and utilized if full protection for pregnant women in our community is to be realized.

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