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## Is Routine Hospitalization in Twin Pregnancy Necessary?

### A Follow-up Study

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**Abstract.** During the years 1979-1980, a prospective study was carried out to evaluate the value and efficacy of routine hospital bed rest in the prevention of premature birth and pregnancy complications in twin gestation. This was done by comparing hospital bed rest to special antenatal care at outpatient clinic. Since the results did not support the idea of using routine hospital bed rest, this was abandoned. Because the material was rather small, the results of the changed policy of management were controlled in the present follow-up study. The material consists of 102 twin pregnancies diagnosed during the years 1982-1983. The number of deliveries before the 34th gestational week and of < 1500 g weighing infants were still decreasing (9.0% and 3.0%). Perinatal mortality after the 24th gestational week was 2.0%. The follow-up study confirmed the inefficacy of routine hospital bed rest. Early diagnosis is the basis of the management of twin pregnancy. This allows counselling of the pregnant women, regular examinations to detect pregnancy complications, and also planning of the delivery.

**Key words:** Twin pregnancy, Antenatal care, Bed rest, Ultrasound examination, Symphyseal-fundal measurement, Prematurity

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## INTRODUCTION

Twin pregnancy carries a 2-4 times higher risk of perinatal mortality (PNM) than single pregnancy. The main problems are prematurity and intrauterine growth retardation. In the literature, several treatment policies to prevent these complications have been proposed. However, their results have been rather inconsistent, and, in controlled trials, many of them, including routine hospital bed rest, have been proved to be questionable [2, 4, 5, 6, 9].

In Oulu University Central Hospital, the change of parameters of management of twin pregnancies and their effect on the prognosis have been followed since 1975. In an

earlier study, a significant decrease of PNM between the years 1975-1976 and 1977-1978 was found; the figures were 11.0% and 3.6%, respectively [3]. In that study it was shown that the decrease of PNM was very clearly associated with early diagnosis of twin pregnancy; whereas the effect of other parameters, eg, routine hospitalization, remained more obscure. Since routine hospitalization is expensive, occupies hospital beds and is inconvenient for the woman, its value was decided to be investigated in a prospective trial. This study was conducted during the years 1979-1980 [4]. Based on the results of that study, our policy was changed and, instead of routine hospital, bed rest special outpatient care has been employed.

Because the material of the study remained rather small, the effects of the new management policy were assessed in a new follow-up study during the years 1982-1983.

## MATERIAL AND METHODS

The material of the study comprised 102 consecutive twin pregnancies at our hospital during the years 1982-1983. In the area served by our outpatient clinic, routine ultrasound examination is not feasible; mostly, the patients were referred because of a high symphyseal-fundal measurement.

It was planned that the same obstetrician should take care of the entire pregnancy at the outpatient clinic. During the second trimester the control visits took place every four weeks up to the 24th gestational week, and thereafter every second week; from the 28th gestational week onwards, the women were seen weekly. After the 37th gestational week the women were admitted to the hospital because of the planning of the delivery.

Depending on their occupation, all women were prescribed a sick leave from the 26th-28th gestational week onwards. This was done also for housewives to obtain them the opportunity to get domestic helpers. The women were advised to reduce their physical activities and to stay mainly in bed during the 30th-34th gestational weeks. During the visits at the outpatient clinic, the examination comprised measurement of the symphyseal-fundal height and palpation of the cervix. Foetal heart sounds were registered from the 30th gestational week onwards by means of cardiotocography. During the third trimester, ultrasound examination were performed every second week, involving measurements of the biparietal diameter and transverse diameter of the body to monitor intrauterine growth. Assessment of serum estriol and HPL also belonged to the follow-up.

Hospitalization was indicated, for example, in cases of opening of the internal os 1 cm or more before the 34th gestational week, intrauterine growth retardation or increasing difference in the size of the two fetuses.

## RESULTS

Two of the 102 pregnancies resulted in abortions before the 24th gestational week. One was due to acute polyhydramnios and the other was complicated by maternal diabetes and possible cervical incompetence.

The mean gestational week at which the diagnosis of twin pregnancy was confirmed by ultrasound was 24.7 (SD 7.4). The diagnosis was made at delivery in six cases; of these five should have been diagnosed earlier because of clearly high symphyseal-fundal measurement. In seven cases, the diagnosis was missed in ultrasound examination. Six of them were referred to another examination because of high symphyseal-fundal measurement before the 24th gestational week, and one at the 31st week.

Of these women, 33% needed no hospital observation during pregnancy; 6% were given beta-mimetic infusions and 7% got prophylactic corticosteroid treatment.

The clinical data of the pregnancies are shown in Table 1 and those of the newborns in Table 2.

Table 1 - Clinical Data on Twin Deliveries (N = 100)

Gestational week at delivery	37.4 (SD 2.2)
Deliveries $\leq$ the 34th gestational week	9.0%
Delivery inductions	40.0 %
Cesarean sections	29.0%

Table 2 - Neonatal Findings on Twins (N = 200)

Birthweight A-twins 2670 g (SD 505) B- twins 2567 g (SD 542)	
Birthweight < 1500 g	3.0%
Apgar score < 7 at 1 min	8.5%
at 5 min	2.0%
IRDS	3.0%
PNM (all)	2.0%
PNM (when lethal anomalies excluded)	1.5%

In one case, the causes of perinatal deaths were severe prematurity and lethal anomaly of the B-twins. The delivery begun by rupture of the membranes of the B-twin at the 26th gestational week. Two B-twins were lost because of umbilical cord complication. One of them died in utero due to velamentous insertion of the umbilical cord at the 31st gestational week. The delivery took place at the 37th gestational week, the A-twin being normal. The mother was on the hospital ward before the death of the B-twin because of noted intrauterine growth retardation of this twin. The other umbilical cord complication occurred at delivery at the 38th gestational week. The twins were mono-amniotic and the umbilical cords were wound ten times around each other. After delivery of the A-twin, the B-twin died because of cord strangulation.

## DISCUSSION

This follow-up study confirmed the results of the prospective study from years 1979-1980 [4], which indicated the inefficacy of routine hospital bed rest in twin pregnancy. The results agree with previous studies [6, 7, 8, 9]. Interestingly, also the use of medication, ie, beta-mimetics and prophylactic corticosteroids, has diminished significantly compared to our material from the years 1977-1978 when also hospital bed rest was routine [3]. During those years, 22.9% of the women received beta-mimetic infusions and 21.8% prophylactic corticosteroids; the corresponding figures being in the present study 6.0% and 7.0%. Despite these changes, the number of infants weighing less than 1500 g and born before the end of the 34th gestational week is now lower (8.2% vs 3.0% and 18.2% vs 9.0%). The frequency of IRDS has fallen from 9.1% to 3.0% and PNM from 3.6% to 2.0%. The average weight of the newborns has not significantly increased. The amount of cesarean sections has grown from 8.2% to 29.0%.

The diagnosis of twin pregnancy was made about four weeks earlier in the present study years than during the years 1977-1978. Although routine ultrasound examination is not yet possible, the accurate measurement of the fundal height seems to be a very good indicator to detect twin pregnancy [1, 10]. The diagnosis of twins pregnancy using this method occurs, on the average, at the 24th gestational week, and this is mostly early enough in clinical practice. In my opinion, this is important for the obstetrical personnel working in areas with no feasibility of routine ultrasound examination.

Early diagnosis is the basis of the management of twin pregnancy. It allows counseling of the pregnant woman, regular examinations to detect pregnancy complications, and also planning of the delivery.

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