International Scholars Journals

International Journal of Obstetrics and Gynecology ISSN 2736-1594, Vol. 10 (7), pp. 001-004, July, 2022. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

The effect of adding hyoscine to vaginal misoprostol on shortening the time of abortion induction

Ezzatalsadat Haji Seid Javadi[1], Samira Ghaffari[1], Farideh Movahed[1]*, Amir Javadi[1] and Omid Mashrabi[2]

[1]Department of Obstetrics and gynecology, Qazvin University of Medical Sciences, Qazvin, Iran.
[2]General Medicine, Women's Reproductive Health Research Center, Faculty of Medicine, Tabriz University of medical sciences, Tabriz, Iran.

Accepted 12 November, 2021

Induced abortion is the termination of pregnancy by medical or surgical methods before the fetus' viability. Available evidences show that due to spasmolytic effects, use of Hyoscine with Misoprostol may reduce the pain during abortion induction. The aim of this study is to evaluate the effect of Misoprostol in combination with Hyoscine compared with Misoprostol alone in reducing the duration of abortion induction. In a clinical trial at the Department of Obstetrics and Gynecology, Qazvin University of Medical Sciences on 126 pregnant women with gestational age below 20 weeks elected for abortion, the effect of Misoprostol in combination with Hyoscine compared with Misoprostol alone was evaluated in reducing the duration of abortion induction. The mean duration of abortion induction in Misoprostol with Hyoscine represented statistically significant decrease compared with Misoprostol (653.38 ± 80.386 min, with 726.29 ± 64.56 min) (P ≤ 0.001). There was no significant difference in demographic characteristics, including maternal age, gestational age, gravidity, parity and history of abortion between the two study groups, and the two groups were homogeneous. Duration of abortion induction (p < 0.001), the rate of vaginal bleeding (p < 0.001), and the rate of hemoglobin deficiency (p = 0.002) in the group receiving Misoprostol suppositories and Hyoscine was significantly lower than in the group receiving Misoprostol suppositories alone. The need for analgesics in the group receiving Misoprostol suppositories and Hyoscine was significantly less than in the group receiving Misoprostol suppositories alone (p < 0.001). Finally, results of this study showed that adding 20 mg Hyoscine intra venous to vaginal Misoprostol is effective in significantly reducing the duration of the abortion induction, getting less pain killers, less vaginal bleeding and less decrease in hemoglobin changes.

Key words: Vaginal misoprostol, hyoscine, induction of abortion.

INTRODUCTION

Induced abortion is the termination of pregnancy by medical or surgical methods before the fetus' viability (Cunningham et al., 2010). Induce abortion in pregnant women is done due to medical causes, social problems or fetal disorders. Currently, severe anatomical, metabolic or rational abnormalities are the most common indications for induced abortion (Cunningham et al., 2010). Failure of abortion induction in presence of unripe cervix may lead to surgical termination of pregnancy (Alfirevic et al., 2009); therefore, the use of prostaglandins was considered to be helpful for cervical ripening. E_1 and E_2 prostaglandins are usable for cervical maturation. Type E_1 (Misoprostol) is more clinical applicable (Cunningham et al., 2010).

Side effects of prostaglandins (nausea and vomiting, diarrhea and fever) are an obstructive element of their use (Cunningham et al., 2010). Available evidences show that due to spasmolytic effects, use of Hyoscine with Misoprostol may reduce the pain during abortion induction (Baracho and Kamat, 1982; Tehranian, 2010). Hyoscine with Misoprostol may also reduce duration of

*Corresponding author. E-mail: drmovahed@yahoo.com. Tel: +98-9121820015.

Table 1. Comparing demographic characteristics of patients between two groups.

