

1

## MULTIPLE PREGNANCY AS A HIGH-RISK PREGNANCY

Prognosis for the Twin Newborn: Risk of Prematurity, Low Birth Weight, and Perinatal Death

Multiple Pregnancy Complications

Multiple Pregnancy Duration

Early Diagnosis and Preventive Care in Multiple Pregnancy

Labor and Delivery in Multiple Pregnancy

# MULTIPLE PREGNANCY AS A HIGH-RISK PREGNANCY

## Medical Statistical Data from the German Democratic Republic

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*In 1969 children of a multiple birth in the GDR made up 1.9% of livebirths and 15.3% of early neonatal deaths. The early neonatal mortality rate of children from a multiple birth was 95.7‰, that of all livebirths 12.4‰. The cause was the low birth weight of children from a multiple birth (56.2% vs. 5.8% of all livebirths). Their low birth weight is the result of a hypotrophic development caused by malnutrition. The loss of children from a multiple birth (stillbirths, early neonatal and postneonatal deaths) was 143‰. International experience has shown that such heavy losses can be largely prevented by bed rest of the woman with a multiple pregnancy. We therefore strongly recommend early diagnosis and early in-patient care of women with multiple pregnancy.*

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In the GDR, in 1969 and in 1970, children from a multiple birth accounted for respectively 9.4‰ and 9.8‰ of the total livebirths (see Table). These children were mainly twins. In 1970 the rate of twin births was 9.79‰ and that of triplet births 0.08. Between 1950 and 1966 the multiple-birth rate varied between 10.04 and 11.75‰. In 1967 and 1968 the rate decreased, and in 1969 the rate declined markedly to 9.43‰. The birth rate of triplets decreased from 0.08‰ in 1967 and 1968 to 0.03‰ in 1969. Such low figures have never been recorded since 1950.

We propose the following interpretation for this decrease of multiple births (Leetz 1972). In 1969, there were two influenza peaks in the GDR — one in March and April and the other in November and December. Maternal influenza infections possibly resulted in intrauterine anoxia and hypoxia with intrauterine death of fetuses in numerous cases of multiple pregnancy. The two influenza peaks in 1969 brought about, for the first time in the GDR, an increased risk for all children of perinatal death (intrapartum and within 24 hours after birth). The result was an increased early neonatal mortality rate (11.3‰ in 1968, 12.4‰ in 1969). Intrauterine anoxia and hypoxia (20.8 and 32.9 per 10,000 livebirths, respectively in 1968 and 1969) and cerebral hemorrhage (in 1968 1.55‰ and in 1969 2.25‰) played a much greater part as causes of death than in the years before. Our unfavourable development in 1969, as well as the increased infant mortality recorded in several European countries in 1968, 1969, and 1970, were probably due to influenza epidemica (Griffith et al. 1972). It seems likely that a multiple pregnancy is especially affected by maternal influenza infection.

Table. *Multiple Births in the German Democratic Republic* (Statistisches Jahrbuch der DDR 1971 und 1972)

Year	Total births	Multiple births			Multiple births per 1000		
		Total	Twins	Triplets	Total	Twins	Triplets
1950	307,239	3346	3327	18	10.89	10.83	0.06
51	313,967	3688	3664	23	11.75	11.68	.07
52	309,096	3510	3489	21	11.36	11.29	.07
53	301,414	3416	3387	29	11.33	11.23	.10
54	296,138	3289	3268	21	11.11	11.04	.07
55	295,512	3250	3230	20	11.00	10.93	.07
56	283,323	3115	3092	22	10.99	10.92	.07
57	274,902	2934	2906	28	10.67	10.57	.10
58	272,851	2923	2904	19	10.71	10.64	.07
59	293,514	3225	3194	31	10.99	10.88	.11
1960	294,652	3076	3054	22	10.44	10.36	.07
61	302,183	3286	3254	32	10.87	10.77	.11
62	299,330	3020	3001	19	10.09	10.03	.06
63	302,643	3092	3070	22	10.22	10.14	.07
64	292,713	3106	3083	23	10.61	10.53	.08
65	281,707	2992	2968	24	10.62	10.54	.08
66	268,631	2698	2674	24	10.04	9.95	.09
67	253,250	2488	2467	21	9.82	9.74	.08
68	245,538	2389	2370	19	9.73	9.65	.08
69	239,256	2256	2249	7	9.43	9.40	.03
1970	237,069	2342	2322	20	9.88	9.79	.08
1971	234,908	2277	2256	21	9.69	9.60	0.09

## According to Martius (1964):

If a pregnant woman has an acute infection with high fever, there is always a threat to the continuation of her pregnancy. (p. 198).

