

RESULTS OF A SPECIALIZED PREVENTIVE CARE IN WOMEN WITH TWIN PREGNANCY

J. HORSKY, Z. FIALOVA

Institute for the Care of Mother and Child, Prague, Czechoslovakia

In a series of 114 twin pregnancies followed in the course of 12 years (1961-1972) we noted the favourable effect of specialized preventive care. More exact diagnostics (ultrasound scanner) shifted the recovery of twins from the 35th to the 30th week of pregnancy. Due to the therapeutic and preventive bed rest and to the systematic use of orciprenalin, the duration of pregnancy has been prolonged from 36 to 38.5 weeks on the average. The perinatal mortality in twin deliveries decreased from 14.4 to 5%.

The association of multiple pregnancy with a greater fetal mortality, higher incidence of prematurity, and more frequent occurrence of late toxemia, is well known. Large statistics from the past decade quote the perinatal mortality between 8 and 14% (11.1 : Anderson 1956; 12.3 : Tow 1959; 10.0 : Weddell et al. 1960; 12.0 : Danielson 1960; 11.9 : Jirátko et al. 1960; 9.6 : Brown and Dixon 1963; 8.0 : Barter et al. 1965; 13.5 : Slomko and Kuczynski 1965a; 14.0 : Hendricks 1966). The latest data naturally have lower numbers averaging between 6 and 8% (8.8 : Musso and Pacilli 1967; 6.9 : Mooney 1970), but sometimes also similar to those of the older paper (10.1 : Ristedts and Kräubig 1968; 14.1 : Weidebach and Klose 1970; 15.0 : Hagen 1971; 13.2 : Langer 1972). The rate of prematurity is quite a high one averaging between 30 and 50% (34 : Danielson 1960; 40 : Jirátko et al. 1960; 30 : Musso and Pacilli 1967; 50 : Friedman et al. 1970). Similarly the incidence of late toxemia is higher. The data, however, are fluctuating according to whether only severe cases (10%) or also mild cases (25-50%) are included. In comparison with the average occurrence, these numbers are 3 to 4 times higher. The presence of hydramnios is also higher, being found in 3 to 9% of cases. The association with congenital malformations, on the other hand, is sometimes denied (Danielson 1960), sometimes confirmed (10.6 : Hendricks 1966). A further striking problem are the more frequent operations, especially in the second twin. All those factors represent an increased risk for the fetuses. This is why the authors have already long ago decided that an intensive prenatal care should decrease the rate of premature deliveries, reduce the incidence of severe late toxemias, and increase the number of spontaneous deliveries. This should be achieved by (1) early diagnostics of twins (X rays, ECG, ultrasound); (2) preventive hospitalization of women with twin pregnancies; (3) an intensive therapy of imminent premature labor. After delivery this treatment is completed by modern methods of intensive pediatric care. We would like to demonstrate the results of the Institute for the Care of Mother and Child in Prague as correlated with the development of the specialized preventive care in women with twin pregnancy. In the course of the last 12 years (1961-1972) 114 twin pregnancies,

Table. *Preventive Care in Multiple Pregnancy*

| Group | Years | No. of pregnancies (N = 114) | Week of diagnosis ^a | | Gestosis ^b | | Perinatal mortality | | |
|-------|---------|---------------------------------|--------------------------------|--------|-----------------------|------|---------------------|------|---------------------|
| | | | \bar{X} | SE | N | % | Twins N | % | All deliveries % |
| A | 1961-65 | 45 | 34.9 | ± 0.58 | 31 | 68.9 | 13 | 14.4 | 2.9 |
| B | 1966-70 | 49 | 35.2 | ± 0.61 | 26 | 53.0 | 8 | 8.2 | 2.5 |
| C | 1971-72 | 20 | 29.8 | ± 1.07 | 7 | 35.0 | 2 | 5.0 | 1.8 |

| Group | Bed rest % | No. of pregnancies | Duration of pregnancy (weeks) ^c | |
|-------|------------|--------------------|--|--------|
| | | | \bar{X} | SE |
| A | 42 | 50 | 38.5 | ± 0.25 |
| B | 49 | | | |
| C | 50 | 64 | 36.0 | ± 0.49 |
| Total | 44 | | | |

