

Systematic review of

Induction and Augmentation by  
High dose and Low dose  
Oxytocin Infusion in Labor

Farzaneh Pazandeh

WHO Scholarship

Training Course in Reproductive Health Research

WHO 2007

Supervisor

**A. Metin Gülmezoglu**

WHO/Reproductive Health Research  
Department

**Farzaneh Pazandeh**

Shaheed Beheshti Medical University

University/Midwifery Department

Infertility and Reproductive Health Research Center

Tehran/IRAN

# INTRODUCTION

- Oxytocin was the first polypeptide hormone synthesized and the 1955 Nobel prize in chemistry was awarded for this.
- Oxytocin is highly effective and safe.
- Use of intravenous oxytocin is extremely common in modern obstetrics and incidence of labor induction or stimulation is between 3-25%.

- Augmentation by oxytocin is administered when spontaneous contractions are considered inadequate.
- Induction is administered when the benefits to either mother and the fetus outweigh those of continuing the pregnancy such as PROM, severe preeclampsia, and post-term pregnancies.



Oxytocin, with its power of producing regular, rhythmical and forcible uterine contractions, should be regarded as a most beneficent and valuable agent, which, however, should always be employed with care and a realisation of its limitations and dangers.

Hofbauer

(The first to use oxytocin to induce labor in 1927)

- Despite its common use in modern obstetrics no unanimity exists as to the optimal dosage regimen.
- There is controversy with regard to proper initial dose of oxytocin and mode of increment.

- Currently recommended starting doses range from 0.5 to 6 mU/min.
- Dosage increments range from 1 to 6 mU/min and the interval between dosage increase ranges from 15 to 60 min.

# DURATION OF LABOR

- High dose regimens in some studies were associated with shorter labors. In others labor did not differ in length.



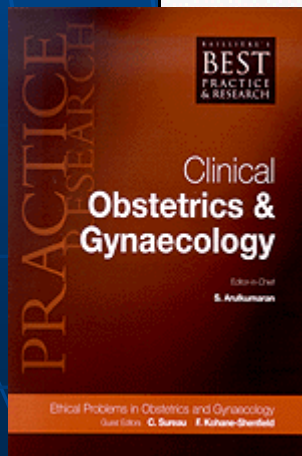
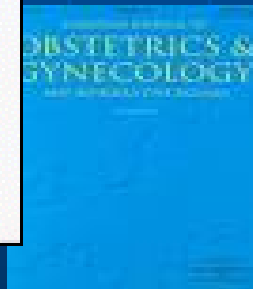
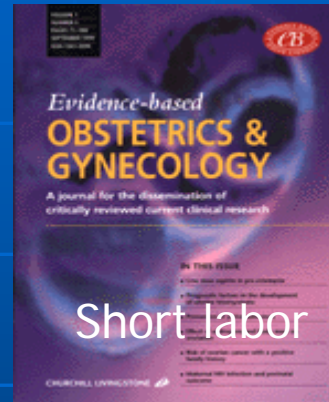
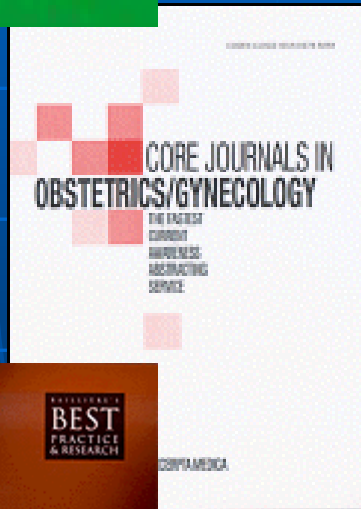
# CESAREAN DELIVERY

Some studies suggest that higher oxytocin dosages are associated with less need for cesarean delivery, others suggest an equivalent rate of cesarean delivery.

# Why is the study important ?

- PROSTAGLANDINS are expensive and unavailable in many countries.
- OXYTOCIN is highly used in developing countries.
- Because of shortage of skilled health workers, ONE to ONE care is not possible in developing countries.
- Electronic monitoring is not easily available in developing countries.

# Searches



# Objectives

- To compare augmentation and induction by high dose and low dose oxytocin infusion on labor duration to provide comprehensive and reliable information about outcome.

# Types of studies

- Randomized controlled trials comparing augmentation and induction of labor using high dose or low dose oxytocin by infusion pump.



# Studies compared

- High dose and low dose oxytocin.
- Having ideally adequate allocation concealment.
- Clinically meaningful outcome measures reported.

