

STATISTICAL ANALYSIS OF STILL-BIRTHS (1956-1960) IN THE EDEN HOSPITAL, MEDICAL COLLEGE, CALCUTTA

by

A. C. BHOUMIK*, M.B. (Cal.), M.R.C.O.G. (Lond.)

and

D. C. DUTTA**, M.B.B.S., D.G.O., M.O. (Cal.)

Statistical analysis of still-births presents several difficulties. First of all, in the registration of still-births and live-births, different countries have adopted different criteria. In some countries, babies, born with heart beats but failing to breathe, have been recorded as still-births and in others as live-births. International standardisation of definitions of still-births and live-births was first attempted by the International Statistical Institute at its 1915 Session. It was decided that the criterion for determining the presence of life or its absence (i.e. still-births) should be "any sign of life". But the League of Nations Health Committee, in 1925, recommended that the criterion should be "breathing" rather than any sign of life.

For statistical purposes still-birth rate means the number of viable still-births, i.e. still-births after the 28th

completed weeks' gestation per 1000 deliveries. In recent years vital statistics on foetal and early neonatal deaths are reckoned together under the single head perinatal mortality, because the causes of foetal and early neonatal deaths have many things in common and sometimes it is a matter of chance whether a foetus dies before its birth and is registered as a still-birth or it dies soon after its birth and is registered as a neonatal death. But as the subject selected for this Congress has been "still-births", we shall limit our discussions to the study of the problem of still-births.

Again, determination of the causes of still-births has not been easy. Most of the published statistics show that the causes of about 50 per cent of the antepartum deaths remain unknown or obscure, and in the other 50 per cent various maternal, placental or foetal conditions are shown as causes of death. These again may be due to more fundamental conditions, a knowledge of which is essential towards effective reduction of such deaths. Autopsy studies, though accurate, have not been of much value in the determination of the causes of still-births. In macerated still-births, the autopsy findings are usually negative and in fresh still-births many

* *Director-Professor, Dept. of Obstetrics and Gynaecology, Medical College, Calcutta.*

** *Clinical Tutor and Additional Lecturer, Dept. of Obstetrics and Gynaecology, Medical College, Calcutta.*

Read at the 11th All India Obstetric and Gynaecological Congress at Calcutta in January 1961.

autopsy findings are of non-specific nature.

The number of still-births in the Eden Hospital during the period 1956-60 has been 3015 among 71,808 confinements, a still-birth rate of 42/1000. Thus the still-birth rate of our hospital has been very high in comparison with the published reports from most of the western countries. This high still-birth rate is explained by the fact that about 80% of the maternity cases in our hospital were unbooked cases and many were admitted late in labour with various complications.

Of the 3015 still-births, 1297 (43%) were antepartum deaths or macerated still-births and 1718 (57%) were intrapartum deaths or fresh still-births.

Table I shows the causes of the macerated still-births (antepartum deaths).

type, it may be said that 27.7% of antepartum deaths were due to toxæmias. Incidence of syphilis, diabetes and Rh. incompatibility has been small. In 59% of antepartum deaths, the causes of death remain undetermined. Since the cause of antepartum deaths is ultimately due to anoxia, these cases where the cause of death is undetermined probably represent cases of placental insufficiency of unknown origin. Anaemia, malnutrition and postmaturity are probably contributing factors in some of these cases.

1718 cases of fresh still-births have been analysed. Among the fresh still-births, 670, i.e. 39%, were premature and 1048, i.e. 61%, were mature. Table II shows the causes of fresh premature still-births.

In the premature group, causes relating to pregnancy, namely toxæmia, A.P.H. and anaemia, accounted

TABLE I

Causes of death	Number	Percentage
Toxaemia of pregnancy	288	22.2
Antepartum haemorrhage—		
(a) Accidental haemorrhage	71	5.5
(b) Placenta praevia	15	1.1
Acute fever	42	3.3
Anaemia in pregnancy	22	1.7
Rh. incompatibility	22	1.7
Syphilis	33	2.5
Diabetes	14	1.1
Congenital malformations	25	1.9
Cause unknown	765	59

A glance at the above figures shows that toxæmia has been the most important cause of antepartum deaths and that accidental haemorrhage has been the next important cause. As at least 50% of the accidental haemorrhage were of toxæmic

for 61.3% of the still-births, causes relating to labour accounted for 22.2% of the still-births, 2.2% were due to congenital malformations and in 14.3% the cause was unknown.

