

# THE EFFECT OF ANTENATAL CARE ON FOETAL OUTCOME IN TWIN GESTATIONS\*

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## Introduction

Perinatal mortality is very high in India specially so for twin babies. It is reported to be 4 times more common in twin gestations as compared to singletons (Roy Choudhury and Sikdar, 1981). A clinical analysis was done for assessing the effect of antenatal care in improving foetal outcome in twin gestation.

## Material and Methods

Three hundred patients of twin pregnancy who delivered in Smt. Sucheta Kripalani Hospital during the years 1977-1979 were studied. They were divided into two groups.

I. *Antenatal group*: This consisted of 125 patients who attended antenatal clinic twice or more and those who were hospitalised for 1 week or more after diagnosis of twin pregnancy.

II. *Emergency group*: This included 175 patients who came to hospital as emer-

gency admissions in labour. Detailed history and clinical examination was done, antenatal and labour records were kept and babies were followed till their stay in hospital.

## Observations

*Perinatal Mortality*: Perinatal mortality in the antenatal and emergency group is shown in Table I.

In antenatal group, 17.6% of babies died as compared to 46.28% in emergency group. The difference in perinatal mortality in the two groups was highly significant statistically ( $P < .001$ ).

## Stillbirths

Table II shows the stillbirth rate. The difference in the stillbirth rate was not statistically significant ( $P > .05$ ).

## Neonatal Deaths

The neonatal deaths is shown in Table III. The difference in neonatal deaths was statistically highly significant ( $P < .001$ ).

## Birth Weight

Table IV shows the distribution of birth weight in these two groups.

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TABLE I  
Perinatal Mortality

Group	Total No. of babies	No. of babies alive	% of live babies	No. of babies died	% babies died
Antenatal (group)	250	206	82.4	44	17.6
Emergency (group)	350	188	53.7	162	46.28
Total	600	394	65.66	206	34.33

$P < .001$

TABLE II  
Stillbirths

Group	Total No. of babies	No. of still births	% of still births	No. of live babies	% of live babies
Antenatal (group)	250	15	6	235	94
Emergency (group)	350	32	9.1	318	90.9
Total	600	47	7.8	553	92.16

$P > .05$

TABLE III  
Neonatal Deaths

Group	Total No. of live births	No. of neonatal deaths	% of neonatal deaths	No. of living babies	% of living babies
Antenatal group	235	29	12.34	206	87.66
Emergency group	318	130	40.9	188	59.1
Total	553	159	28.75	394	71.24

$P < .001$

TABLE IV  
Birth Weight

Group	Total	<2 kg		2-3 kg		>3 kg	
		No. of babies	%	No. of babies	%	No. of babies	%
Antenatal (group)	250	75	30	166	66.4	9	3.6
Emergency (group)	350	229	65.4	118	33.7	3	0.8
Total	600	304	50.6	284	47.3	12	2

$P < .001$

In emergency group, 65.4% of babies were less than 2 Kg while in antenatal group 30% weighed less than 2 Kg. The difference in weight distribution in the two groups was highly significant statistically. ( $P < .001$ ).

**Mean Birth Weight**

Mean birth weight was higher in antenatal group as compared to emergency group, but the difference was not significant statistically ( $P > .05$ ).

**Birth Weight and Perinatal Mortality**

Relationship between birth weight and perinatal mortality is shown in Table V. Above 2 Kg. weight, perinatal mortality was quite low (4%).

**Maturity of Twin Babies:** Table VI shows the maturity of twin babies.

Maturity was less than 36 weeks in 18% of cases in emergency group as compared to 30% in antenatal group. The difference in the maturity distribution in the two groups was statistically highly significant ( $P < .001$ ). By antenatal care continuation of pregnancy could be prolonged.

**Mean Maturity**

Mean maturity was higher in antenatal group as compared to emergency group. The difference was not statistically significant ( $P > .05$ ).

**Maturity and Perinatal Mortality**

Perinatal mortality in relation to maturity of babies is shown in Table VII.

Below 34 weeks of maturity most of the twin babies died. Mortality decreased markedly after 36 weeks.

**Foetal Loss Due to Maternal Complications**

Table VIII shows the foetal loss due to maternal complications.

TABLE V  
Relationship of Birth Weight and Perinatal Mortality

Birth weight in Kg.	Antenatal group			Emergency group			Total		
	No. of babies born	No. died	% died	No. of babies born	No. died	% died	No. of babies born	No. died	% died
<1	11	11	100	42	42	100	53	53	100
1-1.5	26	17	65.38	90	89	98.8	116	106	91.3
1.5-2	52	10	19.03	109	26	23.85	161	36	22.36
2-2.5	106	4	3.77	84	4	4.76	190	8	4.21
2.5-3	48	1	2.08	24	1	4.16	72	2	2.77
>3	7	1	14.28	1	0	0	8	1	12.5

TABLE VI  
Maturity

Group	Total No. of babies	<34 weeks		35-36 weeks		36-37 weeks		> 38 weeks	
		No.	%	No.	%	No.	%	No.	%
Antenatal group	250	37	14.8	38	15.2	136	54.4	39	15.6
Emergency group	350	142	40.5	74	21	100	28.5	34	9.7
Total	600	179	29.8	102	17	236	39.3	73	12.1