# Types of participants

- Pregnant women at term
- Singleton fetus in vertex presentation

# Methodology

- Electronic database: Medline, Cochrane library, WHO Regional database, Google.
- Additional references from review and primary studies.
- Hand search of journals for full text, if it not available online.

# Type of outcome measure

## ✓ Primary outcomes

- Uterine hyperstimulation
- Duration of labor
- Type of delivery
- Assisted vaginal delivery
- Rate of C/S

# Type of outcome measure

## ✓ Secondary outcomes

- Fetal distress
- Uterine rupture
- Postpartum hemorrhage
- Apgar score
- Neonate hospitalization
- Neonatal intensive care admission



# Search strategy

- Keywords for Medline
  - Limits: Humans, English
- 1- Induced labor OR Labor, Induced OR Induced labour OR Labor augmentation OR Labour augmentation = 8972
  - 2- Oxytocics (MESH term) = 9282
  - 3- #1 AND #2 = 716

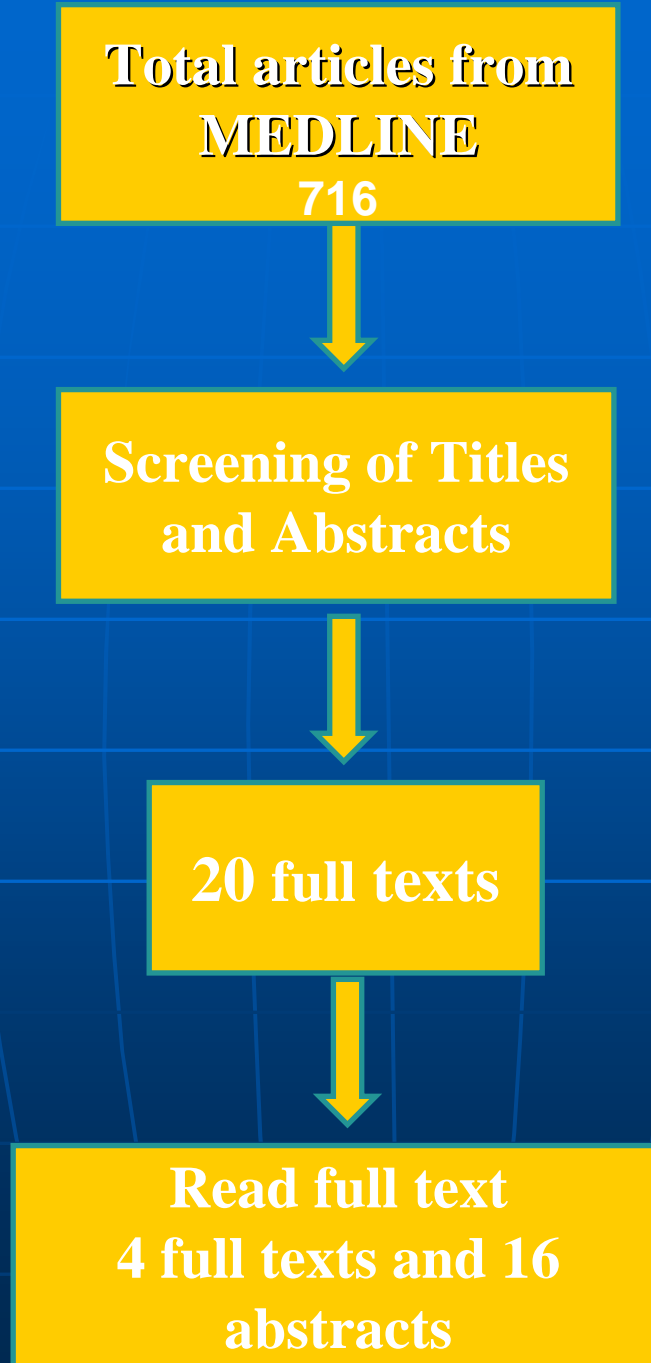
**Total articles from  
MEDLINE**

**716**

**Screening of Titles  
and Abstracts**

**20 full texts**

**Read full text  
4 full texts and 16  
abstracts**



# Problems in review

- Some outcomes have not been measured in the reviewed studies.
- Allocation concealment has not been reported in some studies.

# Acknowledgement

- Prof. Aldo Campana
- Dr. Regina Kulier
- Dr. Metin. A. Gülmezoglu
- Dr. Robert Tomson

**THANK YOU**