

EFFECTS OF MATERNAL HEALTH AND PRENATAL CARE ON PERINATAL MORTALITY

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SUMMARY

Maternal Health affected by Medical Disorders and Obstetric complications, adversely affect perinatal mortality. Mac Farlene (1986) observed that in 40-60% of perinatal deaths, no medical or obstetric disorders were present, thus maternal health and environment were contributory factors. Stembara (1986) mentions that Maternal Demographic and Psychosocial risk factors contribute substantially to increase in perinatal mortality. Birth records of 9534 patients were analysed to determine the influence of Maternal Health parameters like age, parity, height, weight, nutritional status, habits and medical problems like anaemia and PIH, on perinatal mortality, and the effects of emerging obstetric problems during prenatal care, like foetal growth retardation, amniotic fluid anomalies, singleton or multiple pregnancies, abnormal presentations, antepartum haemorrhage, gestational maturity and amniorrhaxis on perinatal mortality. Lastly the value of quantum of prenatal care evaluation to determine its role in lowering perinatal mortality.

MATERIALS AND METHODS

The birth records of 9534 patients delivering at Wadia Maternity Hospital between 01.04.1991 to 31.03.1992 were analysed to determine the role of

Maternal Health demographic parameters like Age, Parity, Height, Weight, Nutritional Status, Habits and Common Medical disorders like Anaemia (Hb% less than 6.5 gms%) and Pregnancy Induced Hypertension on occurrence of Perinatal Mortality.

Similarly, the case records were

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analysed to determine the effects of quantum of antenatal care, and the role of emerging high risk factors during prenatal care, like growth retardation, amniotic fluid anomalies, singleton or multiple pregnancies, abnormal presentations, antepartum haemorrhage, gestational maturity and aminorrhhexis on perinatal mortality.

OBSERVATIONS AND DISCUSSIONS

The perinatal mortality is influenced by Maternal health. Hence the following maternal parameters were analysed.

(1) **Maternal Age** : Many univariate studies have shown that adolescent and teenaged girls, and women over the age of 30 years have a higher risk of perinatal morbidity like growth retardation and preterm deliveries, and a higher perinatal mortality. (Ounsted M. et al 1985). Higher perinatal losses in age groups under 20 years and over 40 years were reported by Roy Chowdhury and Sikdar (1981) and Mehta and Jayanth (1981). In the present series, the perinatal loss in relation to age is analysed in Table I.

Table I

Influence of Maternal Age on Perinatal Loss

Age of Mother	Perinatal Mortality
Upto 20 years	54.2/1000 live births
21-25 years	28.1/1000 live births
26-30 years	26.3/1000 live births
31-35 years	46.1/1000 live births
36 years and over	52.4/1000 live births
Average Institutional P.N.M.	34.16/1000 live births

(2) **Maternal Height** : The height and weight of the mother are well known predictive indices of perinatal morbidity and mortality (Thomson and Billewicz 1963). A high incidence of low birth weight infants have been shown in mothers with heights below 140 cms. and 153 cms. by Prema (1985) and S. Gopalan (1982). In the present study the relationship between Maternal Height and perinatal outcome is detailed in Table II.

(3) **Maternal Weight** : Maternal weight is a good indicator of maternal nutritional status. Women who are underweight and subsequently gain little weight during pregnancy, are at high-risk of foetal and neonatal morbidity and mortality (Naeye 1979) and Brown et al (1981) found that more than half the infants born to women with a pre-pregnancy weight of 80% or less of standard weight, were low birth weight. At the other extreme, obese women have a higher incidence of gestational diabetes, P.I.H., foetal macrosomia, prolonged and dystocic labours (Johnson S. et al 1987). In the present study, the distribution of Maternal Weight and Perinatal loss is

Table II

Influence of Maternal Height on Perinatal Loss

Maternal Height in cms. Perinatal Mortality	
Upto 145 cms.	44.14/1000 live births
145 to 150 cms.	37.76/1000 live births
151 to 155 cms.	32.7/1000 live births
Clinic Average P.N.M.	34.16/1000 live births

The number of perinatal deaths diminishes as stature of the mother increases.

shown in Table III.

(4) **Parity** : Perinatal mortality is lowest amongst para 2 and 3 and rises in para 4 and over.

