

PERINATAL OUTCOME IN A RURAL COMMUNITY

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SUMMARY

A community based rural project supported by WHO was carried out at rural health training centre, Sirur of B.J. Medical College, Pune. A maternal mortality of 2.5/1000 deliveries and a perinatal mortality of 42.8/1000 was observed over four year period. Maternal age <20 years and ≥ 30 years, high parity ≥ 5 , occupation of parents as agricultural labourer, absence of antenatal care, self delivery were associated with higher rates of mortality among both mothers and babies. Improvement in care before and during labour of the rural mothers by identification of risk of primary health workers and their timely referral is discussed.

Introduction

Unacceptedly high pregnancy wastage and childhood mortality are the major health problems in the developing world. Data are lacking on natural history of pregnancies and their outcome. Most studies Gupta, S. et al (1972), Kasturilal (1974), Mehta, A. (1980), Menon, M.K.K. (1963) are based on hospital statistics which cannot project the true picture of the obstetrical problems prevailing in the community.

Realising the urgent need for such a prospective community based study, a WHO supported rural based study was carried out at RTC Sirur. Some of the highlighting features of the obstetrical

outcome in a rural environment observed during this study are presented here.

Material and Methods

A prospective community based rural research project on risk approach in MCH was carried out for 4 years (1981 to 1984) at Sirur, Rural Training Centre attached to B.J. Medical College, Pune.

Female village health guides working in the area were instructed to collect detailed information regarding every birth taking place in an area covering a population of 47,000. They were trained to identify 'at risk' pregnant women by using simple criteria (Table V) and to refer those to appropriate level for confirmation of risk and further care.

The information collected was analysed and the analysis of perinatal, neonatal

and infant mortality rates was carried out. The proportion of 'at risk' cases, their frequency distribution was calculated and the outcome was correlated with the risk status.

Results

In all, there were 5994 deliveries in the study population during this period. Including 36 twin deliveries there were 6030 births. The rate of twinning was 0.6% (1 in 167 deliveries) with a range between 0.3 to 0.9% from 1981 to 1984 (Table I).

TABLE - I
TOTAL DELIVERIES, LIVE BIRTHS
AND STILL BIRTHS AND PERINATAL
DEATHS, SIRUR, INDIA

Total deliveries	5994
Twin deliveries	36
Total births	6030
Maternal deaths	15
Live births	5919
Still births	111
Early neonatal deaths	147
Perinatal deaths	258
PNMR/1000 births	42.8

Maternal Mortality

There were 15 maternal deaths (2.5/1000 deliveries). Nine deaths were due to direct obstetric causes (Puerperal sepsis-3, PPH-3, Eclampsia-2 and postpartum collapse-1) and five due to indirect obstetric causes (Hepatitis-3, Intracranial thrombosis-2). The cause of death could not be retained in one mother.

overall PNMR was 42.8/1000 as 50.3/1000 births during 1981, gradually declined to 33.3/1000 after application of risk ap-
y. The causes of perinatal

deaths are shown in Table II. The proportion of stillbirths were 43%.

TABLE - II
CAUSES OF PERINATAL DEATHS

Cause	S.B.	END	PND
Birth asphyxia	60	30	90
LBW & Prematurity	28	72	100
Cong. malformations	13	7	20
Unexplained	10	7	17
Neonatal infections	—	17	17
Feeding problems	—	4	4
Others	—	10	10
Total	111	147	258

Maternal Age

The proportion of teenage mothers was 10% while 4.2% mothers were beyond the age of 35 years. Mothers below 20 years of age faced significantly higher PNMR (63.5/1000) as compared to 40.8/1000 for women above 20 years of age ($P < 0.05$). Elderly mothers also faced a higher PNMR of 55.1/1000 births (Table III).

TABLE - III
AGE OF MOTHER AND PNMR SIRUR
INDIA 1981-84

Age in years	No. of women	%	PNMR
15 -	598	10.0	63.5
20 -	2534	42.3	41.0
25 -	1848	30.8	41.7
30 -	760	12.7	32.9
35 and above	254	4.2	55.1
Total	5994	100.0	43.0

Maternal mortality was lowest (2.1/1000 deliveries) for mothers between 20 and 29 years of age. Mothers above 30 years and below 20 years exhibited MMR

of 3.9 and 3.3/1000 respectively.

Parity

There were 28.8% primis and 4.6% grandmultiparae (parity ≥ 5). The PNMR was 58.5/1000 births for first delivery and 36.1/1000 for babies born to women with parity 5 or more. Maternal death rate for women with parity 5 and more was 3.6/1000 and for primis it was 2.9/1000.

Occupation of mother

Highest PNMR was observed for babies born to agricultural labourer mothers (148.7) and least for babies of self employed women (7.9/1000). Non farm labourers had PNMR of 73.5/1000. For other occupational groups it ranged between 35.0 to 87/1000. Similar trend was observed for different occupational groups of the husbands, the agricultural labourer category facing the highest risk.

Prenatal care

Only 11.2% pregnant women had 3 or more antenatal visits in whom the PNMR was 21/1000 births in comparison to 45.8/1000 for those women having less check-ups ($P < 0.05$). A sizeable proportion of women (34.9%) could not receive any prenatal care in whom the PNMR was highest (50.3/1000 births).