Parameter		Group		P
		Case	Control	
Age		25.97±5.95	25.67±5.26	0.99
Gravidity	1	15 (23.4%)	8 (12.7%)	0.283
	2	20 (31.3%)	18 (28.6%)	
	3	14 (21.9%)	24 (38.1%)	
	4	12 (18.8%)	10 (15.9%)	
	5	3 (4.7%)	3 (4.8%)	
Abortion frequency	0	39 (60.9%)	38 (60.3%)	0.893
	1	23 (35.9%)	22 (34.9%)	
	2	2 (3.1%)	3 (4.8%)	
Parity	0	21 (33.3%)	11 (17.5%)	0.124
	1	25 (39.7%)	29 (46%)	
	2	9 (14.3%)	18 (28.6%)	
	3	7 (11.1%)	4 (6.3%)	
	4	1 (1.6%)	1 (1.6%)	
Gestational age (day)		69.69±14.94	71.05±9.46	0.541

abortion induction due to increased cervical dilatation (Baracho and Kamat, 1982; Tehranian, 2010). According to prior studies, due to its spasmolytic effect and effectiveness on cervical dilatation, Hyoscine was effective in reducing the active labor duration (Sirohiwal et al., 2005; Samuels et al., 2007). Use of Hyoscine with doses up to 30 mg, has no significant side effects (Corsen, 1983). The aim of this study was to evaluate the effect of Misoprostol in combination with Hyoscine, compared with Misoprostol alone in reducing the duration of abortion induction.

MATERIALS AND METHODS

In a clinical trial at the Department of Obstetrics and Gynecology, Qazvin University of Medical Sciences on 126 pregnant women with gestational age below 20 weeks elected for abortion, the effect of Misoprostol in combination with Hyoscine, compared with Misoprostol alone, was evaluated in reducing the duration of abortion induction. A total of 126 pregnant women with gestational age below 20 weeks elected for abortion due to maternal or fetal problems were selected according to the inclusion/exclusion criteria, and randomized into two groups. Inclusion criteria included null pregnancy, forgotten abortion, and fetal malformations, and exclusion criteria were severe anemia, coagulopathy, use of anticoagulant drugs, active hepatic disease, cardiovascular disease, uncontrolled convulsion, history of adrenal disease and having intrauterine device (IUD), and history of mother's allergy to prostaglandin and Hyoscine.

After obtaining patients' consent, they were randomly divided into two groups. The first group underwent vaginal Misoprostol regimen (400 mg/6 h) with 20 mg IV Hyoscine single dose, with the first dose of Misoprostol, and the second group got vaginal Misoprostol regimen (400 mg/6 h) with 1 cc IV normal saline. Patients were hospitalized and their vital signs were assessed every four hours. Patients' symptoms including nausea, vomiting, fever, and vaginal bleeding was recorded. Vaginal examination was performed at the time of putting the first suppository, followed by vaginal bleeding.

RESULTS

In this study, there was no significant difference in demographic characteristics, including maternal age, gestational age, gravidity, parity and history of abortion between the two study groups, and the two groups were homogeneous. These parameters are shown in Table 1. Comparison duration of abortion induction and admitting duration between two groups are shown in Table 2. Side effects of treatment between two groups are shown in Table 3. Duration of abortion induction ($p < 0.001$) (Figure 1), the rate of vaginal bleeding ($p < 0.001$), and the rate of hemoglobin deficiency ($p = 0.002$) in the group receiving Misoprostol suppositories and Hyoscine was significantly lower than in the group receiving Misoprostol suppositories alone. The need for analgesics in the group receiving Misoprostol suppositories and Hyoscine was significantly less than in the group receiving Misoprostol suppositories alone ($p < 0.001$).

DISCUSSION

The results of this study show that in the group receiving

Table 2. Comparing duration of abortion induction and admitting duration between two groups.

Parameter	Group		P
	Case	Control	
Duration of abortion induction (minute)	653.38±80.38	726.29±64.56	≤0.001
admitting duration (day)	103±0.17	1.02±0.12	1

Table 3. Side effects of treatment between two groups.

