

# Grand multiparity: a study of 168 cases

M. Tessarolo, M. Brizzolara, S. Arduino, L. Leo, G. Febo, T. Wierdis, A. Lanza

*Department B of Gynecology and Obstetrics Institute, University of Torino (Italy)*

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## Summary

The aim of this retrospective study was to consider the problem of grand multiparity in our female population to evaluate if grand multiparity represents a real risk factor for pregnancy, delivery and fetal well-being. From 1981 to 1989 the Gynaecology and Obstetrics Institute of Turin University together with St. Anna Hospital of Turin carried out a retrospective study on pregnancy course, delivery and fetal status in 168 women who had had four or more pregnancies and in 5320 multiparous women who had parity <4.

We analyzed the parity distribution in the different ages with the aid of the registry office and by consulting patient's obstetric clinical history. We evaluated the incidence of gestational complications in the multiparous group. Finally we studied the delivery modality and perinatal mortality in 72,907 births from 1981 to 1989.

**Key words:** Parity; Multiparity; Pregnancy complications; Risk factors.

## Introduction

Since Betle Solomon's article, "The dangerous multipara" grand multiparity has been viewed with great caution; some authors have reported an increased amount of fetal malpresentation, preterm delivery uterine rupture, or post-partum bleeding, while others have observed an increased incidence of cardiac disease, diabetes mellitus or gestational hypertension in grand multiparous women [1, 2, 3, 4, 5].

During the first International Meeting on practical obstetrics (1993), organized by FIGO, the term "Grand multipara" has been applied to women having four or more viable babies.

Some authors, in the past, applied this term to women who had delivered five or more babies, and others to women who had delivered eight babies or more [2, 5]. In the present work we adopted the FIGO recommendation to utilize the term "Grand multipara" to women with four or more babies.

The aim of this retrospective study was to consider the problem of grand multiparity in our female population to evaluate whether grand multiparity represents a real risk factor for pregnancy, delivery and fetal well-being.

## Materials and Methods

Between 1981 and 1989 the Gynaecology and Obstetrics Institute of Turin University together with St. Anna Hospital of Turin carried out a retrospective study on pregnancy course, delivery and fetal status in 168 women who had had four or more pregnancies, and in 5,320 multiparous women who had parity < 4.

We analyzed the parity distribution in the different ages with the aid of the registry office and by consulting patient's obstetric clinical history. We evaluated the incidence of gestational hypertension, internal abortion, cervical cerclage, weight gain (< 14 Kg), anomalies of the situation and of presentation, preterm membrane ruptures, pre-post term delivery and the

meconium-stained amniotic fluid in the multiparous group. We also studied the delivery modality and perinatal mortality in 72,907 births from 1981 to 1989.

## Results

Among the 168 grand multiparous women 140 (83%) had a parity between four and six only 18 women had more than 8 pregnancies regularly brought to term.

Table 1 shows the multiparity distribution according to age, 117 women (69.6%) were in the 30-39 year range and 65 of these were in the 35-39 year range. Noteworthy is the fact that 25% of the grand multiparous women were over 40 and that 68% of multipara were under 30.

Therefore, based on this information, the grand multipara patient is, on average, ten years older than the multipara.

From a socio-economic analysis we observed that most of the grand multiparous (58%) were housewives, lived in towns (88%) and were married (97%). Obstetric history of the grand multiparous women is characterized by a percentage of 16% of previous spontaneous abortions and a low-rate of voluntary pregnancy interruption (4-7%).

In the multipara population spontaneous abortions were 10% and voluntary 7-8%. Analyzing the most frequent complications of the pregnancy and delivery course we observed in the multiparous women a high percentage of internal abortions (15%), cases of meconium-stained amniotic fluid (15%), preterm deliveries (7.7%), a noticeable percentage of situation anomalies (2-9% transverse situation) and presentation (1-8% of breech presentation). There was no increase in gestational hypertension, cervical cerclage, weight increase > 14 Kg and post-term deliveries in the grand multiparous group compared to the multiparous group (Table 2).

Our study showed that 87% of multiparous women had a short labour of no more than six hours (Table 3), 80%

Table 1. — *Multiparity distribution according to age*

Years	Grand Multiparous		Parity < 4	
	cases	%	cases	%
< 25	1	0.6	1714	32.2
25-39	8	4.8	1922	36.1
30-34	52	30.9	1219	22.9
35-39	65	38.7	452	8.5
40-44	29	17.3	11	0.2
> 45	13	7.7	2	0.1
Total	168	100	5320	100

Table 2. — *Pregnancy complications*

	Grand Multiparous		Parity < 4	
	cases	%	cases	%
Internal abortion	26	15.4	289	5.4
Gestational hypertension	14	8.3	266	5
Cervical cerclage	3	1.8	246	4.6
Weight gain > 14 Kg	10/14	7.1	372	6.9
Breech presentation	3	1.8	21	0.4
Trasverse presentation	5	2.9	41	0.9
Delivery < 37 weeks	13	7.7	218	4.1
Delivery > 42 weeks	5	2.9	79	1.5

Table 3. — *Delivery complications*

	Grand Multiparous		Parity < 4	
	cases	%	cases	%
Premature rupture of membranes	30	17.8	691	12.9
Meconium stained amniotic fluid	25	14.8	372	6.9
Duration labour < 6 ore	146	86.9	4522	85
Duration labour 6-12 ore	13	7.7	638	11.9
Duration labour > 13 ore	9	5.3	160	3

Table 4. — *Indications for cesarean section*

Indications for cesarean section	Grand Multiparous	
	cases	%
For prolonged labour and fetal distress	5	20
For fetal malposition	6	24
For cephalopelvic disproportion	4	16
For placenta previa	8	32
For multiple delivery	2	8
For previous cesarean section	0	0
Total	25	100

of the grand multiparous women had spontaneous births, only 5% needed the use of forceps and 15% had cesarean section delivery. The most frequent indications of cesarean section delivery were placenta previa (32%), position anomalies of the presented part (24%) and fetal suffering due to prolonged labour (table 4). On studying fetal well-being we observed that 92% of the children weighed > 2500 gr. There was only one still born foetus and only one death in the first week.

