

# Labour management

## *Our experience*

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*Summary:* We report a retrospective analysis of 1202 deliveries assisted by the same medical team, evaluating the clinical management of labour and the resulting type of delivery.

Examination of the data revealed a gradual reduction in the number of deliveries treated pharmacologically accompanied by a reduction in the incidence of operative deliveries from 16% to 6%.

Statistical analysis of the data using  $X^2$  test demonstrated a clear correlation between the administration of oxytocin and the incidence of operative deliveries ( $p \leq 0.001$ ).

We believe that the indiscriminate use of oxytocin in labour should be avoided and that the pharmacological and operative management of labour requires precise clinical indications.

*Key words:* Labour; Delivery.

## INTRODUCTION

In recent years, the rates of perinatal mortality and morbidity have steadily decreased due to a greater understanding of the physiology of labour and to the current methods used in the prevention of hypoxia in pregnancy and labour.

Labour may be divided into the latent phase, during which the cervix thickens, the active phase with dilatation of the cervix and an expulsive phase (<sup>1, 2</sup>).

In these phases, the most frequent anomalies found are those of a prolonged latent phase and arrest of cervical dilatation; the former with an incidence of 26%

in primiparae and 8% in multiparae, while the latter is less frequent (<sup>3, 4</sup>).

Since 1971, when Friedman demonstrated that labour progresses more satisfactorily when cervical dilatation is accompanied by the descent of the head of the fetus, it has been possible to define the chronology of the latent and active phases. From this time the duration of labour began to be considered in relation to the descent of the fetus.

Friedman's cervicometric curve became the basis for a better understanding of labour patho-physiology (<sup>5, 6</sup>).

The partogram which was developed from these preliminary studies (<sup>6</sup>), has subsequently been adapted to meet the needs of various schools; the scheme developed by the Catania school is much followed in Italy (<sup>7</sup>).

The partogram has become an indispensable instrument in teaching, in that it trains the physician to follow and record graphically the progress of the various

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phases of labour, and in clinical practice where the recording provides clear evidence at the onset of the any anomalous progress, thus allowing prompt corrective intervention (<sup>2, 5, 7, 8</sup>).

Today, synthetic oxytocin is widely used to stimulate and accelerate labour (<sup>9</sup>), and several Authors have studied its action and the effect at differing dosages (<sup>10</sup>).

In another study, using high oxytocin dosages, the same Authors reduced the percentage of cesarean sections performed for arrested cervical dilatation from 25% to 20%.

The work of Friedman has led to the development of a less instrumental and more pharmacological management of labour; oxytocin is now used not only in the therapy of dystocia but also in the induction of labour when the Bishop score is favorable.

## MATERIALS AND METHODS

The patients in this study were selected from a homogeneous socio-economic group (middle-high) and were chosen for the fact that they were followed by the same physicians during pregnancy and delivery.

The protocol employed provides for weekly monitoring of the fetal heartbeat from the 36th to the 40th week and twice-weekly monitoring from the 40th to the 42nd week.

If the fetal heartbeat was normal during this period, the procedure was to await the 42nd week, induce labour with oxytocin (usually accompanied by amniorrhexis), or to perform a cesarean section in those cases with a low Bishop score.

If monitoring revealed signs of hypoxia, however, the pregnancy was interrupted by cesarean section. Clearly, the fetal heartbeat was also monitored during delivery.

Treatment with oxytocin was also used to correct the anomalies in the duration of the cervical phase.

As shown in Table 1, the partogram used defines the phases of labour according to Friedman: the cervical phase (latent phase), corporal phase (active phase) (<sup>7</sup>).

The method used in this retrospective study was to evaluate the clinical understanding of labour, as evidenced by the clinical records, and how this evolved in time.

Table 1.

Panella 1989	Friedman 1978
- Cervical phase	- Latent phase
- Corporal phase	- Active phase
- Pelvic phase	- Expulsive phase

Table 2.

	No. Patients	% Patients
Spontaneous delivery	767	63.8
Operative vaginal	148	12.4
Cesarean section	287	23.8
Perinatal mortality		0,06
No. total delivery	1202	

Table 3.

	No. Patients	%Patients
No. total deliveries	1202	
No. total inductions	196	16.3%

The X2 test was used to determine the statistical significance of the distribution of the cases in relation to the type of labour and mode of delivery. The study was performed on 1202 patients admitted to our Institute during the period 1980-88, with a mean age of 29 years.

These patients represent a selected group in that, being assisted by the same team, they were subjected to an identical clinical protocol.

As reported in Table 2, there were 767 (63.8%) spontaneous deliveries, 148 (12.4%) operative vaginal deliveries (vacuum extractor) and 287 (23.8%) cesarean section. Perinatal mortality was 0.6 per thousand.

Oxytocin was administered in 296 cases (16.3%), Table 3.

## RESULTS

The obstetrical outcome, i.e. the type of delivery: spontaneous, operative vaginal or cesarean section) is shown in Table 4. The percentage of spontaneous deliveries in the group treated with oxytocin (60%) is practically identical to that in the untreated group (64%) while the

Table 4.

