Drugs Acting on the Uterus

Chapter 53

Oxytocic Drugs

- Stimulate the uterus
- Used antepartum to induce uterine contractions
- Used postpartum to prevent hemorrhage

Examples:
- Ergonovine (Ergotrate)
- Methylergonovine (Methergine)
- Oxytocin (Pitocin)

Oxytocin (Pitocin)

Action

- Stimulates uterine smooth muscle
  - Produces contractions similar to those in spontaneous labor
- Stimulates mammary gland smooth muscle
  - Facilitates lactation
- Has vasopressor and antidiuretic effects
Oxytocin (Pitocin)

**Uses**
- Induction/augmentation of labor
- Management of inevitable or incomplete abortion
- Control postpartum bleeding and hemorrhage
- Stimulate milk letdown reflex (intranasal)

**Adverse Reactions**
- Fetal bradycardia
- Uterine rupture
- Uterine hypertonicity
- N/V
- Cardiac arrhythmias
- Anaphylaxis
- Serious water intoxication

**Contraindications/Interactions**
- CPD
- Unfavorable fetal position/presentation
- Obstetric emergencies
- Fetal distress when delivery not imminent
- Severe toxemia (preeclampsia/eclampsia)
- Hypertonic uterus
- Total placental previa
- Labor induction when vaginal delivery contraindicated
**Oxytocin (Pitocin) Nursing Implications**

- Must be administered on an IV pump
- Max rate 20 mU/min
- Continuous FHR monitoring
- Assess intensity, frequency, and duration of uterine contractions

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**Oxytocin (Pitocin) Nursing Implications**

When monitoring UC, notify MD immediately:

- Significant change in FHR
- UC lasting >60 sec
- UC more frequent than every 2-3 min
- No palpable relaxation of the uterus
- Signs of water intoxication or fluid overload
  - Drowsiness, confusion, HA, wheezing, coughing, rapid breathing

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**Ergonovine (Ergotrate) Methylergonovine (Methergine) Actions & Uses**

- Directly stimulates uterine and vascular smooth muscle
- Decrease incidence of uterine bleeding
- Prevent postpartum hemorrhage caused by uterine atony
Ergonovine (Ergotrate)  
Methylergonovine (Methergine)  
Adverse Reactions  
- N/V  
- HA, dizziness  
- SOB  
- Chest pain, HTN, palpitations  
- Ergotism  
  - N/V  
  - Abdominal pain  
  - Numbness, tingling of extremities  
  - Increase in BP

Contraindications/Interactions  
- Induction of labor  
- Before delivery of placenta  
- Hypertension, pre-eclampsia  
- Excessive vasoconstriction can occur with use of other vasoconstrictors such as dopamine or nicotine

Tocolytics  
- Decrease uterine activity  
- Management of preterm labor  
Examples:  
- Magnesium sulfate  
- Terbutaline (Brethine)  
- Indomethacin (NSAID)  
- Ritodrine (Yupotar)
Magnesium Sulfate
Actions and Uses

• Anticonvulsant for severe eclampsia or preeclampsia
• Manage preterm labor in pregnancies >27 weeks gestation
• Typically given <48hrs until steroid prophylaxis can be initiated
• Administration requires hospitalization

Magnesium Sulfate
Adverse Reactions

• Fatigue
• Blurred vision
• ↓ respiratory rate
• Flushing, sweating
• Hypotension, bradycardia
• Depressed reflexes
• Muscle weakness

Magnesium Sulfate
Contraindications

• Hypermagnesemia
• Hypocalcemia
• Anuria
• Heart block
• Within 2hr of delivery
Magnesium Sulfate
Nursing Implications

- Continuous infusion via IV pump
- Monitor respirations, reflexes, urine output, BP, heart rate
- Mag toxicity:
  - loss of DTR
  - resp <12/min
  - urinary output<30ml/hr
- Antidote: calcium gluconate

Ritodrine (Yupotar)
Action and Uses

- Stimulates beta-2 adrenergic receptors
  - Inhibits uterine smooth muscle contractions
- Used in preterm labor >20wks

Ritodrine (Yupotar)
Adverse Reactions

- Alterations in fetal/maternal HR
- Alterations in maternal BP
- N/V
- Headache
- Palpitations
- Nervousness, restlessness
- Emotional upset
- Pulmonary edema (rare)
Ritodrine (Yupotar)
Contraindications
- Antepartum hemorrhage
- Eclampsia or severe pre-eclampsia
- Cardiac disease
- Pulmonary hypertension
- Uncontrolled DM
- Bronchial asthma
- Pregnancy < 20 weeks gestation
- Intrauterine fetal death

Ritodrine (Yupotar)
Interactions
- ↓ effect when adm with beta-adrenergic blocking med (propranolol)
- ↑ risk of pulmonary edema when adm with corticosteroids
- ↑ cardiovascular effects with diazoxide, general anesthetics, MgSO₄, meperidine

Ritodrine (Yupotar)
Nursing Implications
- Monitor maternal vital signs
- Monitor FHR
- Place patient in left lateral position to minimize hypotension
Terbutaline (Brethine) 
Actions and Uses
- Stimulates beta-2 adrenergic receptors
  - Inhibits uterine smooth muscle contractions
- Produces bronchodilation
- Management of preterm labor
  - Not FDA approved for this use

Terbutaline (Brethine) 
Adverse Reactions
- Nervousness, restlessness
- Tremor
- Headache
- Anxiety
- HTN
- Hypokalemia
- Arrhythmias, palpitations
- Pulmonary edema (rare)

Terbutaline (Brethine) 
Contraindications/Interactions
- Tachyarrhythmias
- Digitalis toxicity
- HTN
- Cautious use: pregnancy, cardiac dx, CVA hx, hyperthyroidism, seizure disorder
- Interactions: ↑ risk of cardiac arrhythmias when adm with anesthetic halothane
**Tocolytics**

**Nursing Implications**

- To minimize hypotension, position patient in left lateral position
- Report to primary care provider
  - pulse rate of 140 bpm
  - persistent elevation of pulse rate
  - irregular pulse
  - increase in respiratory rate of more than 20 respirations/min
- Assess respiratory status for symptoms of pulmonary edema