

PRE-OPERATIVE USE OF MISOPROSTOL IN MAJOR GYNAECOLOGICAL SURGERIES

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ABSTRACT

Objective: To study the effect of preoperative use of misoprostol on reducing blood loss in Major gynaecological surgeries.

Material and Methods: This was a hospital based interventional study conducted in the department of Obstetrics and Gynaecology, Khyber Teaching Hospital, Peshawar, Pakistan from March 2010 to November 2012. A total of 100 cases were studied in this comparative trial. Randomly selected 50 patients had preoperative per rectal insertion of tablet misoprostol 400 micrograms 20 minutes prior to surgery and were compared to 50 other patients in whom no misoprostol was used before or during surgery. All of these were elective gynaecological surgeries including hysterectomies and myomectomies etc. Data was analyzed using SPSS.

Results: A total of 100 cases were studied, in 50 patients, preoperative insertion of misoprostol 400 micrograms was carried out and 50 cases without its use were studied for comparison. Main outcome measures were approximate per-operative blood loss, need for transfusion and post op Hb (gm/dl). In the first group without misoprostol mean blood loss was $370\text{ml} \pm 170.233$ SD and mean post-op Hb was 10.34 ± 0.4102 SD. In the group with misoprostol the mean blood loss was $310\text{cc} \pm 197.284$ SD and mean postoperative Hb was 10.761 ± 0.4998 SD. Six percent of misoprostol group and 28% of no misoprostol needed transfusion.

Conclusion: More studies are needed to establish the benefits of preoperative misoprostol before routine use of this drug is recommended.

Key Words: Misoprostol, Preoperative, Blood Loss, Transfusion.

INTRODUCTION

Misoprostol, a prostaglandin E1 analogue has been widely used in clinical practice of Obstetrics & Gynaecology. It stimulates uterine contractions and this increase in myometrial contractions will lead to contraction of the vessels supplying the uterus and leiomyoma¹. Abdominal hysterectomies are performed for various indications like polymenorrhagia, endometrial Hyperplasia, menorrhagia and fibroid uterus. Uterine leiomyoma is the commonest benign tumour affecting women in reproductive age around 20-50% can cause symptoms that warrant treatment. Different medical therapies like Gonadotrophin Releasing Hormone (GnRH) analogues, mifepristone, progestins and androgens have been tried. Total abdominal hysterectomy is the definitive treatment. Significant operative blood loss that required blood transfusion is not uncommonly encountered after Trans Abdominal Hystrectomy (TAH).

Misoprostol, a prostaglandin E1 analogue, apparently reduces to uterine blood flow, increases Myometrial contractions in uterine atonic postpartum hemorrhage and reduces blood loss During Caesarean section and myomectomy.^{1,2} Use of misoprostol appeared to be beneficial in reducing blood loss during Laproscopic Assisted Vaginal Hystrectomy (LAVH) for large uterine Myomas.

MATERIALS AND METHODS

This was a hospital based interventional study. The study was conducted in the department of Obst & Gynae, Khyber Teaching Hospital from March 2010 to November 2012. A total of 100 cases were studied in this comparative trial. Randomly selected 50 patients had preoperative use of tablet misoprostol 400 mcg (2 tablets) 20 minutes prior to start of surgery and these were compared to 50 other patients in whom no misoprostol was used before or during surgery. Out of these 50 cases in each group 25 were abdominal hysterectomies and 25 were myomectomies. Blood loss was measured by reading the level in suction bottle & using a standard 500 c.c kidney tray for blood and clots. The inclusion criteria was Symptomatic woman undergoing total abdominal hysterectomy and myomectomy due to various Benign gynaecological

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diseases and exclusion criteria was Any contraindication to misoprostol, mitral stenosis, severe asthma, severe hypertension, known Allergy to prostaglandin or a known history of pelvic or ovarian endometriosis. Pre-operative investigations including Hb gm%, urine R/E, random blood sugar, clotting profile, HBS Ag, HCV screen, X-Ray chest, ECG. Post-operative Hb was done on second postoperative day (after 48 hrs –for all patients). Blood transfusion during surgery was recorded on proforma. Data was analyzed by using SPSS.

