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STUDY THE EFFICACY OF INTRAUTERINE MISOPROSTOL DURING CESAREAN SECTION WITH OXYTOCIN IN PREVENTION OF PRIMARY PPH

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ABSTRACT

Background: postpartum hemorrhage is one of the most common obstetric maternal complication and is among the three most common etiologies of maternal death worldwide. Objective: to compare the incidence of postpartum hemorrhage in women eligible for elective cesarean section (cs) delivery when using intrauterine misoprostol added to oxytocin versus oxytocin alone. Materials and Methods: This parallel randomized trial study was conducted in the Department of Obstetrics and Gynecology at Tishreen University Hospital, Latakia, during the period between March 2022- March 2023. 200women eligible for elective Delivery were enrolled in the study Before randomization all women received the same preparation after randomization in the study group(100)intrauterine misoprostol was used after placental delivery with oxytocin in the control study (100)the routine oxytocin alone was used Results: the case group included(100)pregnant women (mean age 28,2 ±3.3 years mean gestational age38.8±0.6) and control group included (100)pregnant women (mean age27.9±2.8 ,mean gestational age 38.6±0.8). the difference between the two groups was not statistically significant for each of the pregnant woman age gestational age obstetric history ;pregnancy circumstance Intrauterine misoprostol combined with oxytocin intravenous significantly reduced the estimated intraoperative blood loss, the total blood loss within 24hours postoperative when compared with oxytocin intravenous only the difference was statistically significant Misoprostol use was also associated with increased incidence of nausea vomiting (8% versus 6%), fever (4% versus 1%), shivering (3% versus 1%) decrease incidence of headache (2% versus 4%) but the difference was not statistically significant Conclusion: intrauterine misoprostol (400mg)when added to oxytocin is safe and effective in decreasing the incidence of postpartum hemorrhage(pph)and reducing the amount of postpartum blood loss in case of elective Delivery.

KEYWORDS: Pph. extra uterotoics misoprostol. oxytocin.

INTRODUCTION

Postpartum hemorrhage (pph) has b een defied as greater than 500ml estimated blood loss associated with vaginal delivery or greater than 1000ml estimated blood loss associated with cesarean delivery or blood loss accompanied by signs or symptoms of hypervolemia within 24 hours after the birth process, PPH is categorized as early if it occurs within 24 hours of delivery and late if excessive blood loss occurs at 24 hours or more after delivery (,remains the leading cause of maternal mortality worldwide additional important secondary squealer from hemorrhage exist ad include adult respiratory distress syndrome shock disseminated Intravascular coagulation acute renal failure loss of fertility ad pituitary necrosis (Sheehan syndrome).

The risk of pph is further icreased In the presence of risk factors such as multiple pregacy poly hydramnios, grand multiparty, sever preeclamsia prepartum hemorrhage and obstructed labor angmented labor obesity and anemia.

The world has witnessed reducation in maternal deaths in the past decade .May of the global gains in reducing maternal mortality can be attributed to developments in preventing and treating postpartum hemorrhage (pph).in fact ,the biggest absolute reduction was I maternal deaths due to hemorrhage.

The reality is that most cases are primary PPH and the time from beginning to death is considerably shorter than other major obstetric complications. Two factors have

been identified as significantly affecting the potential for death from PPH (Bazirete et al., 2020). First, the initial hematocrit level of a woman affects her survival rate from PPH (Karoshi and Keith, 2012).

The second factor that has been identified as contributing to mortality rates from PPH has more levers for influence, as it relates to access to a hospital with functioning facilities for the management of PPH, including blood banks and staff trained to diagnose and treat PPH (Panyapin and Deoisres, 2020).

Although effective tools for the prevention and treatment of PPH are available, most are not feasible or available for use in the resource-poor countries, where many births still occur at home with untrained birth attendants (Karoshi and Keith, 2012) misoprostol is another prostaglandin that increases uterine atone and decreases postpartum hemorrhage misoprostol is effective in the treatment of postpartum hemorrhage .it can be administered sublingually orally vaginally and rectally.

Adverse effects after use of misoprostol for pph prevention or treatment may include shivering and fever.

METHODS

Study design A prospective study of a case –control patter conducted in the department of obstetrics and Gynecology at tishreen university Hospital Lattakia during the period between march 2022-march2023 and included 200 pregnant women acceptable for elective cesarean delivery in both the general and private labor wigs.

