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ORIGINAL ARTICLE

Efficacy of Preoperative Misoprostal in Reducing Hemorrhage during Abdominal Myomectomy

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ABSTRACT

Objective: The aim of this study is to determine the efficacy of preoperative misoprostal in reducing hemorrhage during abdominal myomectomy.

Study Design: Prospective comparative randomized double blinded

Place and Duration: Conducted at DHQ Zanana hospital Dera Ismail Khan for one year duration from January 2019 to December 2019.

Methods: Total 100 patients underwent abdominal myomectomy were presented in this study. Patients were aged between 18-45 years of age. Patients' detailed demographics including age, body mass index and parity were recorded after taking informed written consent. Patients were categorized equally into two groups, I and II. Group I had 50 patients and received single dose 400 micrograms of misoprostol transrectally one hour preoperatively and group II had 50 patients and received 2-tablets of placebo preoperatively. Outcomes intraoperative blood loss, blood transfusion, hysterectomy and complications among both groups were assessed. Complete data was analyzed by SPSS 23.0 version.

Results: Mean age of the patients was 32.16±9.44 with mean BMI 26.07±10.44 kg/m^2. There were no significantly difference among age and body mass among both groups. 60 Patients had 0 parity, 30 patients had parity 1 and the rest were had parity 2. Mean pre-operative hemoglobin in group I was 13.64±8.55 and post-operative was 9.88±8.55 and in group II mean pre-operative hemoglobin was 13.55±8.55 and post-operative was 9.12±5.55. Mean intraoperative blood loss in group I was 388.17±37.18 ml and in group II was 501.16±17.64 ml. Post-operatively blood transfusion in group I was among 2(4%) cases and 3 (6%) in group II. Mean hospital stay in group II was greater as compared to group I. Nausea, vomiting and shivering were the complications found in this study.

Conclusion: We concluded in this study that the use ofmisoprostol preoperatively during abdominal myomectomy was effective safe and useful in reduction of intraoperative blood loss and post-operatively blood transfusion among patients.

Keywords: Abdominal myomectomy, Misoprostol, Placebo, Intraoperative, Blood loss

INTRODUCTION

Uterotones such as oxytocin, ergometrin, and misoprostol are usually supplied routinely after the fetus is given to women in obstetric surgery[1] and may not diminish intra-operating blood loss (part of PPH). This intraoperative bleeding might cause maternal morbidity and mortality significantly[2]. Moreover, it will be essential for the patient to survive in a condition of heavy bleeding soon after birth the period between uterotonic injection and starting of action[2]. A key contribution to blood-thinning[3],[4],[5] is placental anomalies. Placental abruption, placental previa, placenta attached placenta (accrete, increta and percreta), and placenta retained are typical anomalies that can be found in pregnancy. For example, 36% of pregnancy-related deaths owing to blood in one series were attributable to such abnormalities[5],[6].

The operation of such placenta anomalies is known to be linked to considerable, life-threatening, intra-operative bleeding[7]. Lifesaving can be achieved with the use of an extremely powerful uterotonic such as misoprostol at this vital period. Pathological adhesion of the placenta to the uterine surface may make placental priorities complicated and placenta retained. It is a known cause for significant bloody blood flow and common evidence of hysterectomy of the peripartum [1], [7]. Placenta retained is a third phase of labor problem. The theatrical removal of placenta is usually carried out by individuals with retained placenta. The disease is often linked to obstetric bleeding [1].

Misoprostol's debut has transformed obstetrics. The prostaglandin is a synthetic homologue of E1. The tablet is available in several ways and has a wide range of advantages: room temperature stability, long standing, low cost, and multiple administrative channels [4]. Misoprostol is quickly absorbed after administration [4]. It is common for the prevention and treatment of postpartum hemorrhage (400 –1000µg)[3],[4], and for cervical maturation and laboratory induction (25–50 µg 6 h). High dose diarrhea, abdomen discomfort and heat are typical side effects[4]. When taken at higher doses. These adverse consequences are less likely to occur locally (vaginally or rectally).

The majority of misoprostol studies in obstetrical bleeding prophylaxis have concentrated on its postpartum use. When women need a considerable volume of intrapartum blood, they often need to lose. Placenta

malformations may be essential if the potential benefit of these regularly used uterotons is to reduce maternal morbidity and mortality. Because they are the predisposing factor for intrapartal hemorrhage.

MATERIAL AND METHODS

This prospective comparative study was conducted at DHQ Zanana hospital Dera Ismail Khan for one year duration from January 2019 to December 2019and comprised of 100 patients. Patients' detailed demographics were recorded after taking informed written consent. Patients had preterm delivery, with multiple pregnancies, antepartum hemorrhage and those did not give any consent were excluded from this study.

Patients were aged between 18-45 years of age. Patients' detailed demographics age, body mass index and parity were recorded after taking informed written consent. Patients were categorized equally into two groups, I and II. Group I had 50 patients and received single dose 400 micrograms of misoprostol transrectally one hour preoperatively and group II had 50 patients and received 2-tablets of placebo preoperatively. Outcomes intraoperative blood loss, blood transfusion, hysterectomy and complications among both groups were assessed. Complete data was analyzed by SPSS 23.0 version. Categorical variables were assessed by frequency and percentage.