Place of birth

Majority of the women (70.2%) delivered at home. The PNMR in them was 38.5/1000 births. Around 3.4% women were referred to district hospital for delivery in whom the PNMR was very high (136.6/1000 births) indicating considerable delay in executing referrals.

Birth attendant

Self deliveries in absence of any birth attendant was associated with a very high

PNMR of 102.9/1000 births. Majority of the women (52.4%) were delivered by the relatives of the pregnant mother. Trained birth attendants conducted only 9% of total deliveries. In the rural hospitals, most of the births were attended by nursing staff while medical practitioners have delivered only 5% of deliveries. A very high PNM in hands of specialist again indicated in considerable delay in executing referrals (Table IV).

TABLE IV
BIRTH ATTENDANT AND PERINATAL MORTALITY SURUR - INDIA - 1981-84

Birth attendant	Deliveries	%	PNMR
Self	68	1.1	102.9
Relative	3139	52.4	37.3
Untrained birth attendant	165	2.8	36.4
Trained dai	241	4.0	49.8
Trained VHG*	305	5.1	16.4
ANM/Nurse	1768	29.5	39.6
Doctor	224	3.7	111.6
Specialist	84	1.4	190.5

* Out of 38 VHGs selected for the area, 12 were traditional birth attendants. They received training for both dai as well as VHG.

Risk status of mother

As per the criteria adopted for the study 18.5% (1107) women were 'high risk' in whom the PNMR was 144.5/1000 as against a PNMR of 20.1/1000 in women without these risks ($P < 0.05$).

Table V shows the frequency distribution and the outcome as related nature of risk.

Abnormal presentation of ing labour, antepartum haemorrhage, pregnancy and illness during pregnancy (Hepatitis and hyperpyrexia) associated with very high PNM.

TABLE - V
NATURE OF RISK AND PNMR

Risk factor	No.	% of total pregnancies (n = 5994)	% of total risk cases (n = 1107)	PNMR
Bad Obstetric history	299	5.0	27.0	130.4
Primi age < 18 years	238	4.0	21.5	67.2
Primi age > 30 years	19	0.3	1.7	105.3
Primi, Short stature pelvic deformity	64	1.0	5.8	140.6
Anaemia	145	2.4	13.0	62.1
Oedema	151	2.5	13.6	119.2
Maternal illness	31	0.5	2.8	225.8
Abnormal presentation	69	1.2	6.2	449.3
APH	22	0.4	2.0	409.1
Prolonged labour	286	4.8	25.8	283.2
Overdistension/Twins	47	0.8	4.2	383.0

Multiple risk factors were present in 203 (3.4%)

2.1% of all pregnant mothers in whom 25.2% of all PNDs took place.

With simultaneous presence of two or more risk factors the PNM increased sharply. 203 women (3.4%) had multiple risk factors in whom the PNMR was 274.5/1000.

Sex of the baby

The proportion of male births was 53%. The PNMR in male babies was 46.8/1000 for female babies.

Discussion

Obstetrical problems in rural area are totally different from urban areas as majority (70%) of deliveries are still conducted at home. It is not surprising to find that preventable causes of death like puerperal sepsis and post partum haemorrhage for mother and birth asphyxia for baby were responsible for 35 to 40% deaths. In near future we do not anticipate a major change in the pattern of deliveries in rural area. Antenatal risk screening by primary

level health workers for factors which can be identified just by asking few questions to mothers like age, parity and obstetrical history will enable detection of 50% of risk cases, (Table V). The proportion of these risk cases in total pregnant mothers is 9.3%. Ensuring planned hospital deliveries of these 9 to 10% of total pregnant mothers will be able to prevent about 25% of mortality.

No intrapartum care was available to 1.1% women in whom self delivery was noted. The PNMR showed a marked reduction (from 102.9 to 37.3/1000) even if a relative's help was available to a woman. It may be possible to ensure some help if expected date of delivery is made known to the mothers.

A high proportion of deliveries are conducted by the relatives and untrained birth attendants at home and the trained birth attendants form the first level of referral. They play a negligible role in rendering antenatal care as their first

contact with a women is during labour. Judging whether to refer a cases of abnormal labour to a hospital or not is based on the confidence and skills of an individual dai which results in over diagnosis or delayed referrals after prolonged manipulations at home. In general a tendency is observed to go on consulting higher and higher category of health personnel (Trained birth attendant to nurse to doctor) sequentially in order to deliver the women at home as far as possible rather than shifting her immediately to a hospital where all possible care can be given.

A periodic search of such untrained traditional birth attendants should be made for their training in rendering antenatal care, safe conduct of labour and recognition of complicated child birth in need of referral. Encouraging the rural women to seek for the help of a trained birth attendant during every labour can improve the outcome in dicicilliary births.

Prolonged labour is associated with a very high perinatal mortality and is responsible for 30% of all perinatal deaths.

In the present study inspite of difficulty during labour only 55 (19.2%) cases were referred to institutions. Twenty three of these were delivered by caesarean section and two by forceps. The perinatal mortality faced by this group of referred cases of prolonged labour was 163.6/1000 as compared to 311.6/1000 among those who were not referred inspite of clear cut indication. Health education of general population about difficulties during labour, creating awareness among them for need for referral and making a facility like ambulance available for quick transport of such cases will go a long way in preventing maternal and perinatal deaths.

References

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