

SOME ASPECTS OF THE PHYSICAL AND MENTAL DEVELOPMENT OF TRIPLETS

K. GLINKOWA, J. STACHYRA, I. GLOWACKA

Province Center of Mother and Child Care, Lublin, Poland

The authors have examined 30 children from triplet pregnancies aged 18 months to 16.5 years. The group included 20 girls and 10 boys. Triplet pregnancy was found to be, in the average, the fourth consecutive pregnancy in mothers. Physical and mental development was assessed. It was found that 60% of children showed a physical development below the appropriate norm for their age. In 83% of the children under examination mental age ranged below chronological age.

Most pregnancies are concluded in the human population by the birth of one fetus. Twin pregnancies occur once in 89 births, triplet pregnancies once in 89² (Roszkowski 1967). It is not always possible to keep alive all neonates from a multiple pregnancy because of their immaturity, expressed, among other things, by their low body weight and size, insufficient adipous tissue, immunological and organ immaturity.

As is known, infants born from twin pregnancies comparatively rapidly compensate deficiencies of physical development, and their mental development does not deviate from the normal one, either.

In the present study we have undertaken the task to assess the physical and mental development of children from triplet pregnancies living in the Lublin province.

MATERIAL AND METHODS

We included in our examinations the 27 children of 9 sets of triplets and 3 single children from triplet pregnancies whose siblings died. In total the examinations embraced 30 children, 20 girls and 10 boys, 18 months to 16.5 years old. Three sets were composed of girls only, 2 of boys only, and 4 of two girls and one boy each. The single children were girls.

As far as possible the parents were included into the examinations, so that 12 married couples of parents could be examined.

The investigations included the following examinations:

1. Personal and environmental interview, considering parity, course of pregnancy and childbirth, neonatal period and early infancy, disease incurred and medical care. In the environmental interview we tried to estimate the physical and mental development of the parents, their age when the triplets were born, the state of health and development of the siblings from other pregnancies, the educational level and profession of the parents, the living conditions and source of income of the family. The interview tackled also the question of the occurrence of multiple pregnancies in the families investigated.
2. The physical development of children from multiple pregnancies was investigated by means of anthropometric measurements plotted on morphograms according to Wolanski (1965) and compared with normal values for age and sex.

3. The mental development was assessed by Psyche-Cattell and Terman-Merrill Development Scale; mental age and intelligence quotients were determined in this investigation. The mental age was compared with the chronological age, and the intelligence quotients with the normal level.
4. All children were subjected to thorough physical examinations and fundamental laboratory analyses were carried out. ABO blood groups and Rh factor were established in all children and in the parents when possible.

RESULTS

1. The comparison of the results obtained in the interviews showed that all pregnancies and deliveries had passed without complications, labors having occurred by natural powers. The neonatal and infantile stages passed without complications, all children investigated having been kept three to six weeks at the neonate ward.

It was found that, of the 24-person group of parents investigated, one mother died of a neoplasm of the generative organs, one is ill with schizophrenia and is on long-term hospital treatment. One of the fathers died in a motor car accident. Two fathers are alcoholics. The physical development did not markedly deviate from the norm.

In the 24-person group of the children's parents, 15 persons had elementary-school education, the other 9 persons had concluded the 2nd or 6th grade of elementary school. The age of the mother at the birth of the triplets was 25 to 41.5 years, with a mean at 34.5. The age of the father at the birth of the triplets was 19 to 45 years, with a mean at 35.5 (markedly reduced by a 19-year old father).

The triplet pregnancy was the second pregnancy in 1 case, the third in 3 cases, and the sixth in 2 cases.

Besides the triplets, twin births had also occurred in three of the families investigated. All the children studied come from numerous families, as many as 4 to 10 children being raised. The average number of children per family amounted to 7.

Ten of the 12 families investigated live in the countryside and earn their living exclusively by agriculture; 2 families live in small towns of the Lublin province, and they live by the father's manual work.

The living conditions of all families of triplets are very difficult. The following factors contribute to it: the primitive dwelling accommodations in the countryside, without comfort, sewage, tap water, and often even without electricity. One of the families lives in a modern apartment-house in a small town, having a small, but comfortable flat.

The average income is low.

2. The results of the investigation of physical development were plotted on a morphogram. The listing of the results obtained showed that 10 (33%) of the 30 children examined exhibited a physical development corresponding to their age, or only insignificantly diminished; 2 children showed higher parameters than normal for the given age; in 18 children (60%) deficiencies in physical development were found in all parameters investigated, excepting body height, which in 2 boys of this group amounted to normal values or was somewhat higher.

The deficiency in body weight in this group varied from 2.5 to 32% of the normal weight and amounted in the mean to 13.5%.

The deficiency in stature, found in 16 children, amounted from 1 to 18% and in the mean it was 4.5%.

Comparatively high deficiencies were found also when the chest circumferences were compared with normal values.

3. The mental development of the children at the age of 2 to 30 months was examined according to Psyche-Cattell Scale, whereas children over 2 years of age were examined according to Terman-Merrill Scale. The scales applied permitted to obtain two important developmental parameters, i.e., mental age and the intelligence quotient.

As can be seen from the Figure, mental age was higher than chronological age in 5 children only, and lower in the other 25 children. These disproportions varied in individual children.

The intelligence quotients were differentiated both in the whole population and in the various triplets; 5 of the children examined (16.7%) had an IQ in the higher norm level (108-115), 4 had quotients pointing to mental deficiency of a slight degree, while 1 child obtained an IQ on the borderline between normalcy and deficiency. Thus, although a normal IQ was found in 25 children, nevertheless this quotient is at the lower limit of normalcy in 11 children (36.7%).

4. Physical and special examinations of the children revealed 1 case of heart defect, 3 cases of sight defects (2 in the same set of triplets), 1 case of dyscrania in a child with normal mental development, and 1 left-hander.

5. Analysis of ABO blood groups and Rh factor showed that, out of 9 complete triplet sets, 2 female sets were all O Rh + , 1 female set A Rh + , and 1 male set A Rh + . No similarity in the external appearance is however noted in these triplets. On the contrary, they differ among each other by eye and hair color, and also by their physical and mental development.