

Long term treatment with nifedipine retard to suppress preterm labour

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Summary: Oral nifedipine retard treatment to suppress preterm labour was administered to 8 patients using a new scheme. Treatment started between 28 and 34 weeks of pregnancy and continued until 38-40 weeks. In all cases suppression of premature labour without hospitalization was achieved. No adverse maternal/fetal effects were observed.

Key words: obstetrics; preterm labour; calcium antagonists; nifedipine.

INTRODUCTION

In modern obstetrics prematurity accounts for 50% of perinatal mortality and the WHO goal for the 90s is to reduce it to 5/1000 in developed countries. To reach this goal is important to take into account that prenatal diagnosis will more and more reduce the number of unviable fetuses to come to term. It is obvious that the reduction of perinatal mortality in obstetrics today is undoubtedly related to the reduction of preterm labours⁽¹⁾.

Many factors are responsible for preterm labour. They could be summarized mainly as follows: 1) limited knowledge of the causes of this condition; 2) limited therapeutical effect of the tocolytic drugs used; 3) adverse effects of the tocolytics used; 4) obstetric inertia.

These clinical/therapeutical problems in achieving suppression of preterm labour

without adverse effects explain the continuous investigations on new tocolytic methods and drugs. In the last ten years the calcium antagonist nifedipine has been employed in the treatment of both pregnancy associated hypertension^(5, 7, 9) and premature labour^(7, 8), although for this last condition only limited experiences have been published and treatment was limited in time^(5, 8, 10). Moreover different nifedipine treatment schemes have been employed and scanty information about the conditions of the cervix are reported.

A personal experience of the long term treatment with nifedipine retard using a new scheme to suppress premature labour is reported.

MATERIAL AND METHOD

The patients were selected among those complaining of regular uterine contractions. After cardiotocographic (CTG) evaluation (at least 1 contraction every 5-10 minutes) a pelvic score evaluation was made and only women with a pelvic score (Bishop's) of 5 or more were selected (Table 1 and 2). Informed consent was given and after patients ac-

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Table 1. — Previous pregnancies in treated patients.

Case no.	Parity		Pregnancy associated pathology	Weight	Follow-up
1	3210	2 spontaneous abortions 1 birth at 35 weeks	EPH gestosis	2000 gr	severe handicap
2	1010	1 birth at 36 weeks	—	2180	normal
3	0000	—	—	—	—
4	0000	—	—	—	—
5	0000	—	—	—	—
6	1100	1 spontaneous abortion	myomas	—	—
7	3003	3 normal deliveries	—	3200, 3500 4300	normals
8	0000	—	—	—	—

Table 2. — Clinical features at the beginning of treatment.

Case no.	Maternal age	Associated pathology	Treatment beginning weeks	Cervix dilatation cm	Pelvic score (Bishop)
1	41	hypertension	29	2	5
2	31	—	30	3	8
3	28	—	30	2	8
4	26	—	34	1	7
5	25	—	32	2	8
6	39	myomas	31	1	7
7	32	—	34	2	6
8	27	—	28	1	6

ceptance of the new treatment scheme, they were invited to observe bed rest at home for two days, taking at 8 a.m. and 8 p.m. a tablet of nifedipine retard (20+20 mg) (Adalat AR, Bayer). After 3 days a new CTG and pelvic control were made and the patients were invited to take up their normal life again and to continue taking the drug with the same scheme. CTG controls associated with ultrasound evaluation of fetal growth were performed every two weeks until the decision to stop the treatment (Table 3).

RESULTS

In all the 8 cases the treatment goal was achieved and the results are shown in Table 3. Only 1 case of small for date occurred (case 2). All births were uneventful and pediatric control at 6 months after delivery was normal in all cases.

DISCUSSION

The limited efficacy in suppressing preterm labour of the tocolytic drugs currently used⁽¹⁾, their severe side effects^(2, 3), as well as obstetric inertia⁽⁴⁾ are all causes of treatment failure in this obstetrical condition and have led to continuous research for new therapeutical approaches.

Calcium antagonists have been used in different formulas to suppress premature labour in recent years. Among these drugs oral nifedipine received particular attention^(5, 7, 8). As outlined by Tanganelli⁽¹⁰⁾ in his review, nifedipine reduces the myometrial contractility and at high doses the release of oxytocin. Contractions induced by prostaglandins, oxytocin and methylergometrin are also reduced by nifedipine.

This drug acts mainly on the intensity of the uterine contractions, whereas the effects on their frequency are limited. Moreover nifedipine does not interfere with the spontaneous onset of labour and with normal retractility postpartum. These aspects were confirmed *in vitro* as well as in clinical practice using nifedipine in the treatment of hypertensive disorders of pregnancy^(7, 9). Finally nifedipine does not modify placental blood flow⁽¹²⁾. All these drug characteristics have led to the clinical use of nifedipine in obstetrics.

In the present report a new treatment scheme was used until delivery.

Table 3. - Outcome in treated patients.

Case no.	Therapy suspension (weeks)	Time of delivery after suspension	Delivery type	Infant weight	Apgar score 1-5 min
1	40	1 day	spontaneous	3700	9 - 10
2	38	5 days	spontaneous	2400	9 - 10
3	39	2 days	spontaneous	3000	6 - 8
4	39	1 day	spontaneous	3050	9 - 10
5	not done	38 weeks	spontaneous	2750	8 - 9
6	38	1 day	planned sectio	3080	8 - 9
7	39	8 days	spontaneous	3940	9 - 10
8	39	10 days	spontaneous	3950	9 - 10

Only one woman delivered before suspension of therapy at 38 weeks (Case 5, Table 3). In all other cases the birth occurred between 1 and 10 days after suspension of nifedipine administration. One case of small for date occurred, as in the woman's previous pregnancy (Case 2, Table 1). In one case of preexisting hypertension blood pressure remained in normal range (Case 1) and a double therapeutical effect was achieved. In no case was hospitalization required and no significant adverse effects of the therapy were observed.

CONCLUSIONS

Although a limited experience, this new treatment scheme using nifedipine retard to suppress premature labour is encouraging for further and wider evaluations. If confirmed this therapeutical approach could reduce costs and increase benefits for both patients and society and could open the way to the so-called chemical cerclage of the uterine cervix.

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