^a $t(AC) = 4.44, P < 0.01$; $t(BC) = 4.72, P < 0.01$

^b $\chi^2(AC) = 6.55, P < 0.05$

^c $t = 4.21, P < 0.01$

out of the total number of 12,700 deliveries, were followed. According to the time of occurrence they are divided into three groups. The five-year spells A and B differ only in the intensity of research and clinical approach to perinatal medicine. The incomplete two-year spell C, ending by the first of October, differs moreover by a more effective care for high-risk pregnancies, ultrasound diagnostics of twin pregnancy in the main, by more frequent controls in the prenatal clinic, and by longer preventive hospitalization. It is to be stressed, however, that the cases treated in our Institute do not represent a population sample, but a concentration of pregnancy pathologies and high-risk pregnancies (diabetes, late toxemias, infertility cases) according to the aims of the research groups of the Institute. This, no doubt, is reflected in the numbers of perinatal mortality and does not allow a comparison with the results of other Institutes.

In the first and second period the diagnosis of twins was assessed in the 35th week on the average. In the third period, due to a systematic use of A and B ultrasound scanner, the diagnosis has shifted to the 30th week on the average. The differences are statistically significant. In this way it was possible to disclose substantially more cases suitable for intensive care and for early preventive hospitalization than beforehand. In his paper Dr. Kittrich (p. 52) has dealt with this question in detail.

The percentage of premature deliveries in our twin pregnancies is relatively high and fluctuates in all three periods between 40 and 50%. In the intensive-care group C a decrease of the premature-delivery rate apparently does not take place. This can be explained, however, by the fact that the contemporary concentration of cases of infertility, whose treatment causes a shift of abortions into the premature-delivery group, increases the rate of premature deliveries. This is manifested also in the numbers summarizing the results of the treatment of other premature deliveries.

In the last two years the treatment of all imminent premature deliveries, twins included, is accomplished by means of early hospitalization and of therapy by beta-mimetics of the Alupent and Vasodilan type. Beside therapeutic hospitalization of women with twin pregnancy also preventive hospitalization is performed. In individual groups the number of hospitalized cases successively rises from 42 to 50%. The preventive hospitalization is not new. It was introduced by Bender (1952) as early as twenty years ago. Majority of papers have proven its effectiveness and introduced it from the 30th to the 36th week of pregnancy (Anderson 1956, Folsome et al. 1956, Tow 1959, Brown and Dixon 1963, Robertson 1964, Barter et al. 1965, Friedman et al. 1970). There were, however, also papers doubting of the effect or proving ineffectiveness of the bed rest (Guttmacher and Kohl 1958, Dunn 1961). We are able to demonstrate that the hospitalization of twin pregnancies prolonged the duration of gestation by two-and-half weeks, from 36 to 38.5 weeks. The difference is statistically significant. We included in this series hospitalizations from the 30th week of pregnancy upwards, lasting at least one week and being usually finished at the moment of delivery. We so far did not perform the bed rest routinely, as some authors do, but electively; this, however, for a longer time. This therapy is evidently successful.

Late toxemia occurred in our groups in a high percentage. This is due to the fact that also mild cases were included. Together with advancement of perinatal care, however, the percentage gradually decreased. There is a significant difference between the periods A and C. In the literature we do not find a uniform view concerning the share of late toxemia upon the perinatal mortality in twin pregnancies. As for the course of toxemia, on the other hand, the authors agree that it is more benign than in pregnancies with one fetus (Anderson 1956, Danielson 1960, Hendricks 1966). In our series, out of 64 cases of toxemia perinatal death occurred only in 5 cases having signs of mild toxemia. There was definitely no correlation with the gravity of toxemia.

The perinatal mortality in our series corresponds in groups A and B to the values quoted in the literature for this period of time (14.4% and 8.2%). In group C it is only 5%, i.e., below the values quoted lately. Accordingly, it dropped in the course of years to one third of the original percentage. This decrease is not only due to a generally improving prenatal care, but shows also the good results of a specialized preventive care in women with twin pregnancy. This can be seen when comparing the results with total perinatal mortality from all deliveries that has decreased in the course of the same time by less than 50%.