RESULTS

Mean age of the patients was 32.16±9.44 with mean BMI 26.07±10.44 kg/m^2. There were no significantly difference among age and body mass among both groups. 60 Patients had 0 parity, 30 patients had parity 1 and the rest were had parity 2. 55 (55%) patients were educated and 54 (54%) were from urban area.(Table 1)

Table 1: Baseline details demographics on enrolled cases

Variables	Group I	Group II
Mean age	32.16±9.44	32.48±7.44
Mean BMI	26.07±10.44	26.55±9.44
Parity		
0	30 (30%)	30 (30%)
1	15 (15%)	15 (15%)
2	5 (5%)	5 (5%)
Education Status		
Educated	27 (27%)	28 (28%)
Uneducated	23 (23%)	22 (22%)
Residency		
Urban	27 (27%)	27 (27%)
Rural	23 (23%)	23 (23%)

There was no any significantly difference in uterine size among both groups.

Mean pre-operative hemoglobin in group I was 13.64±8.55 and post-operative was 9.88±8.55 and in group II mean pre-operative hemoglobin was 13.55±8.55 and post-operative was 9.12±5.55.(Table 2)

Table 2: Comparison of hemoglobin among both groups

Variables	Group I	Group II
Hemoglobin		
Pre-operative	13.64±8.55	13.55±8.55
Post-operative	9.88±8.55	9.12±5.55

Mean intraoperative blood loss in group I was 388.17±37.18 ml and in group II was 501.16±17.64 ml. Post-operatively blood transfusion in group I was among 2(4%) cases and 3 (6%) in group II. Mean hospital stay in group II was greater as compared to group I. (Table 3)

Table 3: Comparison of intraoperative blood loss and postoperative blood transfusion among both groups

Variables	Group I	Group II
Intra-operative blood loss (ml)	388.17±37.18	501.16±17.64
Blood Transfusion		
Yes	2 (4%)	3 (6%)
No	48 (96%)	47 (94%)
Total	50	50

Table 4: Nausea, vomiting and shivering were the complications found in this study.

Variables	Group I	Group II
Nausea		
Yes	2 (4%)	1 (2%)
No	48 (96%)	49 (98%)
Vomiting		
Yes	1 (2%)	2 (4%)
No	49 (98%)	48 (96%)
Shivering		
Yes	3 (6%)	1 (2%)
No	47 (94%)	48 (96%)

DISCUSSION

Myomectomy is a symptom uterine fibroid therapy that maintains fertility. An uncontrolled interoperational bleeding with life-threatening complications is the biggest operative risk that makes the surgery even more dangerous than the hysterectomy and involves an expert surgeon. The main approach to uterine leiomyome management remains conserve surgery, and laparotomy myomectomy is still the most widely applied method in many centers around the World. Still, bleeding is frequently problematic and can lead to intraoperative hypovolematic shock, postoperative anemia, pelvic diseases and infertility adhesions. Several therapies to minimize myomectomy blood, including ergotone (ergometrine), misoprostol, hormonal tourniquet, and uterine artery dissection, have been been out. Mechanical tourniquet peri-cervical. [8]

The strength of the study is that preoperative misoprostol has been compared to placebo, which is rare in the literature, the randomized design and the objective blood loss measurements. The limitation of the sample size and the study area includes. In this study 100 patients were presented with mean age 32.16±9.44. 55 (55%) patients were educated and 54 (54%) were from urban area. Our findings were comparable to the previous study.[9] In this study 400 micrograms of misoprostol transrectally one hour preoperatively were given to 50 patients and 2-tablets of placebo were given to other group of 50 patients. We found reduction in hemoglobin from 13.64±8.55 to 9.88±8.55 in group I and in group II mean pre-operative hemoglobin was 13.55±8.55 and post-operative was 9.12±5.55.[10]

Misoprostol has been reported to be effective in reducing blood loss in myomectomy following comparison with placebo [11-13] or other agents.[14] In current study mean blood loss in group I was 388.17±37.18 ml and in

group II was 501.16±17.64 ml. Several trials employed misoprostol in myomectomy with varying dose regimes. A trial conducted three hours before surgery using 200 mg of vaginally given misoprostol compared to 400 mg of vaginal misoprostol provided an hour before surgery. The influence of the dose and time interval, from misoprostol to the start of surgery on blood loss, is raised in a future research. [12] In our study post-operatively blood transfusion among both group was (4% and 6%). These results were comparable to the previous researches in which no or less blood transfusion was presented. [12,15] Celik H and Spamaz E 2003 also observed that there was hence a significantly lesser demand for blood transfusion in the study group. In the current study, however, the requirement for blood transfusion in the study group was lower but it did not reach statistically significant values and future studies with larger numbers could be required to validate the findings and to give significant values a chance to arise. In the current investigation, the post-op hemoglobin and hematocrit levels were significantly higher in the group study, confirming the effect of misoprostol during myomectomy on blood loss reduction and significantly reduced difference between pre- and post-operative hemoglobin values. [16]

These results were likewise consistent with the published results (Celik and Spamaz; 2003). [16] Although this study failed to compare with other intraoperative bleeding procedures, there were some advantages of misoprostol over some of them. Compared with preoperative GnRH use analogs, which is the most popular way of minimizing bleeding in myomectomy, the benefit is in the cost and frequency of administration. The GnRH analog bleeding reduction is achieved only 2-4 months after lengthy use (Lethabie A et al., 2001)[17]. Analog GnRH therapy is very costly. Another issue is that treatment for GnRH agonists could make removal of fibroids harder (Lethaby A et al., 2002). [18]

In our study less hospital stay was observed in misoprostal group as compared to placebo while complication were found greater in misoprostal group. In short, this study demonstrates that blood loss reduction in peri-operative vaginal misoprostol and placebo is comparably beneficial during abdominal myomectomy.

CONCLUSION

We concluded in this study that the use ofmisoprostol preoperatively during abdominal myomectomy was effective safe and useful in reduction of intraoperative blood loss and post-operatively blood transfusion among patients.

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