POLICY

The physician directs the treatment of women with preterm labour (PTL).

Applicability: Treatment for PTL occurs in the Birthing area of the Acute Perinatal Program.

PROCEDURE

| Definition of true preterm labour: | • Gestational age is between 23+6 and 34 +0 weeks  
| | • Regular contractions - at least 4 in 20 minutes  
| | • Including one of the following:  
| | - cervix greater than or equal to (≥) 2 centimetres (cm) dilated  
| | - cervix ≥ 80% effaced  
| | - progressive cervical change  
| | - positive fetal fibronectin  
| | - cervical endovaginal scan with less than (<) 2.5 cm length |

1.1 Contraindications

**Contraindications to tocolytic therapy including:**

- Abnormal fetal health surveillance by electronic fetal monitoring (EFM)
- Cervical dilatation ≥ 4 cm for a woman who is actively labouring
- Chorioamnionitis or suspected intrauterine infection
- Fetal demise or lethal congenital anomaly
- Gestational age less than or equal to (≤) 23 +6 weeks (in exceptional circumstances tocolytic treatment may be used under 24 weeks gestational age)
- Gestational age ≥ 34 +0 weeks
- Significant vaginal bleeding (relative contraindication, assess each case)
- Other obstetrical or medical conditions that contraindicate the prolongation of pregnancy

**Contraindications to nifedipine therapy including:**

- Allergy to nifedipine
- Any contraindications to tocolysis (listed above)
- Concurrent use of maternal nitroglycerin, beta-blockers, beta-agonists, digoxin
- Conditions of relatively enhanced maternal vasodilatation: i.e. sepsis
- Maternal cardiac disease: coronary artery disease, acute coronary syndrome, previous myocardial infarction, dilated cardiomyopathy, IHSS, congestive heart failure, SA node or AV node conduction disturbances, pre-excitation syndromes (i.e. WPW), severe aortic stenosis
- Maternal hypotension (defined as 100/60)
- Maternal liver disease where metabolizing function is impaired
- Maternal risk for undiagnosed coronary artery disease and ECG status unknown (e.g. any woman with type 1 or type 2 diabetes for ≥ 15 years, chronic hypertension, maternal age ≥ 45 years)

1.2 Side Effects

**Side effects of nifedipine are dose related and include the following:**

- Dizziness (10-27%)
- Flushing & headache (10-25%)
- Nausea & heartburn (10%)
- Peripheral edema (7-30%)
- Tachycardia, rarely associated with palpitations (1-7%)
- Transient hypotension (5%)
- Weakness (10-12%)

**Symptoms are fainting and hypotension**

If the blood pressure is < 100/60 mmHg and/or the woman has a sustained pulse > 110 bpm:
• Hold the nifedipine and call the physician.

If significant hypotension occurs during loading or maintenance administration, initiate the following interventions:
• Place the woman in the left lateral recumbent position
• Notify the physician immediately
• Continue electronic fetal monitoring (EFM)
• Monitor vital signs and oxygen saturation
• Consider need for urinary catheterization to monitor urinary output

**Rare side effect to watch for:**
- Chest pain (< 1%)
- Pulmonary edema with resulting dyspnea (2%)
- Severe hypotension (< 5%)

**Discontinue nifedipine under the following circumstances:**
- 48 hours after the first dose of corticosteroids has been administered, and the woman has arrived in an appropriate level of care facility
- If significant side effects occur
- When delivery is imminent consider [Magnesium Sulfate Administration for Neonatal Neuroprotection](#)

### 1.3 Assessment

<table>
<thead>
<tr>
<th><strong>Physician/ Obstetrician/ Obstetrical Resident</strong></th>
<th><strong>Assess for:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assess for:</strong></td>
<td><strong>True PTL, assess contractions by palpation and frequency</strong></td>
</tr>
<tr>
<td><strong>Contraindications to tocolytic therapy</strong></td>
<td><strong>Contraindications to nifedipine therapy. Review possible drug interactions, see drug information data, Appendix B</strong></td>
</tr>
<tr>
<td><strong>Confirm fetal presentation with ultrasound (if unclear clinically)</strong></td>
<td><strong>Complete Physician's Orders - PTL Nifedipine for Tocolysis</strong></td>
</tr>
</tbody>
</table>

See Physician’s Orders.

Note: With nifedipine capsule do not give grapefruit juice concurrently as it has been shown to increase plasma levels of nifedipine.

### 1.4 Preparation for therapy

**Registered Nurse (RN)**
- Start intravenous (IV) with normal saline
- Limit woman’s activity, with bathroom privileges only
- Restrict oral intake to nothing by mouth until after the loading dose of nifedipine has been administered and contractions have ceased

Prior to the administration of the nifedipine capsule (loading dose):
- Assess vital signs - blood pressure, heart rate, respiratory rate, oxygen saturation
- Initiate continuous EFM

### 1.5 Administration of Nifedipine

Monitor the woman during the first/loading dose of nifedipine
• Assess BP every 15 minutes for 2 hours following the medication loading dose
• Assess vital signs (heart rate, respiratory rate, oxygen saturation) every hour
• Continuous EFM during the administration of the nifedipine capsule loading dose and for 2 hours following the administration of the last loading dose
• Observe for drug side effects, see 2.2

Maintenance therapy
During maintenance doses of nifedipine (Adalat XL)
• Assess maternal vital signs and fetal heart rate before each dose and
• Repeat in 4 hours following each dose
• Evaluate response to nifedipine therapy
• Assess frequency and strength of contractions on an ongoing basis as warranted by the woman’s condition. Observe for:
  ▪ Absence or decreased uterine activity by palpation (RN or physician)
  ▪ Absence or decreased abdominal cramping as perceived by the woman
  ▪ No further cervical dilatation or effacement

Key
> = greater than
< = less than
≤ = less than or equal to
≥ = greater than or equal to
AV = atrioventricular
bpm = beats per minute
cm = centimetres
ECG = electrocardiogram
e.g. = for example
GBS = Group B Strep
HR = heart rate
IHSS = Idiopathic hypertrophic subaortic stenosis
mmHg = millimetres mercury
SA = sinoatrial
SaO2 = oxygen saturation
WPW = Wolff-Parkinson-White syndrome

DOCUMENTATION
• Fetal Heart Tracing and Label
• Interprofessional Progress Notes
• Labour Partogram or Special Clinical Record
• Physician’s Orders - PTL Nifedipine for Tocolysis
• Triage and Assessment Record

REFERENCES
Oie, SG. Calcium channel blockers for tocolysis: a review of their role and safety following reports of serious adverse events. EurJOGRB. (2006).

**APPENDIX**

Appendix A  Physician’s Orders – Preterm Labour Nifedipine for Tocolysis
Appendix B  Nifedipine: Drug Information