	Oxytocin administration	Non oxytocin administration
Spontaneous delivery	648 (64%)	119 (60%)
Operative delivery	106 (11%)	42 (21%)
Cesarean section	252 (25%)	35 (19%)

percentage of cesarean section is higher among the untreated patients (25%) than in the group treated with oxytocin (19%). It should probably be said that the trend in the incidence of cesarean section is related to world-wide changes in the indications for this procedure, and not the result of a drastic reduction brought about by treatment with oxytocin.

It is to be noted that of a total of 287 cesarean sections, 94 were programmed as a result of previous cesarean deliveries or anomalous fetal presentation.

However, the data regarding operative vaginal deliveries are extremely significant, with a percentage in treated groups (21%) almost double than that of the control group (11%). This observation would seem to indicate a higher risk of uterine hypokinesia in the expulsive phase after treatment with oxytocin. The annual di-

tribution of oxytocin treatment, cesarean section and operative vaginal deliveries is shown in Table 5.

It can be seen that for 1980 there is a high percentage of oxytocin administration (38.6%) accompanied by high frequency of cesarean sections (19.4%) and operative deliveries (14.6%).

Subsequently, the frequency of oxytocin administration decreases drastically to a value of 2.19% for 1988.

Significantly, this reduction is accompanied by a decrease in the number of operative vaginal deliveries (6.1%), while the number of cesarean sections increases (26.6%).

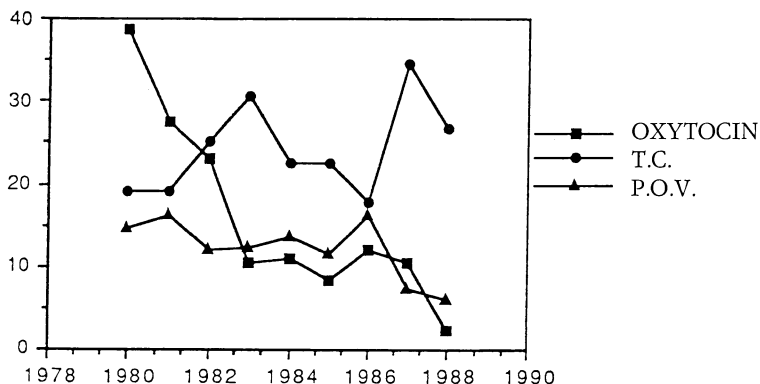
Statistical evaluation of the correlation between induction with oxytocin and the number of operative deliveries, was performed using the  $X^2$  test.

A statistically significant difference ( $p \leq 0.001$ ) was found in the obstetric outcome, spontaneous or operative delivery, between the two groups.

## DISCUSSION

Analysing the data year by year, it is seen that while the incidence of cesarean section and perinatal mortality remain substantially unchanged, there is a direct

Table 5.



correlation in time between the incidence of operative vaginal deliveries and the frequency of pharmacological treatment in labour.

In fact, reflection on our evolving clinical experience<sup>(12)</sup>, led us to gradually reduce the use of oxytocin in labour, bringing about a decrease (from 16% to 6%) in the frequency of operative fetal extraction, without compromising perinatal mortality or cesarean section rates.

In recent years, numerous papers examining the problem of pharmacological treatment in labour have been published<sup>(13, 14, 15)</sup>.

These Authors have analyzed the use of oxytocin in labour, concluding that while the administration of oxytocin in the third stage reduces the risk of postpartum haemorrhage, indiscriminate use during the second stage can lead to an arrest of cervical dilatation or cause fetal distress.

However, other Authors have performed randomized studies to evaluate the action of oxytocin in cases of arrested cervical dilatation, with the administration of a simple saline solution as control<sup>(16, 17)</sup>. They observed that oxytocin is able to correct this anomaly without increasing the frequency of cesarean sections or fetal distress. The administration of oxytocin is specifically indicated and favourable in case of labour halted at the end of the cervical phase with the complete cessation of contractions.

We have reserves of ethical nature regarding randomized clinical studies of this type in that treatment in labour cannot be randomized but must be directed and specific to each case.

However, these observations are unquestionably comparable to ours in that they demonstrate that a correct use of oxytocin in labour can help correct dynamic dystocia, while indiscriminate or incorrect use increases the frequency of operative deliveries.

In fact, the present-day tendency is ever more one of "wait and see", a return to a more physiological and human course in labour, in which the role of physician is to control the various phases so that they follow the agreed chronology and that there is no fetal distress.

This shows that a "natural" labour and delivery, ever more frequently requested by women today, is possible provided that the well-being of the mother and fetus is guaranteed.

We are aware that this study is essentially the result of two factors: a team of physicians with a shared approach and clinical conduct, and a group of patients homogeneous in terms of the management of their pregnancy and delivery.

Clearly this experience cannot be transferred uncritically to other situations, especially those where the organization of care centres does not allow close prenatal supervision, so that expectant mothers often arrive in the delivery room as if to a casualty ward, with a consequent increase in risk.

Today, the falling birth rate and evolving expectations in labour management cannot but lead to a revision of the guidelines for obstetric assistance, which will have to include the monitoring of pregnancy by the same team that will assist in labour and delivery. For this perspective, the result of our study clearly indicates that supervision must be preferred to obstetric and pharmacological management, so that active intervention is limited to those cases in which it is truly appropriate.

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