Studies of the concentrations of oxytocin in the maternal plasma during Pitocin infusion have shown that infusion rates up to 6 ml/hr give the same oxytocin levels that are found in spontaneous labor. At term, higher infusion rates should be given with great care, and rates exceeding 9-10 ml/min are rarely required. Before term, when the sensitivity of the uterus is lower because of a lower concentration of oxytocin receptors, a higher infusion rate may be required.

3. Monitoring
a. Electronically monitor the uterine activity and the fetal heart rate throughout the infusion of Pitocin. Attention should be given to tonus, amplitude and frequency of contractions, and to the fetal heart rate in relation to uterine contractions. If uterine contractions become too powerful, the infusion can be abruptly stopped, and oxytocin stimulation of the uterine musculature will soon wane (see PRECAUTIONS section).
b. Discontinue the infusion of Pitocin immediately in the event of uterine hyperactivity and/or fetal distress. Administer oxygen to the mother, who preferably should be put in a lateral position. The condition of mother and fetus should immediately be evaluated by the responsible physician and appropriate steps taken.

B. Control of Postpartum Uterine Bleeding
1. Intravenous infusion. If the patient has an intravenous infusion running, 10 to 40 units of oxytocin may be added to the bottle, depending on the amount of electrolyte or dextrase solution remaining (maximum 40 units to 1000 mL). Adjust the infusion rate to sustain uterine contraction and control uterine atony.
2. Intramuscular administration. (One mL) Ten (10) units of Pitocin can be given after the delivery of the placenta.

C. Treatment of Incomplete, Inevitable, or Elective Abortion
Intravenous infusion of 16 units of Pitocin added to 500 mL of a physiologic saline solution or 5% dextrose-in-water solution may help the uterus contract after a suction or sharp curette for an incomplete, inevitable, or elective abortion.
Subsequent to intra-amniotic injection of hypertonic saline, prostaglandins, urea, etc., for midtrimester elective abortion, the injection-to-abortion time may be shortened by infusion of Pitocin at the rate of 10 to 20 milliliters (20 to 40 drops) per minute. The total dose should not exceed 30 units in a 12-hour period due to the risk of water intoxication.

HOW SUPPLIED
Pitocin (Oxytocin Injection, USP) Synthetic is available as follows:
NDC 61570-416-01 Packages of ten 1-mL ampoules, each containing 10 units of oxytocin.
NDC 61570-416-09 Packages of ten 1-mL Steri-Dose® disposable syringes, each containing 10 units of oxytocin.
NDC 61570-416-06 Packages of twenty-five oversized 1-mL Sterila-Kit®, each containing 10 units of oxytocin.

STORE:
Store at 2°-8°C (36°-46°F). May be held at 15°-25°C for up to 30 days. Discard after holding -

DESCRIPTION
Pitocin (oxytocin injection, USP) Synthetic is a sterile, clear, colorless aqueous solution of synthetic oxytocin, for intravenous infusion or intramuscular injection. Pitocin is a nonapeptide found in pituitary extracts from mammials. It is standardized to contain 10 units of oxytocin per milliliter and contains 0.5% Chlorobutanol, a chloroform deriva-
tive as a preservative, with the pH adjusted with acetic acid. Pitocin may contain up to 25% of total impurities. The hormone is prepared synthetically to avoid possible contamination with vasopressin (ADH) and other small polypeptides with biologic activity. Pitocin has the empirical formula C_{24}H_{28}N_{2}O_{2}S_{2} with molecular weight 393.51. The structural formula is as follows:

\[
\text{H-Cys-Try-Glu-Val-Pro-Leu-Gly-NH}_2
\]

CLINICAL PHARMACOLOGY
Uterine motility depends on the formation of the contractile protein actomyosin under the influence of the Ca²⁺-dependent phosphoryl-
ating enzyme myosin light-chain kinase. Oxytocin promotes contractions by increasing the intracellular Ca²⁺. Oxytocin has specific receptors in the myometrium and the receptor concentration increases greatly during pregnancy, reaching a maximum in early labor at term. The response to a given dose of oxytocin is very individualized and depends on the sensitivity of the uterus, which is determined by the oxytocin receptor concentration. However, the physician should be aware that oxytocin in its pure form has inherent pressor and antidiuretic properties which may become manifest when large doses are administered. These properties are thought to be due to the fact that oxytocin and vasopressin differ in regard to only two of the eight amino acids (see PRECAUTIONS section).

Oxytocin is distributed throughout the extracellular fluid. Small amounts of the drug probably reach the fetal circulation. Oxytocin has a plasma half-life of about 1 to 6 minutes which is decreased in late pregnancy and during lactation. Following intravenous adminis-
tration of oxytocin, uterine response occurs almost immediately and subsides within 1 hour. Following intramuscular injection of the drug, uterine response occurs within 3 to 5 minutes and persists for 2 to 3 hours. Its rapid removal from plasma is accomplished largely by the kidney and liver. Only small amounts are excreted in urine unchanged.