(5) **Medical Health and Habits** : It is well known that perinatal morbidity and mortality is higher amongst anaemic women, women suffering from hypertension during pregnancy and women with addictions to tobacco, alcohol and other drugs. In our study an attempt was made to analyse the effects of moderately severe anaemia (Hb% less than 6.5 gms.), Hypertension and tobacco chewing habit exceeding 5 years to evaluate their effects on Perinatal Mortality, as shown in Table V.

(6) **Prenatal Care** : Prenatal care is the most important factor that can alter

Table III

Maternal Weight and Perinatal loss

Maternal weight distribution	Perinatal Mortality
40 Kgs.	46.5/1000 live births
41-45 Kgs.	38.1/1000 live births
45-60 Kgs.	28.6/1000 live births
61 and above	45.1/1000 live births
Clinic average P.N.M.	34.16/1000 live births

Table IV

Maternal Parity and Perinatal Loss

Maternal Parity	Perinatal Mortality
Para 1	42.6/1000 live births
Para 2-3	28.48/1000 live births
Para 4 and over	38.84/1000 live births
Clinic Average P.N.M.	34.1/1000 live births

the adverse effects of other risk factors. Mehta A. and Jayant K. (1981) observed that 35.4% of all perinatal deaths occurred in women with no prenatal care. The quantum of care received has an important bearing on pregnancy outcome. When the antenatal visits num-

Table V

Maternal Health and Habits Influencing Perinatal Loss

Maternal parameter	Perinatal Mortality
Maternal anaemia (Hb% less than 6.5 gms.)	56.2/1000 live births
Hypertension	79.5/1000 live births
Tobacco consumption exceeding 5 years	39.6/1000 live births
Clinic average P.N.M.	34.1/1000 live births

A detailed analysis of the records showed that 28.9% of women with a Hb. of less than 8.5 gms.% and 48.2% of women suffering from hypertension gave births to low birthweight (less than 2.5 Kgs.) infants.

Table VI

Antenatal registration status	Perinatal Mortality
More than 3 AN visits	21.5/1000 live births
1 to 3 AN visits	70.6/1000 live births
Referred cases (AN visits elsewhere)	188.7/1000 live births
No AN Care at all	314.3/1000 live births

The above table underlines the importance of the quality and quantity of prenatal care in influencing pregnancy outcome.

Table VII

Influence of Antenatal Obstetric Problems on Perinatal Mortality

Obstetric Parameter	Perinatal Mortality
(1) Gestation Maturity	
a) Preterm - less than 37.0 weeks	304.1/1000 live births
b) Term - 37.0-41.6 weeks	15.2/1000 live births
c) Post term - 42.0 weeks & above	31.9/1000 live births
(2) Amniotic Fluid Anomaly	
a) Polyhydramnios	236.4/1000 live births
b) Oligohydramnios	134.7/1000 live births
(3) No. of Foetuses	
a) Singleton Pregnancy	32.6/1000 live births
b) Multiple Pregnancy	212.2/1000 live births
(4) Abnormal Foetal Presentation	
a) Cephalic	29.5/1000 live births
b) Breech	202.7/1000 live births
c) Other abnormal presentation	100.4/1000 live births
(5) Antepartum Haemorrhage	
a) Placenta Praevia	310.4/1000 live births
b) Accidental Haemorrhage	742.0/1000 live births
(6) Other AN Complications	
a) I.U.G.R.	79.6/1000 live births
b) Cervical Incompetence	216.6/1000 live births
c) Premature Amniorrhexis	84.8/1000 live births
d) Previous 2 or more Abortions	242.0/1000 live births
e) Previous Stillbirths	126.0/1000 live births

The above table demonstrated the detection of obstetric problems and their treatment antenatally or by timely intervention helps to alleviate perinatal loss to a considerable extent. However, some of the risk factors cannot be totally eliminated nor are they amenable to treatment.

bered three or less, there was a significant rise in perinatal loss.

(7) **Obstetric Problems** : Obstetric problems detected antenatally can help to improve perinatal outcome. Correction of these or their control, certainly proves beneficial to perinatal outcome.

CONCLUSION

The effects of Health Status on Perinatal Outcome has been analysed. The importance of an adequate quantum of quality antenatal care to reduce perinatal loss has been stressed. The adverse effects of emerging obstetric problems on perinatal loss has been analysed.

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