Parameter		Group		P
		Case	Control	
Nausea		11 (17.2%)	9 (14.3%)	0.808
Need to narcotic		8 (12.7%)	32 (50.8%)	≤0.001
Vaginal bleeding (Sanitary napkin count)	1	31 (48.4%)	2 (302%)	≤0.001
	2	29 (45.3%)	53 (84.1%)	
	3	4 (6.3%)	8 (12.7%)	
Hemoglobin change		0.4391±0.23612	0.5597±0.24858	0.002

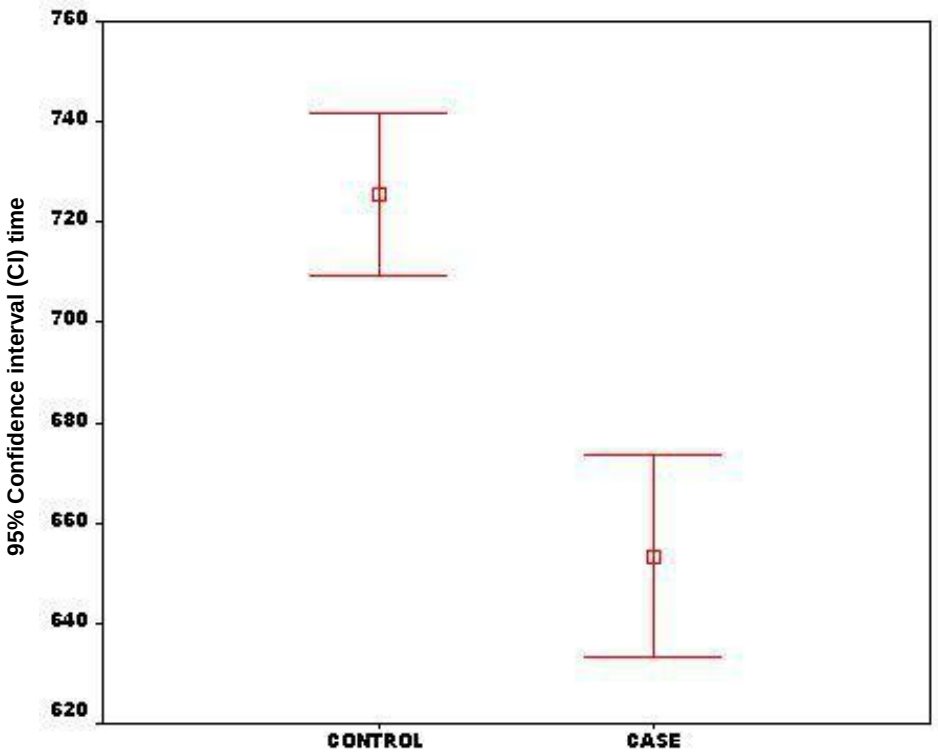

Figure 1. Distribution of abortion induction time between two groups

Misoprostol suppositories and Hyoscine, the mean duration of abortion induction was significantly shorter than in the group receiving Misoprostol suppositories alone (653.38 ± 80.38 versus 726.29 ± 64.56 min) ($p \leq 0.001$). Hyoscine is a muscarinic antagonist drug that causes loss of cervical spasm (Bhattacharya and Joshi, 1985), and may help cervical dilatation affecting uterine cervical neural system (Baracho and Kamat, 1982).

Vagal stimulation leads to increased spasms in the lower uterine segment and the cervix, and Hyoscine, as a kind of parasympatholytic drug, helps cervical dilatation affecting the vagus (Baracho and Kamat, 1982). Thus, regarding the effects of Hyoscine on the cervix, it may reduce the duration of abortion induction in the group receiving Hyoscine.

Tewari et al. (2003) demonstrated that administration of 40 mg IV Hyoscine in two divided doses reduced the mean duration of labor by five hours and twelve minutes in the group receiving hyoscine compared with the control group. Battacharya et al. (1985) studied the effect of 20 mg IM Hyoscine in the active phase of labor in 10 prim gravid women and concluded that the mean duration of labor is reduced by three hours and 40 minutes. In a study by Samel et al. (1998) and Samuels et al. (2007), IV administration of 20 mg Hyoscine had also led to shorter duration of labor.