All pregnant women received oxytocin by intravenous infusion immediately after delivery of the ay four hundred micrograms misoprostol were inserted at fundus uterus after placental delivery In cases group by random assignment.

Inclusion Criteria
1-Age between 18-35years
2-Prmigravida and multiparty
3-gestatioal age >38 weeks

Exclusion
1-factors which interfere with ability of the uterus to contract ; (placenta previa –Abruptio placenta –retained placenta -Amenia <10- Hydramios – multi pregnancy).

2-medical disorders (Arterial hypertension –Gestational diabetes –bleeding ad coagulation disorders –previous PPH-Obvious fibroids)

The data obtained was processed and analyzed usig the statistical package for social sciences (SPSS) versio 20.

Descriptive statistics Quantitative variables with measures of cetraltedecy and measures of dispersion.

Qualitative variables with frequencies ad percentage's.

The following tests were used to study the relationship between the two idepedet groups Idepedet TStudet test to compare the mean of two independent groups. Chi –square or Fisher exact test to study the relationship between qualitive variables .The results are statistically significant with a p-value<0.05.Adoptig the program (IM SPSS Statistics version 20)to calculate statistical coefficients and analyze results.

RESULTS

The research simple included 200 pregnant women candidated for a elective cesarean section in the department of obstetrics and gynecology at Tishreen University Hospital Lattakia, Syria.

The case group included 100 pregnant women (mean age 28.2±3.3 mean gestational age 38.8±0.6 mean Hb 11.8±0.7, mean blood amount 491±37.4).

The control group included 100 pregnant women (mean age 27.9±2.8 -mean gestational age 38.6±0.8 -mean H b 11.1±0.9 mean blood amount 583.4±83.2)

Table (1): Comparison of mean maternal age in the two research groups.

Age (Year)	Case group	Control group	p-value
	28.2±3.3	27.9±2.8	0.2

We notice from the table (1)there are no statistically significant differences between the research groups according to the maternal age.

Table (2): Comparison of mea gestational age in the two research groups.

Gestatioal age	Case group	Control group	P -value
	38.8±0.6	38.6±0.8	0.5

We notice from the table (2)there are no statistically significant differences between the research groups according to the gestatioal age.

Table (3): The distribution of the two research group according to parity.

Ostetric status	Case group	Control group	p-value
Primigravida	15(15%)	13(13%)	0.6
multigravida	85(85%)	87(87%)	

It can b e see from the table 3 that there are no statistically significant differences between the two groups according to the obstetric status.

Table (4): comparing the incidence of uterine bleeding in the two research groups.

Uterine bleeding	Case group	Control group	p-value
Foud	3(3%)	11(11%)	0.03
No-foud	97(97%)	89(89%)	

We notice from the table (4)there are significant differences between the two groups according to the incidence of uterine bleeding.

Table (5): Comparing the amount of uterine bleeding in the two research groups.

The amount of uterine bleeding	Case group	Control group	p-value
	491.2±73.4	583.4±83.2	0.0001

Table 5 shows that there are statistically significant differences between the two research groups according to the amount of uterine bleeding.

Table (6): comparing the change of hemoglobin (before ad after operation) in the two research groups.

Hemoglobin	Case group	Control group	p-value
Before cesarean	12.9±0.9	12.4±1.03	0.2
After cesarean	11.8±0.7	11.1±_0.9	0.01
Change of hemoglobin	1.11±0.22	1.32-±0.14	0.03

As noticed from the previous table (6)there are no statistically significant between the two research groups according to the hemoglobin change before operation, but there are statistically significant between the two groups according to the hemoglobin change after 24 hours post- operation.

Table (7): comparing the change of hematocrit (before and after operation) in the two research groups.

Hematocrit	Case group	Control group	p-value
Before cesarean	36.2±-3.5	34.9±3.1	0.9
After cesarean	34.1±-2.2	31.2±2.8	0.0001
Change of hematocrit	2.1±-1.3	3.7±0.3	0.002

Table (8): The distribution of the two research groups according to need of uterotoic agents.

Need of extra agents	Case group	Control group	p-value
Yes	6(6%)	20(20%)	0.001
NO	94(94%)	80(80%)	

Table (9): The distribution of the two research groups according to need of blood transfusion.

Need of transfusion	Case group	Control group	P –value
Yes	1(1%)	7(7%)	0.04
No	99(99%)	93(93%)	

Table (10): The distributions of the two research group according to side effect.