RESULTS

A total of 100 cases were studied. In 50 patients, preoperative per rectal insertion of misoprostol 400 mcg was carried out and 50 cases without its use were studied for comparison. The main outcome measures were approximate per operative blood loss, need for transfusion during surgery and post op Hb (gm/dl). In the first group without misoprostol mean blood loss was 370ml \pm 170.233 SD mean post-op Hb was 10.34 \pm 0.4102 SD. In the group with misoprostol the mean blood loss was 310cc \pm 197.284 SD and mean postoperative Hb was 10.761 \pm 0.4998 SD. Six percent of misoprostol group and 28% of no misoprostol needed transfusion.

For blood transfusion frequency 47(94%) patients in the group with use of misoprostol did not need any Transfusion, whereas 3 (6%) patients needed transfusion in the other group. In the group where no misoprostol was used 36 (72%) patients needed no transfusion and 14 (28%) patients needed transfusion. Out of the 14 needing transfusion 9 were myomectomies & 5 were hysterectomies. Out of these 14, 11 needed 1 pint of blood and 3 needed 2 transfusions so in the patients needing transfusion 6% of misoprostol group and 28% of the group with no misoprostol needed transfusion. P value = 0.0893. By conventional criteria the difference is considered to be not quite significant. Statistically so we believe that larger multi centered studies should be conducted.

DISCUSSION

Heavy menstrual flow and anaemia are common symptoms of patients with myomatous uterus or in Dysfunctional Uterine Bleeding (DUB). Reducing the blood loss during surgery decreases the need for blood transfusion and decreases postoperative morbidity. The major effect of misoprostol is on the myometrium and the cervix. Increased uterine contractility directly affects uterine vasculature that stems from both uterine artery and utero-ovarian anastomosis, decreasing blood supply to the uterus and myomas³.

Decreased blood volume in the uterus and constricted uterine vasculature due to uterine contraction and vasoconstrictive effect of misoprostol results in reducing intra operative blood loss⁴. In our

study the mean blood loss for cases without misoprostol was 370ml and mean postoperative Hb was 10.34 gm/dl. Mean blood loss for group with misoprostol was 310cc (with S.D 197.284) and mean postoperative Hb was 10.76 gm/dl. Study by Celik et al has shown that preoperative misoprostol reduces intraoperative blood loss and need for blood transfusion¹. This use of misoprostol as an effective method to decrease blood loss during myomectomy is also noted in the Cochrane database⁵. In our study administration of misoprostol was done by rectal route. This administration by rectal route may allow the drug to be absorbed without and may avoid any adverse effect of oral route and has a longer half-life than oral route^{6,7}.

In our study 28% of patients in group without misoprostol needed transfusion compared to 6% in group where misoprostol was used. Comparable results are shown by Cheinarong et al⁸, Chaij et al⁹ and kalogiamedes¹⁰ where there was decreased blood loss and hence lesser transfusions. Other studies of American surveillance of hysterectomies¹¹ and Carter JE¹² show varying results. Also Ishrat S et al from Dhaka also state that single preoperative dose of misoprostol is a reliable method for reducing intra operative blood loss and need for transfusion¹³. Becherd DE¹⁴ and Goldberg et al¹⁵ have used of misoprostol in gynaecological operations and found it useful like in our results.

CONCLUSION

More studies are needed to establish the benefits of misoprostol when used in Myomectomy or hysterectomy procedures before routine use of this drug is recommended.

RECOMMENDATIONS

We found misoprostol to be an easy and cost effective agent to be used but our results were evaluated through SPSS version 10 and P value was 0.0893. By conventional criteria the differences in our study between the two groups was considered to be not quite significant statistically, so we believe that larger multicenter trials should be conducted.

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