

FOETAL SURVIVAL IN TWIN PREGNANCY

by

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This analysis is based on the study of 441 twin deliveries which were conducted in this hospital during the period of five years (January 1963 to December 1967). Out of 882 twin babies delivered during this period 205 babies were lost giving a perinatal mortality of 23.2 per cent, the perinatal mortality for single pregnancy being 10.2 per cent during the same period. Among 205 babies lost, 99 were first and 106 were second twins.

The object of the present analysis of cases of twin delivery was to find out the possible aspects in the management of pregnancy and delivery of twins which could improve the survival rate.

Analysis of Table I shows that the foetal survival rate rises with the period of gestation, prematurity being a great hazard in the foetal survival. Out of 99 foetal deaths in the first twin and 106 foetal deaths in the second twin, 98 in the first and 102 in the second twins were premature. Prematurity, as an outstanding feature for foetal death, has been stressed by Potter (1949), Mellroy and Evans (1927) and Anderson (1956). Twin pregnancy is often associated with complications like anaemia, toxæmia and hydramnios which will be discussed later, and the gross foetal mortality is due to the combined effects of all these.

Table II shows that the foetal sur-

TABLE I
Foetal survival in relation to the period of gestation

Duration of pregnancy	No. of cases	1st twin		2nd twin	
		No. of survivals	No. of perinatal deaths	No. of survivals	No. of perinatal deaths
28—30 weeks	100	29	71	30	70
30—32 weeks	136	113	23	113	23
34—36 weeks	104	100	4	95	9
36—40 weeks	92	91	1	88	4
Just over 40 weeks	9	9	Nil	9	Nil
Total	441	342	99	335	106

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vival has a direct relationship with the birth weight and the maximum survival is seen above the birth weight of 2000 gms. or more. Though

TABLE II
Foetal survival in relation to birth weight

Birth weight	No. of cases	1st twin		2nd twin	
		No. of survivals	No. of perinatal deaths	No. of survivals	No. of perinatal deaths
Between 1000—1500 gms.	95	17	78	14	81
Between 1500—2000 gms.	99	87	11	84	14
Between 2000—2500 gms.	94	88	6	86	8
Between 2500—3000 gms.	76	73	3	74	2
Between 3000—3500 gms.	74	73	1	73	1
Over 3500 gms.	4	4	Nil	4	Nil
Total	441	342	99	335	106

prematurity and under-weight often go together, the foetal survival is more for the same weight where the period of gestation is more than 34 weeks. There was no difference in the survival rate of the 1st and 2nd twin when the weight of the foetuses were the same, as stressed by many authors (Choudhary, 1967).

There is no uniformity of opinion regarding the optimum time interval between the delivery of the first and second twin. A review of the literature shows that in more than 60% of the cases spontaneous delivery of the 2nd twin takes place between 10 to 30 minutes after the birth of the 1st twin. Little and Friedmann (1958)

found that the best delivery interval was between 2½ minutes to 15 minutes, whereas Percival (1959) recommends that intervention should be avoided for at least 30 minutes in the absence of foetal distress (or bleeding) because prolonged delay due to inertia even up to an hour is harmless.

A critical study of Table III shows that in the maximum number of cases (over 55% of cases) the second twin delivered spontaneously within half an hour of the birth of the first twin. The perinatal mortality is not significantly high in the last group where women in labour, were admitted after having delivered the first twin before

TABLE III
Foetal survival in relation to time interval

Time interval	No. of cases	1st twin		2nd twin	
		No. of survivals	No. of perinatal deaths	No. of survivals	No. of perinatal deaths
Delivery under 5 minutes	19	15	4	16	3
Delivery between 5—10 mts.	71	53	18	48	23
Delivery between 10—30 mts.	192	163	29	160	32
Delivery between 30—45 mts.	18	13	5	12	6
Delivery between 45—60 mts.	28	21	7	19	9
Delivery over 60 minutes	113	77	36	80	33
Total	441	342	99	335	106

admission. There is an interesting point to note in this group that the number of perinatal deaths was a little less in the second twin than in the first. This may be due to delivery of the first twin in unfavourable circumstances at home (many of this group delivered on the way to the hospital). The number is, however, too small to draw a definite conclusion but one is tempted to think that perhaps undue haste in the delivery of the second baby in the absence of complications is not necessary. This point is being suggested in view of the modern tendency to shorten the delivery interval between the first and second twin.

In view of the present findings, it appears that undue haste to deliver the second twin while the cervix is still dilated, increases the demand for operative interference which in itself is a great hazard for foetal survival.

Table IV shows the incidence of various maternal complications met with in the present series. Almost all the authors have reported a higher incidence of toxæmia in twin pregnancy in comparison to single pregnancy. But in the present series, 98

cases of 441 pregnancies had moderate to severe degrees of anaemia, whereas toxæmia of pregnancy was found only in 50 cases. This is in keeping with the increased demand of twin pregnancy, especially in those patients where the majority had minimum or no care during pregnancy. The incidence of hydramnios was also lower than that reported by others (Choudhary, 1967). About 50% of the cases had none or milder complications which have not been shown here as they did not affect the foetal survival rate.