Table III shows causes of mature fresh still-births.

TABLE II

	No.	Percentage
I. Complications of pregnancy		
Toxaemia of pregnancy	108	28.1
Accidental haemorrhage	82	12.2
Placenta praevia	112	16.7
Anaemia in pregnancy	29	4.3
II. Complications of labour		
Premature rupture of membranes	32	4.8
Cord complications	36	5.4
Difficult labour	80	12
III. Congenital malformations	15	2.2
IV. Cause unknown	96	14.3

TABLE III

	No.	Percentage
I. Complications of pregnancy		
Toxaemias	119	11.3
Accidental haemorrhage	37	3.5
Placenta praevia	25	2.5
Anaemia in pregnancy	18	1.7
Post-maturity	53	5
II. Complications of labour		
Premature rupture of the membranes	46	4.5
Cord complications	51	4.9
Difficult labour	545	52.1
III. Congenital malformation	27	2.5
IV. Cause unknown	127	12

In the mature group, causes related to pregnancy accounted for only 24% of the fresh still-births, causes related to labour accounted for 61.5%; 2.5% were due to congenital

malformations and in 12% the cause was unknown.

Details of death, both premature and mature, due to difficult labour have been shown in Table IV.

TABLE IV

Causes	Premature		Mature	
	No.	%	No.	%
Prolonged labour with spontaneous delivery	0	0	62	11.4
Prolonged labour with forceps	13	16.3	160	29.4
Breech delivery	43	53.8	73	13.4
Version	14	17.5	30	5.5
Rupture of uterus	3	3.7	52	9.5
Destructive operations	7	8.7	168	30.8

It has been found that in the pre-mature group, breech delivery accounted for 53.8% of the still-births and in the mature group forceps and destructive operations accounted for about 2/3rd of the deaths.

It was possible to study 227 cases of fresh still-births by autopsy including histological examination of selected tissues. Table V shows causes of death as revealed by post-mortem examination of 227 cases of fresh still-births.

mation, thus explaining some obscure causes of death. As a result cause undetermined has been reduced to 6.6%.

Table VI shows analysis of broad causes of still-births, both fresh and macerated.

In 32.8 per cent, that is roughly in 1/3rd of the cases, the causes were unknown, complications of pregnancy accounted for 38.7 per cent, complications of labour accounted for 26.3 per cent and congenital malfor-

TABLE V

	No.	Percentage
Asphyxia	98	43.2
Intra-cranial haemorrhage	79	34.8
Pneumonia	7	3.1
Congenital malformation	19	8.4
Others	9	4.1
Undetermined	15	6.6

TABLE VI

	No.	Percentage
I. Complications of pregnancy		
Toxaemias	595	19.7
Antepartum haemorrhage	342	11.3
Anaemia	69	2.3
Others	164	5.4
II. Complications of labour	790	26.3
III. Congenital malformations	67	2.2
IV. Cause unknown	988	32.8

It should be noted that autopsy studies tell us how the babies died rather than why the babies died, so that clinical study and knowledge of the conditions surrounding pregnancy and labour are essential. Autopsy study revealed 3% pneumonia and 8.4% congenital malfor-

mations accounted for 2.2 per cent of cases.

Influence of Age and Parity

Influence of age and parity on the still-birth rate due to different causes has been studied. The findings are in agreement with those of other obser-

vers. Still-births due to all causes were found to rise with age. Still-births from toxæmia were highest in primipara, but still-births from antepartum hæmorrhage were high in multiparous group. Still-births from complications of labour showed a high incidence in first para, dropped in 2nd and 3rd para, found to rise significantly from 6th para.

Acknowledgment

We are grateful to Dr. K. C. Sarbadhikari, Principal-cum-Superintendent, Medical College and Hospitals, Calcutta, for his permission to publish these data from the hospital records.