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Higher Order Multiple Births: Natural Wonder or Failure of Therapy?

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Abstract. Data of 601 families with triplets and higher multiples have been collected. Since about nine years the number of higher-order births has been increasing enormously. The average pregnancy duration and the average birthweight of these mostly premature children have been declining from year to year. Despite the progress in neonatology, the death rate and the rate of handicapped children is very high. To prevent such disastrous outcomes, treatments for infertility should be performed only by physicians in centers with strong controls. Selective abortions are no regular solution to the problem of higher multiple gestation.

Key words: Triplets, Higher order multiples, Birthweight, Prematurity, Fertility drugs, Neonatal mortality

There have always been higher order multiple births. They were considered a natural wonder, even though, at least in the past, the children's chances of survival were almost nil. Examples include the births and early deaths of quintuplets in Dillingen in 1566, and in Lommatzsch in 1688 [4]. This study looks at current trends concerning higher order multiple births in German-speaking Europe. Except where otherwise noted, all data derive from the ABC Club: International Organization for Triplets and Higher Order Multiples. The data were gathered through questionnaires filled out by members of the organization, telephone inquiries directed to families with multiples and personal visits to families with multiples.

For decades, one triplet birth was predicted for every 10,000 deliveries in Germany. Since 1984, the rate doubled to 1:5,000. Higher multiples such as quadruplets were extremely rare in former times. Since 1980, and especially since 1984, the birth rate of quads, quints, and even sextuplets, has been increasing dramaticaly (Table 1).

Table 1 - Higher order multiple births and general birth rate in West Germany

Year	Triplets	Quads	Quints	Sext.	Total no. of births	Total births with occurrence of one triplet birth
1950	86	1	–	–	821,002	9,547
1970	83	1	–	–	811,062	9,772
1975	61	–	–	–	599,522	9,828
1980	72	4	2	–	617,940	8,583
1981	82	4	2	1	621,724	7,582
1982	74	4	1	–	618,229	8,355
1983	62	5	3	1	590,987	9,532
1984	107	7	3	1	580,560	5,426
1985	114	14	1	–	582,114	5,106
1986	118	11	3	1	621,403	5,266
1987	131	19	3	–	636,970	4,862
1988	197	19	1	1	671,578	3,409

Based on figures from the Federal Bureau of Statistics. The Federal Bureau of Statistics registers births when the infants have a birthweight of at least 1,000 g. Infants with less than 1,000 g birthweight, if they do not survive, are considered a miscarriage by law and thus never enter the birth statistics.

Most multiple gestations end too early. Thanks to the progress in neonatology and surgery, a good many of these children survive, even of less than 600 g. However, the risk that these children will become disabled is very high. The following are the most common conditions and subsequent disabilities which threaten premature infants: brain hemorrhage with subsequent cerebral palsy and hydrocephalus; retinopathy of prematurity, which often progresses into blindness; heart defects which demand surgery; spontaneous pneumothorax; necrotic enterocolitis, a dangerous problem which can only be solved by repeated surgery.

There has been important medical progress in helping solve or alleviate the problems of a spontaneous, naturally occurring multiple gestation. It cannot be the goal of medicine, however, to create multiple gestations. Yet, certain therapeutical procedures have produced precisely that result (Table 2).

Table 2 - Causes of multiple gestation

	Years of delivery									
	1978-1983					1984-1989				
	Total no. of mothers	No. of mothers with				Total no. of mothers	No. of mothers with			
		Triplets	Quads	Quints	Sext.		Triplets	Quads	Quints	Sext.
Untreated	31	30	–	1	–	69	68	1	–	–
Fertility drugs	36	20	9	4	3	135	93	32	8	3
IVF	–	–	–	–	–	18	14	4	–	–

In the meantime, a procedure has been found to compensate for too many embryos within the womb. With an injection into the heart, one or more embryos are killed in the hope that the remaining one or two will be healthy at term. Hepp [3] calls this procedure an *unselected* abortion, since the most accessible embryos are the ones aborted.

The average time of gestation for triplets has been declining from year to year. Consequently, their birthweight has also been decreasing (Table 3). The same tendency may be seen in quadruplets (Table 4).

Table 3 - Average time of gestation and median birthweight of triplets

Years of delivery	No. of mothers with triplets	Average time of gestation (wk)	Median birthweight per child (g)
1922-79	44	34.6	2,020
1980-83	44	34.4	1,920
1984-87	135	33.9	1.810
1988-89	70	33.4	1,760

Table 4 - Average time of gestation and median birthweight of quadruplets, quintuplets, sextuplets

	Years of delivery	No. of mothers	Average time of gestation (wk)	Median birthweight per child (g)
Quads	1912-83	15	34.0	1,550
	1984-88	40	31.1	1,210
Quints	1972-88	17	29.4	1,050
Sext.	1981-88	5	29.1	970

Medical science faces certain basic human limitations. How much weight can a particular woman carry toward the time of delivery (Table 5)?

By tabulating the death rate of the children in different groups, it can be seen how extensive the risk is for premature multiples (Table 6). In this context, "death" is defined as the death of an infant before its 1st birthday. The two groups with a six-year span (Table 2) are not fully comparable. The ABC Club was founded only in 1982, and over the years became better known. Pregnant mothers in particular were not registered before 1982. Also, mothers who had lost their children by that time never reported those deaths. This partly explains the seemingly higher death rate among the children within the last six years. On the other hand, ever weaker prematures survive at least the first days and weeks of life.

Table 5 - Combined birthweight per multiple set

	No. of sets	Median birth-weight per set (g)
Triplets	297	5,510
Quads	55	5,390
Quints	17	5,310
Sext.	5	5,720

Table 6 - Death rate of higher order multiples

	Years of delivery							
	1978-1983				1984-1989			
	Mothers	Children	Deceased children	Death rate (%)	Mothers	Children	Deceased children	Death rate (%)
Triplets	133	399	7	1.8	309	927	40	4.3
Quads	11	44	6	13.6	49	196	31	15.8
Quints	5	25	7	28.0	8	40	9	22.5
Sext.	2	12	4	33.0	3	18	5	27.8

Two mothers of triplets and one mother of sextuplets died on delivery.

The death rates must be considered together with the high rate of health problems for the surviving children and mothers. So far, it has been impossible to record the number of slightly damaged and more extensively handicapped children. Their parents avoid talking about these issues, minimize the handicaps, and very often have never been fully informed about the complications which their children experienced during their first weeks of life at the hospital. The long-term damage among the children ranges from very severe to barely noticeable. In any case, the percentage of handicapped children certainly exceeds the death rate.

CONCLUSIONS

The births of higher-order multiples still involve high risks, whether pregnancy occurred with or without medical intervention. In all cases, beginning with pregnancy, mothers of multiples require more counselling, care, and practical assistance than they have received in the past.

Also, extreme caution is needed in the use of hormones to treat sterility and ir-

regularity in the menstrual cycle, in order to avoid inducing a pregnancy with higher multiples. Procedures should include the following:

1) Hormonal treatment should occur only under the supervision of specialists working in medical centers equipped for it.

2) No more than three zygotes should be implanted in the case of artificial impregnation.

3) Greater attention should be devoted to factors of stress and hereditary tendencies of the women to be treated.

4) Selective abortions should never be used as a regular solution to the problem of higher multiple gestation.

5) Pharmacological research should be focused on the unintended consequences of using hormonal medications.

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