Side effect	Case group	Control group	p-value
Headache	2(2%)	4(4%)	0.2
Pyrexia	4(4%)	1(1%)	0.1
Shivering	3(3%)	1(1%)	0.8
Vomiting	8(8%)	8(8%)	0.3

DISCUSSION OF THE RESULTS

Misoprostol ids myometrial cells to trigger extreme myomterial contraction that occur at the fundus near the cornu and spread to the body of the uterus leading to tissue removal and decreases postpartum hemorrhage .We figured that inserting that tablets at uterine cornu was quick and easy to repair .It can aid the myometrial cells in there absorption.

This study included 200 women underwent cesarean section divided into two groups.

Control group 100 pregnant women who received intravenous oxytocin (10 IU I 250 ml of normal saline solution over 10 minutes was administered directly after opening the uterus. Case group was give 400 mcg misoprostol plus intravenous oxytocin administered directly after opening the uterus.

In our study the statistical comparison between the two groups shows no significant differences as regards maternal age gravidity parity gestational age. there was no statistically significant differences between the two groups as a distinct indication of CS.

There was statistically significant differences between the two groups regarding loud loss with higher blood loss either intraoperative ;postoperative and overall blood loss on intravenous oxytocin only group than intravenous oxytocic plus intrauterine misoprostol The blood loss was estimated by preoperative hemoglobin level within 24 h postoperative hemoglobin level was measured.

The mathematical calculation In which the lost blood intraoperative was estimated by measuring the hematocrit level immediately after hospital admission and one hour postoperative in recovery room.

The amount of intraoperative blood loss in control group was (583.4±83.2, Vs (491.2±73.4) in case grou.

In Table (6) showed on difference in the pre –and post – delivery hemoglobin between two groups.

The Mean hemoglobin for the case group was (11.8±0.7), for the control group was (11.1±0.9) In the oxytocin group there were more women who needed additional oxytocin who had reported blood loss of more than 1000ml.

In our study there was statistical significantly decrease in HCT postoperative in the two studied groups. there was more loss In postoperative Hct value of oxytocin group (31.2-±2.8) than intrauterine misoprostol plus oxytocin (34.1±2.2) p –value (0.0001).

Our study showed statistically significant difference between the two groups according to extra ecbolic, In the table (8)revealed that case group required extra agents (6%) while control group was (20%) with p-value(0.001).

There was statistically significant between the two studied groups according to need of blood transfusion

The case group was (1%) while control group (7%) with p-value (0.04)

In our study, nausea and vomiting were the produced side effects associated with misoprostol plus oxytocin group The number of women who experienced nausea and vomiting was higher in the misoprostol group (8)cases representing(8%) of the misoprostol group vs. (6) cases only representing (6%) of the oxytocin group.

Various study have been doe to know the role of misoprostol in preventing the blood loss during ad after cesarean section Dose of misoprostol in various studies has raged from 400 to 800 mcg .Alalafy compared 800 mcg with 10 IU oxytocin on 300 patients.

Alalfy et al. (2018) showed that fever was encountered in one case (0.67%) of the study group and two cases (1.33%) of the control group, (p = 0.566). Nausea & vomiting was encountered in three cases (2.00%) of the study group and five cases (3.33%) of the control group, (p = 0.475). Shivering was encountered in one case (0.67%) of the study group and two cases (1.33%) of the control group, (p = 0.566).

Rasri et al. (2018) showed that the estimated mean blood loss during CS was significantly lower among women receiving intrauterine misoprostol 800mg (442.59± 151.33ml) than among those receiving 10 IU oxytocin (591±287.97.ml) (p-value <0.001)soon after delivery of the neonate.

The concept of using intrauterine misoprostol for prevention of PPH was mentioned by Diaz et al However they used 800 mcg in their study on 200 patients.

In the current study the dose 400 mcg among 200 patients The results of Diaz et al study are in agreement with the current study as misoprostol diminished the

necessity of additional uterotoics and the reduction in hemoglobin and hematocrit Misoprostol provides many benefits over oxytocin or ergometrie including that it has along shelf life ,is safe at room temperature is light sensitive needs no special storage or transport requirements ,is orally active and can b e give to patients with hypertension.

CONCLUSION

Intrauterine misoprostol (400) mcg who added to oxytocin is effective in decreasing the incidence of pph and reducing the amount of postpartum blood loss.

Also it reduced the need for blood transfusion the extra ecolics when compared to oxytocin alone besides it is as safe as oxytocin alone.

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