Prophylactic Use of Intraumbilical Vein Oxytocin in the Management of Third Stage of Labor A Randomized Controlled trial

CLINICAL TRIAL REGISTRATION:

ClinicalTrials.gov, www.clinicaltrials.gov, NCT01094028.

Thesis

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Abstract

Introduction Postpartum hemorrhage is a major cause of maternal death worldwide, and is the cause of approximately half of all maternal deaths in developing countries and even in many developed countries, the postpartum hemorrhage is one of the major causes of admission of mothers to intensive care units.

In countries with poor health services, the impact of bleeding in maternal mortality is also higher than this statistics. The Delivery hemorrhage is the cause of 12 % of all maternal mortalities and occurs in its highest rate after delivery.

Aim of the Work: This study aims ta asses the efficacy of oxytocin in reducing duration of third stage of labour.

Mythology: Type of Study : Randomized controlled study. **Study Settings :** Site : Ain Shams University Maternity Hospital. **Study Duration:** 6 months (from January 2015 – June 2016)

Results: This study included 150 women attending the delivery room of Department of Obstetrics and Gynecology which was divided according to the following inclusion and exclusion criteria into two groups :

Group A (study group: include 75 cases which received 10 IU (1ml) of oxytocin in umbilical vein).

Group B (control group: include 75 cases which received 1ml of saline in umbilical vein).

Conclusions: Intra-umbilical oxytocin is a useful alternative in patients where methylergometrine is contraindicated or in cases where intravenous fluids need to be restricted. For optimum effect, rapid injection immediately after clamping of the cord is essential . Hence patients requiring cord blood collection, cord segment for blood gases etc, involved a time lapse and were not included in our study. Primigravidas and multigravidas requiring epsiotomy showed fluctuations in the results due to variations in the blood loss . However, intra-umbilical injections can be used in both these groups.

Keywords: Prophylactic, Intraumbilical Vein Oxytocin, Management, Labor

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List of Abbreviations

ACOG : American College of Obstetricians and Gynecologists

CMACE : Centre for Maternal and Child Enquiries

NICE : National Institute for Health and Care Excellence

PPHGE : Postpartum hemorrhage

WHO : World Health Organization

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Introduction

Postpartum hemorrhage is a major cause of maternal death worldwide, and is the cause of approximately half of all maternal deaths in developing countries **(Belghiti, 2011)** and even in many developed countries, the postpartum hemorrhage is one of the major causes of admission of mothers to intensive care units **(Mercier and Van de Velde, 2008).**

In countries with poor health services, the impact of bleeding in maternal mortality is also higher than this statistics. The Delivery hemorrhage is the cause of 12 % of all maternal mortalities **(Rossi and Mullin, 2012)** and occurs in its highest rate after delivery.

The common causes of postpartum hemorrhage, includes bleeding from the site of implantation of the placenta, genital and nearby organs trauma or both of them **(Cunningham, 2010).**

Hemostasis of Placental implantation site is first established with the contraction of myometrium and thrombosis of the vessel lumens. As a result, parts attached to the placenta or large blood clots which impede efficient contracting of Myometrium, can disrupt hemostasis in the placental implantation site **(Cunningham, 2010).**

In the third stage of labor due to a partial and transient placental detachment, some degree of bleeding is unavoidable and sometimes the placenta can not be separated from the uterus. Prescribing oxytocin before the passing of placenta reduces the amount of bleeding **(Cunningham, 2010).**

If there is a massive bleeding and placenta can not pass automatically, manually removing of the placenta should be carried out and stunning or anesthesia is required and aseptic surgical techniques must be used **(Cunningham, 2010).**

By Using of Oxytocin as injection into the umblical vein, high concentrations of oxytocin reaches the placenta and causes the contraction of uterus, faster separation of placenta and reducing the time of the third stage of the labor **(Harara, 2011).**

This method has been used in most studies in the case of residual placentas (Retained Placenta) which has also been beneficial **(Güngördük, 2010).**

With regard to the high prevalence of the iron deficiency anemia in our country finding a way to reduce the postpartum bleeding is necessary in the past studies it has been proven that oxytocin injection to the umblical vein

reduces the labor bleeding and prevent the hemoglobin decrease after the delivery and the aim of this study is to evaluate the effect of the oxytocin injection to the umblical vein in management of the 3rd stage of the delivery and reducing the blood loss during this stage of the labour **(Güngördük, 2010).**

Aim of the Work

This study aims ta asses the efficacy of oxytocin in reducing duration of third stage of labour.

Research Question:

In women undergoing normal delivery, Dose injection of oxytocin in umbilical vein reduce the duration of third stage of labour ?

Research Hypothesis:

In women undergoing normal delivery , injection of oxytocin in umbilical vein may reduce the duration of third stage of labour .

Chapter (1)

Normal Labor

The Stages of Labor:

(Clinical review by Jane Dimer, MD Reviewed 2014)

First Stage of Labor:

Thinning (effacement) and opening (dilation) of the cervix:

During the first stage of labor, contractions help the cervix to thin and begin to open. This is called effacement and dilation. As the cervix dilates, the health care provider will measure the opening in centimeters. One centimeter is a little less than half an inch. During this stage, the cervix will widen to about 10 centimeters. This first stage of labor usually lasts about 12 to 13 hours for a first baby, and 7 to 8 hours for a second child.

The first stage of labor has three parts:

1. Early labor: The cervix opens to 4 centimeters.

2. Active labor: The cervix opens from 4 to 7 centimeters. When the contractions become every 3 to 4 minutes and they each last about 60 seconds, it often means that cervix

is opening faster (about 1 centimeter per hour). As the labor progresses, the bag of waters may break, causing a gush of fluid. After the bag of waters breaks, patient can expect contractions to speed up.

3. Transition to second stage: cervix opens from 7 to 10 centimeters. For most women, this is the hardest or most painful part of labor. This is when cervix opens to its fullest. Contractions last about 60 to 90 seconds and come every 2 to 3 minutes.

Second Stage of Labor :

Baby moves through the birth canal:

The second stage of labor begins when the cervix is completely dilated (open), and ends with the birth of your baby. Contractions push the baby down the birth canal.

The contractions continue to be strong. The length of the second stage depends on whether or not women have given birth before and how many times, and the position and size of the baby.

The intensity at the end of the first stage of labor will continue in this pushing phase.

Third Stage of Labor:

Afterbirth:

After the birth of the baby, uterus continues to contract to push out the placenta. The placenta usually delivers about 5 to 15 minutes after the baby arrives.

Fourth Stage of Labor:

Recovery:

Baby is born, the placenta has delivered. Most babies are ready to nurse within a short period after birth. Others wait a little longer. If women are planning to breastfeed. Nursing right after birth will help uterus to contract and will decrease the amount of bleeding.