The analysis of Table V shows that most of the cases delivered normally. In case of the second twin, artificial rupture of membrane was done in fifty cases which has not been shown here. Almost all of them delivered normally. The incidence of operative interference is rather less than that reported by various authors, hence its effect on the foetal survival can not be assessed properly in either twin. The largest number of perinatal deaths was found in cases of breech delivery which can be explained by the increased incidence of premature deliveries in this series.

TABLE IV
Foetal survival in relation to maternal complications

No. of cases	1st twin		2nd twin		
	No. of survivals	No. of perinatal deaths	No. of survivals	No. of perinatal deaths	
Anaemia	98	50	48	42	56
Toxaemia	50	38	12	37	13
Antepartum haemorrhage	15	13	2	13	2
Hydramnios	9	4	5	4	5
Essential hypertension	30	24	6	23	7
Nephritis	Nil	Nil	Nil	Nil	Nil

TABLE V
Foetal survival in relation to the mode of delivery

Mode of delivery	1st twin			2nd twin		
	No. of cases	No. of survivals	No. of perinatal deaths	No. of cases	No. of survivals	No. of perinatal deaths
Normal delivery	287	273	14	279	265	14
Breech delivery	134	49	85	136	48	88
Forceps	15	15	Nil	10	9	1
Internal version-Breech extraction.	Nil	Nil	Nil	11	8	3
Caesarean section	5	5	Nil	5	5	Nil
Total	441	342	99	441	335	106

TABLE VI
Foetal survival in relation to ante-natal rest

Period of rest	No. of cases	1st twin		2nd twin	
		No. of survivals	No. of perinatal deaths	No. of survivals	No. of perinatal deaths
32—34 weeks	17	16	1	16	1
34—36 weeks	45	35	10	33	12
36—40 weeks	43	36	7	35	8
No rest	336	225	81	251	85
Total	441	342	99	335	106

Table VI shows that the chances of foetal survival is maximum in the group of cases who had antenatal rest either at home or in the hospital. Almost all the authors, Bender (1952); Guttmacher (1939, 1958); Allen (1959), MacDonald (1962); Browne and Dixon (1963); Anderson (1956), except Dunn (1961) have emphasized the value of rest in preventing premature delivery, because the high mortality in twin pregnancy is mainly due to the greater incidence of very small babies. And most of the small babies result from premature labour of spontaneous onset.

Though bed rest appears to be logically good, economically it is difficult

to provide this in the hospital from such an early period of 32 weeks.

It is, therefore, suggested that with the present economic background of our country it would be an ideal solution if these mothers were advised to take rest at home from the time twin pregnancy is diagnosed. A team of personnel conducting ante-natal clinics should be deputed to visit these cases in their homes at regular intervals during this period of rest and they should be only hospitalized when some complications develop.

This procedure will reduce the demand on the hospital beds for such a long period as is needed in these cases and at the same time the pre-

mature onset of labour will be reduced to a considerable extent. There is a drawback in this procedure in that most of these cases are multi-gravida who may not get time to take rest. I am, however, convinced (after a small trial) that after proper explanation and guidance it can be easily achieved in those who have someone to help in the family. For those who have no helping hand in the family it can be arranged by deputing some social worker or other person to help with their household duties while they are at rest. It will give a great mental relief to these patients also, as they will be at their homes where they can at least guide the second member of the family in looking after their household work. Besides, this method can be easily applicable to primigravidas who constitute one-fourth of the total number of twin pregnancy cases.

Comments

From the analysis of this series it appears that the foetal survival rate can be improved by:

(1) Providing regular ante-natal check-up to all mothers having twin pregnancy. It will help us in diagnosing maternal complications, especially anaemia and toxæmia, and timely treatment for these complications will increase the chance of foetal survival.

(2) Ante-natal bed rest is an important factor in preventing premature onset of labour (which is a great hazard in twin pregnancy). As the number of beds in most hospitals is much less than the requirement of maternity cases, it is suggested that these mothers should be instructed

to take rest at home and arrangements should be made to get them examined regularly during this period in their homes.

(3) Avoiding undue haste in the delivery of the second twin in the absence of complications, waiting even upto an hour. This measure reduces the need for operative interference and anaesthesia, as the lungs of these rather immature and asphyxiated foetuses are very vulnerable to the anaesthetic agent.

Summary

(1) Foetal survival rate in 441 cases of twin pregnancy has been analysed.

(2) Importance of ante-natal rest in preventing the premature onset of labour (a hazard of twin pregnancy) has been stressed.

(3) In order to reduce the demand on hospital beds, rest at home with provision of regular ante-natal care in their homes has been suggested.

(4) Avoiding operative interference upto an hour of the birth of the first twin in the absence of complications has been emphasized.

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