ISSN Print: 2664-892X
ISSN Online: 2664-8938
IJGR 2024; 6(1): 37-42
www.gynecologyjournal.net
Received: 08-08-2024
Accepted: 08-09-2024

Shaimaa Maan Hussein Ali
Specialist, Department of Obstetrics and Gynecology, Tikrit University - College of Medicine, Tikrit, Salahaldeen Governorate, Iraq

Masryiah Rashad Hussein
HOD, Department of Obstetrics and Gynecology, Tikrit University-College of Medicine, Tikrit, Salahaldeen Governorate, Iraq

Corresponding Author:
Shaimaa Maan Hussein Ali
Specialist, Department of Obstetrics and Gynecology, Tikrit University - College of Medicine, Tikrit, Salahaldeen Governorate, Iraq

Comparative analysis of misoprostol and herbal extract of primrose in cervical ripening for term pregnancy labor induction in Tikrit teaching hospital for 2023-2024

Shaimaa Maan Hussein Ali and Masryiah Rashad Hussein

DOI: https://doi.org/10.33545/2664892X.2024.v6.i1a.23

Abstract
This is a single-blind randomized clinical trial with three parallel groups at a ratio of 1:1. carried out in Tikrit Teaching Hospital from the 1st October 2023 to 30th June 2024. A total of 90 pregnant women met the inclusion criteria. After determining their bishop scores, envelopes were used to randomly divide the patients into an intervention evening primrose oil Group 1, control (Misoprostol) Group 2, combined primrose oil and Misoprostol Group 3. To prepare the cervix, each patient in the control group (n = 30) received a 25 µg Misoprostol tablet, and each patient in the intervention group (n = 30) received 1,000 mg Pearl of primrose oil that pierced by a sterilized needle, Group 3 received combined 1,000 mg Pearl of primrose oil and25 µg Misoprostol tablet, which was administered vaginally by a researcher. The average Cervical preparation time to induction of labor (hours) was 16.3±2.6, 21.9±1.5, and 16.8±2.1, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. Patients taking oxytocin found among 9 (30%), 15 (50%), and 8 (26.7%) among misoprostol, primrose oil, and misoprostol + primrose groups, respectively (half of the patient receiving primrose oil need oxytocin), this relation was statistically significant. The average Duration of oxytocin use was, 4±1.09, 6.8±1.1 and 3.4±0.8 among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. One dose was needed only in 2 (6.7%) of Misoprostol group and 4 (13.3%) of Misoprostol + primrose oil group, while none of the primrose oil group responded on 1 dose.

Keywords: Misoprostol and primrose in labour induction in Tikrit, labour induction with misoprostol and primrose

Introduction
Stimulation of labor, despite an unfavorable cervix, will lead to prolongation of the labor phase, excretion of meconium, increased chances for cesarean section, and fetal asphyxia [1]. Cervical preparation is performed by mechanical and medical methods, and causes softening, increased effacement, and dilatation of the cervix, leading to deformation of the cervix from enzymes that break down collagen fibers and increase interstitial fluid [2]. Various methods for cervical preparation are used before induction of labor to improve the probability of a successful induction [3]. Mechanical methods include manual dilatation to release the membranes, balloon catheters, and cervical moisture-absorbing dilators, which can cause complications such as infection and rupture of the membranes [4]. Today, the use of prostaglandins is one of the most common methods for cervical preparation before induction of labor and it indirectly stimulates myometrial contractions [5]. Misoprostol is a synthetic product of PGE1 that is available in 100 and 200 µg tablets for intravaginal, oral, or sublingual use. This product is rapidly absorbed following oral or sublingual consumption and its side effects are less than other prostaglandins; however, their absorption rates vary in different people [6]. Vaginal misoprostol is proposed to be an effective, cost-effective drug that has clinical benefits for cervical preparation before labor stimulation [3]. Evening primrose oil contains prostaglandin effects [6]. The seeds of this plant have 60%-65% linoleic acid and 7%-14% gamma-linoleic acid (GLA), polyunsaturated fatty acids (PUFA) are natural precursors of prostaglandins, and linoleic acid is the most important PUFA [7]. Primrose oil contains large amounts of PUFA.

In addition, GLA, an effective converter of PUFA to prostaglandins (Including prostaglandin E), is found in abundance in this oil. Therefore, evening primrose oil (EPO) can be a suitable inducer for labor. Since EPO is generally well tolerated; there are no restrictions on its use during pregnancy, as it does not affect the safety of fetuses monitored by biophysical profile testing and Non-stress test [8, 9]. The aim of this study is to compare the effect of vaginal administration of primrose oil and misoprostol on the cervical preparation of pregnant women at ≥40 weeks gestation.