In our study, as well as the results of these studies, administration of Hyoscine led to reduced duration of induction abortion in patients under study. In terms of the need for analgesics, the intervention group than the control group had significantly less need for analgesics (12.7 versus 50.8%) ($p \leq 0.001$). In the study by Tehranian (2010), pain score was lower in the intervention group than in the control group, but this difference was not statistically significant.

Aggarwal et al. (2008) demonstrated that IV Hyoscine relieves the pain by 36% during labor. Perhaps one of the reasons for differences among studies is the severity of the pain that patients can tolerate, and the pain threshold varies in different individuals. In our study, rate of nausea and vomiting in the intervention group was lower than in the control group, but this difference was not statistically significant. The rate of vaginal bleeding in terms of the number of sanitary pads used in our intervention group was significantly lower than in the control group ($p \leq 0.001$) and no fever and diarrhea were observed in any patient. Mean hemoglobin changes before and 6 h after labor were 0.4391 ± 0.23 in the intervention group and 0.5597 ± 0.24 in the control group; that in the intervention group was significantly lower than in the control group ($p = 0.002$)

Conclusion

Results of this study showed that compared with vaginal Misoprostol, IV administration of 20 mg Hyoscine with 400 µg vaginal Misoprostol significantly reduces duration of abortion induction, the need for analgesics, vaginal bleeding and drop in blood hemoglobin levels. Therefore, further studies are recommended to be conducted with larger sample size to investigate this efficiency.

REFERENCES

Aggarwal P, Zutshi V, Batra S(2008). Role of hyosine N- butyl bromide (HBB, buscopan) as labor analgesic. Indian. J. Med. Sci. 62(5):179-184.

Alfirevic Z, Kelly AJ, Dowswell T (2009). Intravenous oxytocin alone for cervical ripening and induction of labour. Cochrane. Database. Syst. Rev. 7(4):CD003246.

Baracho HM, Kamat JR (1982). Buscopan in acceleration of labor. J. Obstet. Gynecol. Ind. 34:509-12.

Bhattacharya P, Joshi SG (1985). Acceleration of intramuscular Buscopan injection. J. Obstet. Gynecol. Ind. 35:1014-1017.

Corsen G (1983). A study of the use and mode of action of the antispasmodic drug Buscopan in gynecology and obstetrics. Med. Klin. 48:2186-2188.

Cunningham G, Leveno KJ,Bloom SL, Hauth JC, Gilstrap LC, Wenstrom KD(2010). William's Obstetrics, 23nd ed. McGraw-Hill Professional, Philadelphia pp.297-306.

Samel S, Gupta U, Wable M (1998). Buscopan (Hyscine –N- Butyl Bromide) in acceleration of labour. Indian Med. Gaz. 132:8-10.

Samuels LA, Christie L, Roberts- Gittens B, Fletcher H, Federick J (2007). The effect of hyoscinebutylbromide on the first stage of labour in term pregnancies. BJOG 114(12):1542-1546

Samuels LA, Christie L, Roberts-Gittens B, Fletcher H, Frederick J (2007). The effect of hyoscine butylbromide on the first stage of labour in term pregnancies. BJOG 114(12):1542-1546.

Sirohiwal D, Dahiya K, De M (2005). Efficacy of hyoscine-N-butyl bromide (Buscopan) suppositories as a cervical spasmolytic agent in labour. Aust. N. Z. J. Obstet. Gynaecol. 45(2):128-129.

Tehranian A (2010).The effect of adding hyoscine to vaginal misoprostol on abortion induction success rate. Tehran. University. Med. J. 68(4):220-225

Tewari K, Jabeen R, Sabzposh MA, Rabbani T (2003). Comparison of Hyoscine – Butylbromide and valethamate Bromide in shortening the duration of labour. Ind. Med. Gaz. 137:15-19.