NIFEDIPINE REGIMEN IN TOCOLYTIC THERAPY, SIDE EFFECTS AND THEIR MANAGEMENT: CASE REPORT

Anila Karameta
Obstetric-Gynecologic University Hospital of Tirana "Koco Gliozheni"

ABSTRACT

Nifedipine is the main tocolytic agent used in OBSTETRIC-GYNECOLOGIC HOSPITAL OF TIRANA "KOCO GLIOZHENI". Good tocolytic efficiency, easy way of administration, less side and adverse effects than other tocolytic agents, low cost, make nifedipine our tocolytic agent of choice. Nifedipine has vasodilating effects, so that its administration can be associated with several side effects. Monitoring of side effects and their good management are very important for the successful management of premature labour.

OBJECTIVE

Study of nifedipine side effects; To find the ways to manage the side effects and make possible the successful treatment of premature labour.

METHODS

The study population: women presented to our hospital for premature labour (22-34 weeks of gestation) and treated with nifedipine, were monitored for vital parametres and side effects, at predefined intervals of time. A four-point Likert scale multiple-choice questionnaire was used to access the perceived degree of side effects.

CONCLUSION

In general, use of nifedipine as the first-line tocolytic was safe.
However, severe maternal hypotension and sesvere headache can occur and close monitoring of vital signs is warranted. The psychological support and fluid diet rregimen have a good impact in the good management of side effects and in the sucsses of the treatment.

CASE REPORT

Patient S. H., 22 years old, recovered on 23/8 /2017 at 10 past 15 min am.
Recovery diagnose: Partus premature incipiens, 29 -30 weeks of gestation, twin pregnancy, status post two laparotomies during pregnancy(apendixectomy and abdominal postoperator peritonitis).
The pregnant woman: Weighted 47 kg
Length 150cm
Skin and mucosis coloured lightly
Temperature 36,6 grade Celsius.
Arterial tension: 110/70mmHg
She had ritmic cardiac tones at 92 per minute frequency.
Respiratory frequency.: normal.
The patient had uterine contractiones every 4 minutes, at medium intensity and at 10 seconds of duration.

She had a third grade of pelvic visciatura(cd 16 cm).

Obstetric visit: normal morphologic development;
Colum uteri:19 mm, without dilatation.
Echography: Twin pregnancy(both head position), at 29-30 weeks of gestation, biamnial, monochorionic.
Normal fetal development. Amniotic liquid normal.
Fetal heart beats :normal
Fluximetria: normal
Colum uteri:19 mm

Treatment
Bethametasone : 12mg every 24 hours two doses.
NIFEDIPINE: plain 10 mg tablets.
One tablet every 20 minutes(3doses)
One tablet every 4 hours.
48 hours after the first tablet, one tablet every 6 hours
Fisiologic solution 0,9 % : 500 cc every 12 hours.
Aditional fluid diet was recommended.
Psikotherapy

The patient was informed about every single possible side effect of nifedipine and the importance to get through this situation , treat the side effects ,continue tocolytic treatment and stop the premature labour.

Treatment effects and side effects
After the second nifedipine tablet, taken oraly, the uterine contractions were shorter, at lower intensity, and tented to happen every12-13 min.
After the third nifediine tablet , the uterine contractions happened every 35 minutes, at lighter intensity and at 8 seconds of duration.
The patient felt really better and became enthusiastic, ready to get over the side effects that could appear.

15 minutes after the beginning of the treatment : Arterial Tension was 100/60 mmHg
Cardiac frequency 88/min
Normal breathing
Fetal heart rates 164/min

30 minutes after the begining of the treatment: Arterial Tension was 100/60 mmHg
Cardiac frequency 92/min
Normal breathing
FHR 168/min

45 minutes after the begining of the treatment : Arterial Tension was 90/55 mm Hg
Cardiac frequency 98/min
Normal breathing
Light flushing
FHR 176/min

60 minutes after the beginning of the treatment: Arterial tension 90/50mmHg

Cardiac frequency 104 / min
Light dyspnea
Light flushing
FHR 180/ min

The fisiologic perfusion was applicated

80 minutes after the treatment beginning: Arterial tension 90/ 55 mmHg
Cardiac frequency 110 /min
Light dyspnea
Flushing
Light weakness feeling
FHR 188/min