INDICATIONS AND USAGE

IMPORTANT NOTICE
Elective induction of labor is defined as the initiation of labor in a pregnant individual who has no medical indications for induction. Since the available data are inadequate to evaluate the benefits-to-risks considerations, Pitocin is not indicated for elective induction of labor.

Antepartum: Pitocin is indicated for the induction or improvement of uterine contractions, where this is desirable and considered suitable for reasons of fetal or maternal concern, in order to achieve vaginal delivery. It is indicated for (1) induction of labor in patients with a medical indication for the induction of labor, such as Rh problems, maternal diabetes, preeclampsia at near term, when delivery is in the best interests of mother and fetus or when membranes are prematurely ruptured and delivery is indicated; (2) stimulation or reinforcement of labor, as in selected cases of uterine inertia; (3) as an adjunctive therapy in the management of incomplete or inevitable abortion. In the first trimester, curatage is generally considered primary therapy. In second trimester, oxytocin infusion will often be successful in emptying the uterus. Other means of therapy, however, may be required in such cases.

Postpartum: Pitocin is indicated to produce uterine contractions during the third stage of labor and to control postpartum bleeding or hemmorhage.

CONTRAINDICATIONS
Antepartum use of Pitocin is contraindicated in any of the following circumstances:
1. Where there is significant cephalopelvic disproportion;
2. In unfavorable fetal positions or presentations, such as transverse lies, which are undeliver-
able without conversion prior to delivery;
3. In obstetrical emergencies where the benefit-to-risk ratio for either the fetus or the mother favors surgical intervention;
when used as indicated.

pharmacological properties, it would not be expected to present a risk of fetal abnormalities induced abortion. Based on the wide experience with this drug and its chemical structure and cations for use in the first trimester of pregnancy other than in relation to spontaneous or Teratogenic Effect

Pregnancy

is there any information on its effect on fertility.

atrioventricular rhythms has also been noted when oxytocin was used concomitantly with

Severe hypertension has been reported When oxytocin was given three to four hours follow-

Drug Interactions

Severe hypertension has been reported when oxytocin was given three to four hours follow-

Intravenous infusion (drip method) is the only acceptable method of parenteral administration

The dosage of oxytocin is determined by the uterine response and must therefore be individu-

Prior to administration whenever solution and container permit.

DOSAGE AND ADMINISTRATION

A. Induction or Stimulation of Labor

The following adverse reactions have been reported in the mother:

See INDICATIONS AND USAGE section.

ADVERSE REACTIONS

The following adverse reactions have been reported in the fetus or neonate:

Nonteratogenic Effects

See ADVERSE REACTIONS in the fetus or neonate. Labor and Delivery

OVERDOSAGE

Oxycodone with oxytocin depends essentially on uterine hyperactivity whether or not due
to hypersensitivity to this agent. Hyperstimulation with strong (hypertonic or prolonged tetanic
contractions, or a resting tone of 15 to 20 mm H20 or more between contractions can lead to
tumefaction of the uterus, uterine rupture, cervical and vaginal lacerations, postpartum hemorrhage,
uteroplacental hyperperfusion, and variable deceleration of fetal heart, fetal hypoxia, hypercap-
nea, perinatal hepatic necrosis or death. Water intoxication with convulsions, which is caused by
the inherent antidiuretic effect of oxytocin, is a serious complication that may occur if large
doses (40 to 50 milliliters/minute) are infused for long periods. Management consists of imme-
diate discontinuation of oxytocin and symptomatic and supportive therapy.

DOSEAGE AND ADMINISTRATION

Parenteral drug products should be inspected visually for particulate matter and discoloration
prior to administration whenever solution and container permit. The dosage of oxytocin is determined by the uterine response and must therefore be individu-
alized and initiated at a very low level. The following dosage information is based upon various
regimens and indications in general use.

A. Induction or Stimulation of Labor

Intravenous infusion (drip method) is the only acceptable method of perterental administration
of Pitocin for the induction or stimulation of labor. Accurate control of the rate of infusion is
essential and is best accomplished by an infusion pump. It is convenient to piggyback the
Pitocin infusion on a physiologic electrolyte solution, permitting the Pitocin infusion to be
stopped abruptly without interrupting the electrolyte infusion. This is done in the following way:

1. Preparation

a. The standard solution for infusion of Pitocin is prepared by adding the contents of one
1-mL ampoule containing 10 units of oxytocin to 1000 mL of 0.9% aqueous sodium
chloride or Ringer's lactate. The combined solution containing 10 milliliters (mL) of
oxytocin/ml, is rotated in the infusion bottle for thorough mixing.

b. Establish the infusion with a separate bottle of physiologic electrolyte solution not con-
taining Pitocin.

c. Attach (piggyback) the Pitocin-containing bottle with the infusion pump to the infusion
line as close to the infusion site as possible.

2. Administration

The initial dose should be 0.5-1 µl/min (equal to 3-6 mL of the dilute oxytocin solution
per hour). At 30-60 minute intervals the dose should be gradually increased in increments
of 1-2 µl/min until the desired contraction pattern has been established. Once the
desired frequency of contractions has been reached and labor has progressed to 5-6 cm
dilation, the dose may be reduced by similar increments.