Some influenza epidemics are characterized by an especially high frequency of spontaneous abortions even during the first months of pregnancy. An increased occurrence of premature births and premature onset of labour are to be expected during the last part of pregnancy. Lung complications in the form of extensive pneumonias occur with increased frequency in pregnant women. (p. 209).

There is no doubt that there are more cases of multiple pregnancy than of multiple birth. Frequently one or all of the multiple fetuses die prematurely and disintegrate or are expelled through a spontaneous abortion. (pp. 592-593).

Verschuer (cf. Martius 1964, p. 592) is of the opinion that approximately one third of all twin pregnancies end as single pregnancies. Stoeckel gives a similar description of the effects of influenza on pregnancy and multiple pregnancy (Stoeckel 1966).

We were able to point out that the concurrence of influenzal pneumonia and heart damage in pregnant women endangers in particular the intrauterine development (Leetz 1973). "There is frequently in multiple pregnancy an especially high risk of respiratory insufficiency due to increased acidosis." (Martius 1964, p. 260).

We may assume, therefore, that any severe influenza infection and particularly influenzal pneumonia endanger the pregnancy and the fetus, and that this is especially true in cases of multiple pregnancy. Special care of the pregnant women and their fetuses over and above the usual care is therefore urgently needed.

It is well known that children from a multiple birth have considerably lower average weights and lengths at birth than children from single births, and that they also frequently have a shorter gestational age. In 1969 the average birth weight of liveborn children from a multiple birth was 2431 g as compared to a birth weight of 3353 g of all livebirths, and their average length at birth was 47.1 cm as compared to 50.6 cm of all livebirths. This is primarily due to the hypotrophic development of multiple fetuses caused by malnutrition, especially during the last trimester of pregnancy, leading to a condition of high risk. Children from a multiple birth are at special risk caused by a disproportion between the placenta and the fetuses.

In 1969, of a total of 4587 liveborn children from a multiple birth, there were 2578 low-birth-weight children ("premature births"). The resulting rate was 56.2%, as compared to a low birth weight rate of 5.8% for all livebirths.

We are of the opinion that low-birth-weight children from a multiple birth are not a special form of intrauterine hypotrophic development but that they are typical for intrauterine malnutrition in general and that multiple pregnancy is one of the most important causes for fetal retarded development.

Among early neonatal deaths the proportion of children from a multiple birth in 1969 was 15.3%, while among livebirths their proportion was 1.9%. The early neonatal mortality of children from a multiple birth was with 95.7‰, i.e., eight times higher than the rate for all livebirths (12.4‰). The stillbirth rate of the former was nearly three times higher than that of all stillbirths; their postneonatal mortality rate was twice that of the postneonatal deaths. The total loss of children from a multiple birth (stillbirths, early neonatal and postneonatal deaths) was 143‰ in 1969. As the multiple births were mostly twin births, this means that every seventh twin child died or that every third or fourth twin pregnancy resulted in one dead child.

The death of children is not the only risk of multiple pregnancy. Cerebral damage also calls for preventive medical action. It is unfortunately very frequent in children from a multiple birth and puts a heavy burden on the child, the family, and society.

International experience has shown that bed rest during pregnancy leads to an optimal placental circulation improving the nutritional state of the multiple fetuses. As a result their birth weights increase, and they have a better chance of survival. Therefore, we strongly recommend an early diagnosis of multiple pregnancy and the early in-patient care of women with a multiple pregnancy. These measures were carried through by the Obstetrical and Gynecological Department of the University of Debrecen Medical School. The average birth-weight of the newborn infants was increased by more than 500 g and the high premature-birth rate in multiple pregnancy was reduced to 16.6% (in the GDR the rate was 56.2% in 1969) (Komaromy and Lampe 1969).

In allocating beds for the in-patient antepartum care, the needs of multiple pregnancy should also be considered. We are of the opinion that such measures are justified by humanitarian and demographic and health policy considerations. The necessary expenditure can also be justified from the point of view of economy, as the very expensive care of low-birth-weight children from a multiple birth in centres for premature children will largely become unnecessary. The expenditure for the in-patient care of women with a multiple pregnancy (about 2500 yearly in the GDR) is comparatively low as it does not put heavy demands on the hospitals. The economic losses brought about by those women's relatively early exemption from work is negligible as compared to the resulting benefits.

Even now, it would be of benefit if women with a multiple pregnancy are granted a considerably prolonged antenatal leave. By following our recommendations an additional 300-500 children from multiple pregnancy could survive yearly in the GDR. A further benefit would be the prevention of cerebral damage of numerous surviving children from multiple pregnancy.

We would very much appreciate if this symposium were to stimulate the setting up of an *ad hoc* working group to study the problem of optimal care to women with a multiple pregnancy and to submit their results and recommendations to Ministries of Health.

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