## Discussion

Our study shows that the grand multipara is a woman between 35 and 39 years, in a quarter of the cases she is more than 40 years old, has had at the most six pregnan-

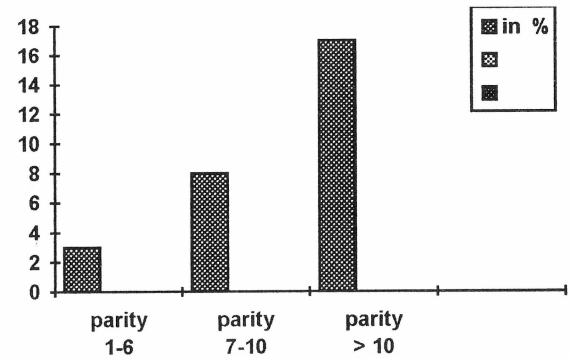


Figure 1. — Pregnant hypertension for different classes of parity.

cies, is a housewife and is married. Since 1934 grand multipara has been considered an important risk factor both for pregnancy course and for delivery. The literature reports a high incidence of diseases in pregnancy such as gestational hypertension, gestational diabetes and cardiac diseases. In 1962 Ziel published a graph (number 1) showing the different incidences of pregnant hypertension for different classes of parity [5]. In reality, the woman's age during conception, seems to play a primary role in all the most frequent pregnancy complications. An interesting study by Fayed showed in two homogeneous populations with age > 35 years, one with parity > 9 and the other with a parity > 2 and < 5 a superposable incidence (11.5% vs 3.2%) in the extreme grand multiparous women [6].

Kjer, too, who in his study considered as grand multiparous the woman with more than seven pregnancies, reported a superposable incidence of gestational hypertension in grand multiparous women and in the multiparous (4% vs. 3.2%) [7].

Toohy applied the term multipara to women with five or more pregnancies. His most recent study on grand multiparous women showed no statistically important differences of gestational diabetes, gestational hypertension, or iron deficiency anemia in multiparous women and grand multiparous women [8]. In our study the incidence of gestational hypertension in women with parity > 4 was 8.3% comparable to 5% of the women with lower parity.

The grand multiparous women's obstetric history in our population has been characterized by a significantly higher incidence of spontaneous abortions, compared to the multiparous. The explanations could be numerous, many and varied: uterus structural modifications, genetic causes connected to the grand multiparous advanced years, impossibility to respect the necessity of rest in case of threatened abortion and lastly, poor social and health conditions. Moreover, there may be a static bias connected to the lower use of contraception by the grand multiparous, a higher number of pregnancies and thus a higher possibility of spontaneous abortion compared to the multiparous.

In our population high multiparity was not connected to a higher incidence of cervical cerclage, to excessive weight increase (> 14 Kg), to post-term pregnancy, to

premature breaking of the membrane or anomalies in the length of labour. This agrees with the more recent studies on grand multiparity. Seidman, in 1988, concluded that "in general, fetal and neonatal well-being are unaffected by grand multiparity" and that "our results suggest that most of the advised influences on mothers and babies found linked to multiparity in certain populations may be attributed to socio-economic factors rather than to the large number of deliveries" [9]. Kjer, too in 1989, maintained that grand multipara risks were higher than any other pregnancy and Toohey, in 1995, did not observe any increase in obstetric complications in the grand multiparous [7, 8]. We observed a small increase of presentation anomalies, of situation of preterm deliveries, and of cases of meconium-stained amniotic fluid.

These pathologies were underlined by Fuchs, *et al.*, who also observed an increase in post-partum pathologies, uterus ruptures and cesarean section deliveries [10]. Our study showed the incidence of preterm deliveries was of 7.7% vs 4.1% in the multiparous. Toohey observed a similar percentage of 7.3% preterm deliveries [8]. However, our study showed no significant differences in the control population.

Toohey observed a 25% incidence of the meconium-stained amniotic fluid in the grand multiparous and 24% in the multiparous: our study pointed out a statistically significant difference although the percentage in the control population was only of 6.9% and 14.3% in the multiparous [8]. It is obviously difficult to express a definitive opinion on the increasing incidence of some pathologies. Even if it is interesting to note that placenta previa is the main indication for cesarean section delivery in the grand multiparous.

In our population 1/3 of the indications for cesarean section delivery was placenta previa, in 25% it was foetus malposition and in 20% fetal distress for prolonged labour.

On the contrary, in the multipara the incidence of cesarean section delivery due to previa placenta only represented 3%. According to some authors placenta previa is a frequent adnexal pathology in the grand multipara, although others have not revealed any increase in incidence. In our series of cases cesarean section delivery for placenta previa represented about 4.7% of the grand multiparous population [2, 11, 12, 13].

In the more recent series of cases and in ours, low neonatal mortality was observed, comparable to the control population: in our population perinatal mortality was of 1%. In the past, perinatal mortality was considered one of the most serious complications concerning multiparity: low risk is the result of improved socio-economic conditions in developed countries, and it increases the need for pregnancy monitoring with the same intensity in both multiparous and in grand multiparous women.

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Address reprint requests to:

A. LANZA

Istituto Ginecologia e Ostetricia

Via Ventimiglia, 3

10100 Torino (Italy)