P &lt; .001

TABLE VII

Relationship of Maturity of Babies and Perinatal Mortality

Gestation in weeks	Antenatal group			Emergency group			Total		
	No. of babies born	No. died	% died	No. of babies born	No. died	% died	No. of babies born	No. died	% died
<30	4	4	100	42	42	100	46	466	100
30-32	25	20	80	45	45	100	70	65	92.85
32-34	22	9	40.09	38	38	100	60	47	78.33
34-36	42	6	14.28	62	17	27.41	104	23	22.1
36-38	76	4	5.29	156	16	10.25	232	20	8.62
>38	81	1	1.2	7	4	57.1	88	5	5.6
Total	250	4.4	17.6	350	162	46.28	600	206	34.33

TABLE VIII  
Foetal Loss due to Maternal Complications

Maternal Complications	Antenatal group			Emergency group			Total		
	No. of babies born	No. died	% died	No. of babies born	No. died	% died	No. of babies born	No. died	% died
(1) P.E.T. Mild PET Severe PET	42	5	11.9	52	15	28.8	94	20	21.3
	38	3	7.9	24	9	37.5	62	12	19.4
	4	2	50	28	6	21.4	32	8	25
(2) Eclampsia	2	0	0	12	7	58.3	14	7	50
(3) Hydramnios	66	10	15.2	50	22	44	116	32	27.6
(4) A.P.M. Accidental haemorrhage Placenta previa	6	1	16.7	10	6	60	16	7	43.8
	4	1	25	8	6	75	12	7	58.3
	2	0	0	2	0	0	4	0	0
(5) Anaemia 6-10 gm <6 gm Dimorphic	98	17	17.34	186	117	62.9	284	134	47.2
	90	17	18.9	166	104	62.6	256	121	47.26
	8	0	0	20	13	65	28	13	46.42
	2	0	0	8	1	12.5	10	1	10

Patients with maternal complications in the antenatal group had a lower foetal mortality than the emergency group.

#### Causes of Stillbirths

Cause of stillbirth is shown in Table IX. In 65.2% of cases, cause was not known. None of the babies had post mortem examination.

TABLE IX  
Causes of Stillbirths

Causes	No. of S.B.	%
Gestational hypertension	2	4.34%
APH	3	6.52
Foetus papyraceous	2	4.34%
Inter twinning of cords	2	4.34%
P.E.T.	3	6.52%
Congenital anomaly	3	6.52%
Cord prolapse	1	2.17%
Unknown	30	65.2%

#### Causes of Neonatal Deaths (Table X)

Prematurity was present 99.37% of twin deaths and 51.57% of babies died due to prematurity alone.

TABLE X  
Cause of Neonatal Deaths

Causes of death	No. of babies died	% of babies died
Prematurity	158	99.37
Only prematurity	82	51.57
Birth asphyxia	33	20.75
RDS	6	3.8
Septaemia	24	15
Congenital anomaly	7	4.4
Cord prolapse	3	1.88
Pulmonary haemorrhage	4	2.5
Jaundice	1	0.62
Gastroenteritis	9	5.66

#### Discussion

Perinatal mortality was reduced statistically significantly by antenatal care. This

reduction was mainly due to decreased neonatal deaths, rather than stillbirths. Antenatal care also reduced the incidence of low birth weight babies.

Prematurity alone contributed to 51.6% of foetal loss. Among neonatal deaths, 99.37% of babies were premature, showing that prematurity was responsible directly or indirectly for foetal loss in almost all cases.

According to Ho and Wu (1975) 91% of deaths occurred in preterm infants. Foetal loss in premature group was 39% as compared to 3.75% in mature group in our series (Table V). Patel and Patel (1961) reported a foetal loss of 26.4% premature babies and 7.8% in mature babies.

The mean duration of twin gestation in this study was 36.15 weeks which was less than that reported by others (Ho and Wu 1975, Joupilla *et al* 1975). When the group who had antenatal care was considered, the mean duration was 36.91 weeks which compared well with others.

In the present series PNM dropped suddenly after 36 weeks. Perinatal death in

our study at any period of gestation below 37 weeks was higher as compared to that reported by Farooqui *et al* (1973) and Joupilla *et al* (1975).

In the present study, 86.6% of twin babies weighed less than 2500 gms as compared to 54% reported by Seski and Miller (1963). Mean birth weight of babies varied from 2031 gms (Munnell and Taylor 1946) to 2567 gms (Joupilla *et al* 1975). In this series, mean birth weight was 2027 gms. It was more in antenatal group (2172 gms) as compared to emergency group (1738 gms) though not significant statistically.

PNM for P.E.T. patients was 28.8% in emergency group as compared to 11.9% in antenatal group. Foetal loss in PET group was less than overall perinatal loss (34.33%), Bender (1952) and Tow (1959) found similar results. Hydramnios did not alter perinatal loss, though Tow (1959) reported double the overall mortality with hydramnios.

#### Summary

1. Antenatal care decreased perinatal mortality significantly.

2. Prematurity was responsible for foetal loss directly or indirectly in almost all cases.

3. Antenatal care could prolong twin gestation and increase the birth weight.

4. Maternal complications were not associated with increased perinatal mortality in our series.

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