

A study of the obstetric performance of the high-risk pregnancy

by

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Many studies have been carried out also in Italy in recent years (^{1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13}) to establish the incidence of « high-risk pregnancy », particularly among hospital cases. The results obtained by foreign investigators are not at all comparable because of the differences in environmental, socio-economic and public welfare conditions. A high incidence of obstetric pathology was found in the high-risk patients, but an accurate statistical study of this finding was not always undertaken. We therefore decided to compare the reproductive performance of a sample group of patients divided according to risk.

MATERIALS AND METHODS

The obstetric risk in a sample of 1000 patients from the catchment area of the Second Obstetric and Gynecological Clinic of the University of Padua was determined on the basis of a detailed list of factors relating to the history and clinical condition (³).

The group consisted partly of patients who had been carefully observed throughout their pregnancy and partly of patients who came from neighbouring hospitals for pathological conditions.

RESULTS

Distribution of the obstetric risk. The patients were divided into groups graded according to 20 points of risk. Table I indicates the number of patients in each group; we see that the percentage of high-risk cases is fairly similar to that of studies carried out under analogous conditions (^{1, 2, 3, 5, 11, 12}). For the statistical study we combined the groups with more than 40 points of risk because of the small numbers of cases in each.

Table 1. *Distribution of Obstetric Risk in 1000 Cases.*

Points of risk	%
0-20	57.9
21-40	25.9
41-60	11.7
61-80	3.3
81-100	0.8
100-120	0.2

Situation, presentation and position of the foetus

The foetus was in longitudinal position in 99% of all cases; above 40 points there is a statistically significant increase in the transverse position ($\chi^2 = 7.71$; $p < 1\%$). (Table 2).

Table 2. *Lie, presentation and position of the fetus.*

		Points		
		0-20	21-40	More than 40
LIE	Longitudinal	99,65%	99,20%	96,70%
	Oblique	0,00%	0,00%	0,60%
	Transverse	0,35%	0,80%	2,70%
PRESENTATION	Vertex	97,40%	96,40%	92,70%
	Median Vertex	0,00%	0,00%	0,60%
	Brow	0,40%	0,40%	0,00%
	Face	0,00%	0,00%	0,60%
	Breech	2,20%	3,20%	6,10%
POSITION	Anterior	96,20%	96,80%	94,00%
	Posterior	3,80%	3,20%	6,00%

Complications of labour

Labour began spontaneously in 82.26% of all cases; 11.87% had stimulated labour, and labour was induced in 5.87%.

The percentage of stimulated labour does not vary in relation to the risk which, above 40 points, determined a significant increase in the occurrence of induced labour ($\chi^2 = 11.56$; $p < 1\%$). Consequently, the presence of a potential or actual danger (risk) frequently suggested termination of the pregnancy.

The pathology of the uterine contractions was no longer frequent in high-risk pregnancies ($\chi^2 = 1.86$; $p > 5\%$); however, the duration of labour was longer in these cases ($\chi^2 = 18.51$; $p < 1\%$), and there was also a greater incidence of abnormal presentation, as already mentioned (Table 2).

Table 3. *Complications of labour.*

		Points		
		0-20	21-40	More than 40
Spontaneous occurrence		83.0%	84.8%	74.2%
Induced occurrence		5.0%	4.0%	13.2%
Stimulated labour		12.0%	11.2%	12.6%
Normal duration of labour		93.1%	90.8%	80.1%
Prolonged prodromal stage		1.6%	1.8%	7.3%
Prolonged dilating stage		2.0%	4.4%	7.3%
Prolonged expulsive stage		2.8%	3.0%	5.3%
Normal contractility		91.2%	89.6%	85.7%
Primary inertia		2.0%	3.6%	2.4%
Secondary inertia		6.1%	5.6%	11.9%
Hypertonia		0.7%	2.2%	0.0%

Incidence of operative delivery

The obstetric risk clearly reduces the percentage of spontaneous births; in the second risk group (21-40 points) there was a significant increase in operative delivery in comparison with the first (0-20 points) ($\chi^2 = 23.46$; $p < 1\%$). The same was true for the third group (more than 40 points) in comparison with the second group ($\chi^2 = 12.80$; $p < 1\%$).

A vacuum extractor was used in a significantly greater percentage of cases above 20 points of risk ($\chi^2 = 5.92$; $p = 1\% - 2.5\%$).

Forceps were more frequently used in cases of more than 40 points of risk ($\chi^2 = 13.13$; $p < 1\%$).

The incidence of cesarean section was greater in cases with more than 20 points of risk ($\chi^2 = 30.5$; $p < 0.5\%$).