Material

This is a single-blind randomized clinical trial with three parallel groups at a ratio of 1:1. carried out in Department of Obstetrics and Gynecology in Tikrit Teaching Hospital. from the 1st October 2023 to 30th June 2024. A total of 90 pregnant women met the inclusion criteria. After determining their bishop scores, envelopes were used to randomly divide the patients into an intervention evening primrose oil Group 1, control (Misoprostol) Group 2, combined primrose oil and Misoprostol Group 3. To prepare the cervix, each patient in the control group (n = 30) received a 25 µg Misoprostol tablet, and each patient in the intervention group (n = 30) received 1,000 mg Pearl of primrose oil that pierced by a sterilized needle, Group 3 received combined 1,000 mg Pearl of primrose oil and25 µg Misoprostol tablet, which was administered vaginally by a researcher. Drugs were implanted vaginally in the posterior fornix. After placement, the patient was advised to stay in bed for 30 minutes, lie on his left side, and not leave the bed. The Bishop score was re-evaluated by the researcher after the intervention. The Bishop score was re-evaluated by the researcher after the intervention. A score of 9 indicated a response to the drug. If the first dose did not elicit any response, it was repeated 4 hours later. With the same dose as before for a maximum of four times (uterine contractions were ineffective with less than three contractions in 10 minutes uninitiated with 45 seconds duration and a normal fetal heart.

Results

The mean age among Misoprostol (Control) group was 27.5±4.8, among primrose group was 28.4±4.7, and among misoprostol + primrose group was 27.4±5.3, in a statistically not significant relation. Most of the study groups had 2ndry school education 21(40%), 11(36.7%), and 10(33.3%) among misoprostol, primrose oil, and misoprostol + primrose groups, respectively, in a statistically not significant relation. Most of the study groups were housewives 25(83.3%), 27(90%), and 24(80%) among misoprostol, primrose oil, and misoprostol + primrose groups, respectively in a statistically not significant relation. The mean gestational age among Misoprostol (control) group was 40.4±4, among primrose group was 40.9±3, and among misoprostol + primrose group was 40.6±8, in a statistically not significant relation as shown in Table 1. The bishop score mean before intervention among Misoprostol (Control) group was 2.8±1.1, among primrose group was 3.1±1.23, and among misoprostol + primrose group was 2.7±1.4, in a statistically not significant relation as shown in Table 2. The bishop score mean at 4 hours after intervention among Misoprostol (Control) group was 4.2±0.89, among primrose group was 33.5±1.01, and among misoprostol + primrose group was 5.5±0.9, this relation was statistically significant using one way analysis of variance (ANOVA) test (P value < 0.05),the post -hoc test show that the statistically significant difference among misoprostol (G1) group and primrose group (G2) (P value = < 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = < 0.05), while there was no significant difference between (G1) group and (G3) (P value = > 0.05). The bishop score mean at 8 hours after intervention among Misoprostol (control) group was 8.9±1.1, among primrose group was7.6±1.3, and among misoprostol + primrose group was 9.3±0.99, this relation was statistically significant using one way analysis of variance (ANOVA) test (P value < 0.05),the post -hoc test show that the statistically significant difference among misoprostol (G1) group and primrose group (G2) (P value = < 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = < 0.05), while there was no significant difference between (G1) group and (G3) (P value = > 0.05). The bishop score mean at 12 hours after intervention among Misoprostol (control) group was 9.4±1.19, among primrose group was 8.1±1.12, and among misoprostol + primrose group was 9.7±0.8, this relation was statistically significant using one way analysis of variance (ANOVA) test (P value < 0.05),the post -hoc test show that the statistically significant difference among misoprostol (G1) group and primrose group (G2) (P value = < 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = < 0.05), while there was no significant difference between (G1) group and (G3) (P value = > 0.05), as shown in Table 2.

Table 3 shows that there was no statistically significant difference in fetal heart rate between the three groups. The average fetal heart rate (HR) at first 15 minutes was 140.6±5.1, 139.7±6.3, and 141.1±4.9, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. This relation was statistically not significant using ANOVA test (P value > 0.05). The average fetal heart rate (HR) at 60 minutes was 145.7±9.2, 143.2±8.1, and 144.5±8.5, among misoprostol, primrose oil, and misoprostol+ primrose groups, respectively. This relation was statistically not significant using ANOVA test (P value > 0.05). As shown in table 3.

The average Cervical preparation time to induction of labor (Hours) was 16.3±2.6, 21.9±1.5, and 16.8±2.1, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. This relation was statistically significant using one way analysis of variance (ANOVA) test (P value < 0.05), the post -hoc test show that the statistically significant difference among misoprostol (G1) group and primrose group (G2) (P value = < 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = < 0.05), while there was no significant difference between (G1) group and (G3) (P value = > 0.05). as shown in table 4.4.

Patients taking oxytocin found among 9(30%), 15(50%), and 8(26.7%) among misoprostol, primrose oil, and misoprostol + primrose groups, respectively (Halfe of the patient receiving primrose oil need oxytocin). this relation was statistically significant using chi-square test (P value < 0.05). The average Duration of oxytocin use was, 4±1.09, 6.8±1.1 and 3.4±0.8 among misoprostol, primrose oil, and misoprostol + primrose groups, respectively (Patient receiving primrose oil need longer duration of oxytocin

administration than other two groups). This relation was statistically significant using one way analysis of variance (ANOVA) test (P value < 0.05), the post -hoc test show that the statistically significant difference among misoprostol (G1) group and primrose group (G2) (P value = < 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = < 0.05), while there was no significant difference between (G1) group and (G3) (P value = > 0.05).