100 min after treatment beginning Arterial tension 90/50 mm Hg
Cardiac frequency 115/min
light dyspnea
Flushing
Light headache
Weakness feeling
FHR 188/min

120 min after treatment beginning Arterial tension 85/50 mm Hg
Cardiac frequency 120/ min
Headache
Dyspnea
Flushing
Weakness feeling
FHR 192/ min

Uterine contractions : 1 every 57 minutes.
Fluid therapy and psikotherapy was applicated.
One tablet of 0,5 g Paracetamol was given.
Antianemic medicaments (ferri sulfate and folic acid) were used to treat anemia(Hgb 8,8 g/dl)

After 4 hours from treatment begining : Arterial tension 105/58 mmHg
Cardiac frequency 105/min
Flushing
FHR 184/min

Uterine contractions : 1 every 90 min
After 6 hours from treatment begining Arterial tension 100/50 mm Hg
Cardiac frequency 110/ min
Light dyspnea
Light headache
Flushing
FHR 160/min

Uterine contractions 1 every 120 minutes.
The patient continued the protocol treatment , at the same parametres, for 86 hours.
She was feeling fine and the two fetuses were welldeveoped and fluximetric parameters were normal.

After 86 hours of successful treatment , uterine contractions reappeared every 5 minutes.
The therapy was readapted to 6 tablets of oral 10mg nifedipine, for 24 hours.
90 hours after first treatment beginning , Arterial tension was 100/55mmHg, cardiac frequency 145/ min, the patient had dyspnea .
We treated her with fluid therapy, 25 mg of atenolol every 12 hours.
The patient underwent cardiologic consulting and echocardiography. She was find to have light mitral regurgitation.
Uterine contractions stopped. The patient was feeling fine, Arterial tension 105/ 60 mmHg, Cardiac frequency 105 / min, flushing persisted during all the time. Fetal parametres were normal.
We tried to use nifedipine 10mg every 4 hours , but uterine contractions reappeared, so that we had to supply the treatment with indometacine(100mg every 12 hours for 5 doses). After that, we had to use nifedipine at 10mg every 4hours till 34 weeks of gestation.
The patient had stable arterial tension at 110 /60 mmHg during all the treatment. Cardiac frequency varied 88-98/min, under atenolol treatment till the birth day. Flushing persisted all the time. Very light dyspnea appeared 5 times. Fetal fluximetria and development were normal.
The patiened gave birth to two beautiful baby girls at 38 weeks of gestation. She laboured naturally. The two babies weighted respectively 2500g and 2450g. They were monochorionic biamniotic twins.
NO problems were evidented to mother and the babies.

REFERENCES

1. Braunwald E. Mechanism of action of calcium-channel blocking agents. N Engl J Med 1982;307:1618-27.
2. Ulmsten U, Andersson KE, Forman A. Relaxing effects of Nifedipine on the nonpregnant human uterus in vitro and in vivo. Obstet Gynecol 1978;52:436-41.
3. Ulmsten U, Andersson KE, Wingerup L. Treatment of premature labor with the calcium antagonist nifedipine. Arch Gynecol 1980;229:1-5.
4. Clinical Guideline No. 1(B). Tocolytic drugs for women in preterm labour. London: Royal College of Obstetricians and Gynaecologists; 2002.
5. King JF, Flenady VJ, Papatsonis DN, Dekker GA, Carbonne B. Calcium channel blockers for inhibiting preterm labour. Cochrane Database Syst Rev 2003;(1):CD002255.
6. Oei SG. Calcium channel blockers for tocolysis: a review of their role and safety following reports of serious adverse events. Eur J Obstet Gynecol Reprod Biol 2006;126:137-45.
7. Papatsonis DN, Van Geijn HP, Adèr HJ, Lange FM, Bleker OP, Dekker GA. Nifedipine and ritodrine in the management of preterm labor: a randomized multicenter trial. Obstet Gynecol 1997;90:230-4.
8. Ferguson JE 2nd, Schutz T, Pershe R, Stevenson DK, Blaschke T. Nifedipine pharmacokinetics during preterm labor tocolysis. Am J Obstet Gynecol 1989;161:1485-90.
9. Manninen AK, Juhakoski A. Nifedipine concentrations in maternal and umbilical serum, amniotic fluid, breast milk and urine of mothers and offspring. Int J Clin Pharmacol Res 1991;11:231-6.