Table 4. *Incidence of Operative Delivery.*

Type of delivery	Points		
	0-20	21-40	More than 40
Spontaneous	90.1%	80.0%	61.0%
Vacuum extractor	3.4%	4.0%	7.0%
Forceps	2.2%	0.7%	6.9%
Cesarean section	4.3%	15.3%	25.1%

Complications of delivery

Acute or chronic foetal distress was found in 7.9% of cases, and occurred significantly more often in cases with more than 40 points of risk ($\chi^2 = 13.60$; $p < 1\%$).

Placental pathology did not show any significant variation in relation to the obstetric risk.

Table 5. *Complications of delivery.*

	Points		
	0-20	21-40	More than 40
Fetal distress	4.57%	8.47%	26.19%
Placental pathology	2.24%	3.98%	5.30%

Prematurity

The incidence of babies weighing less than 2.0 Kg and less than 2.5 Kg is shown in Table 6.

In the entire patient group we found 1.92% of infants weighing less than 2 Kg, and 3.34% weighing between 2 and 2.5 Kg.

Among the cases with more than 20 points there was a significant increase of newborn weighing less than 2 Kg ($\chi^2 = 4.14$; $p < 1\% - 5\%$).

The number of newborns weighing 2-2.5 Kg rose among the cases with more than 40 points ($\chi^2 = 9.86$; $p < 1\%$).

There was thus a very definite correlation between risk and prematurity.

Table 6. *Incidence of premature infants.*

	Points		
	0-20	21-40	More than 40
Less than 2 Kg	0.69%	2.78%	4.63%
2-2.5 Kg	1.20%	3.18%	11.92%

Foetal outcome

This is shown in detail in Table 7. In the group as a whole, Apgar scores (at 1 minute) of 7 to 4 were obtained in 4.35%, and of 4 in 2.12%.

At more than 40 points of risk there was an increase in the incidence of the 1-minute Apgar score of less than 7 or 4 ($\chi^2 = 8.57$; $p < 1\%$) ($\chi^2 = 9.30$; $p < 1\%$). This confirms the previously mentioned finding relating to a significant increase in foetal distress at more than 40 points (Table 5).

Table 7. *Foetal outcome.*

Apgar Score at 1 minute	Points		
	0-20	21-40	More than 40
7-4	2.07%	4.38%	13.24%
Less than 4	0.69%	1.56%	8.60%

COMMENTS

The poorer obstetric performance of women with high risk pregnancy is unanimously agreed on. In this study we compared the outcome of these pregnancies with the remaining hospital deliveries to give a statistical demonstration of the importance of early identification of obstetric risk. We used the case material from a University Clinic where there are many high risk cases because of its catchment area from less well-endowed hospitals, and which also has the best obstetric facilities. The danger of high-risk conditions was thus emphasized, since they were presumably free of mistakes in management.

Labour and birth in high-risk cases are more difficult not only for the foetus, but also for the mother. In regard to more frequent foetal and neonatal distress and prematurity, we find an increase in foetal dystocia (abnormal position and presentation), in length of labour and in the operative delivery rate.

A statistical study shows that, on the basis of our table, the probability of these pathological findings only increases significantly above 40 points or risk.

Since the improvement in obstetric help during labour and delivery is limited, early identification of obstetrics risk is of fundamental importance in order to put into effect all possible diagnostic and therapeutic measures *before the birth*. Improved obstetric performance is related to better ante-natal care.

SUMMARY

The obstetric performance of 1000 patients at the Second Obstetric and Gynecological Clinic of the University of Padua was studied in relation to obstetric risk. Foetal distress, prematurity, complications of labour and delivery and

operative deliveries were found more frequently in the high-risk cases. A better obstetric performance will only be achieved by better ante-natal care.

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The outcome of operative delivery

by

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It has been shown that the incidence and type of operative delivery is directly related to the risk of the pregnancy (¹).

The improvement in medical care and socio-economic conditions, the extension of social welfare measures have reduced the incidence of particularly high-risk pregnancies and thus of major obstetric procedures.

On the other hand, the present safety of cesarean section, with a very favourable maternal and foetal outcome (²), leads us to re-examine the importance of traditional intervention by the vaginal route; indeed, we may even question whether it is really in the interest of the foetus. However, this « decadence » of classical operative obstetrics may lead to an unjustified abuse of cesarean section, which would thus become the convenient and easy solution of the obstetrician with little training.

To resolve this problem we must consider that obstetric care aims not only at delivering a live newborn, but also one free of neurological and physical damage. Since the maternal outcome is generally favourable, the value of the obstetric procedure selected should be assessed on the basis of the foetal outcome.

MATERIALS AND METHODS

To study the validity of an obstetric approach we carried out a retrospective analysis of 2277 cases of labour at the Second University Clinic in Verona from

From the 2nd Obstetric and Gynecological Clinic of the University of Padua.