One dose was needed only in 2(6.7%) of Misoprostol group and 4(13.3%) of Misoprostol + primrose oil group, while none of the primrose oil group responded on 1 dose. Most of the Misoprostol and Misoprostol group + primrose oil groups need two doses 15(50%), 16(53.3%) respectively while primros oil group need 3 or 4 doses 13(43.3%), 12 (40%) respectively. this relation was statistically significant using chi-square test (P value < 0.05). Cesarean section delivery found among 8(26.7%), 9(30%), and 7(23.3%) among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. this relation was statistically significant using chi-square test (P value < 0.05). Common cause of Cesarean section was thick meconium found among misoprostol 5(62.5%), and misoprostol + primrose groups 4(57.1%) while it was lower among primrose group misoprostol 2(22.2%). In primrose oil group labor arrest was more common than other two groups 5(55.6%), while in misoprostol group was 1(12.5%) and in misoprostol + primrose group was 0(0%). this relation was statistically significant using chi-square test (P value < 0.05). as shown in table 4.

The average 5 minute Apgar score was 9.1±1.1, 8.9±0.9, and 8.6±1.5, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. This relation was statistically not significant using one way analysis of variance (ANOVA) test (P value < 0.05), the post -hoc test show that the statistically non- significant difference among misoprostol (G1) group and primrose group (G2) (P value = > 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = >0.05), and there was no significant difference between (G1) group and (G3) (P value = > 0.05).

The average 5 minute Apgar score was 9.6±0.77, 9.8±0.8, and 9.52±0.69, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. This relation was statistically not significant using one way analysis of variance (ANOVA) test (P value < 0.05),the post -hoc test show that the statistically non- significant difference among misoprostol (G1) group and primrose group (G2) (P value = > 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = >0.05), and there was no significant difference between (G1) group and (G3) (P value = > 0.05).

The average Neonatal weight (Kg) was 3.04±0.38, 2.93±0.43, and 2.8±0.5, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. This relation was statistically not significant using one way analysis of variance (ANOVA) test (P value < 0.05), the post -hoc test show that the statistically non-significant difference among misoprostol (G1) group and primrose group (G2) (P value = > 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = >0.05), and there was no significant difference between (G1) group and (G3) (P value = > 0.05).

Need for admission to neonatal care unit was 7(23.33%), 8(26.7%), 6 (20%), among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. This relation was statistically not significant using one way analysis of variance (ANOVA) test (P value < 0.05),the post -hoc test show that the statistically non- significant difference among misoprostol (G1) group and primrose group (G2) (P value = > 0.05), and group misoprostol+ primrose group (G3) group and primrose group (P value = >0.05), and there was no significant difference between (G1) group and (G3) (P value = > 0.05), as shown in table 5.

Discussion

The three groups did not have statistically significant differences in terms of demographic variables and history of midwifery. They were homogeneous. Demographic and obstetrical history. The bishop score at 4 hours of intervention was significantly increased among Misoprostol (control) 4.2±0.89 group among misoprostol+ primrose group 5.5±0.9, more than among primrose group 33.5±1.01. The bishop score mean at 8 hours after intervention was significantly higher among Misoprostol (control) group was 8.9±1.1, and among misoprostol + primrose group was 9.3±0.99, than among primrose group 7.6±1.3. This figure also found at 12 hours of intervention. Mirzadeh N *et al*. 2020 found that there were no significant difference in the mean bishop score at 4 hours between the Evening Primrose Group 11.65±0.9 and Misoprostol 11.81±0.654. [10] Hussein, M. R. *et al* 2019 found that misoprostol was significantly more effective than evening primrose in increasing cervical bishop score in the inactive phase of labor [11]. Mobaraki N *et al*.2023 found that the mean mean bishop score at 4 hours was higher among misoprestol group (53%) than primrose oil group (46%) of the patient had score > 9 [12]. The average Cervical preparation time to induction of labor (hours) was significantly longer among primrose oil group 21.9±1.5 than Misoprostol 16.3±2.6 and Misoprostol + primrose oil group16.8±2.1. This goes with Moghimi Z *et al*. 2022 found that primrose group need more time than misoprostol group 14.38±5.83, 10.75±3.15 respectively [11].

In contrary Hussein, M. R. (2019) found that the mean length of the latent labor phase in the misoprostol and evening primrose groups 9.07±0.96 was significantly lower from the misoprostol group 10.13±0.83 hours. Perhaps the reason for the differences in the results of studies is using different evening primrose capsules doses and how to use it [12]. Misoprostol + primrose oil group was significantly need less doses than the Misoprostol group. One dose was needed only in 2 (6.7%) of Misoprostol group and 4 (13.3%) of Misoprostol + primrose oil group, while none of the primrose oil group responded on 1 dose. Most of the Misoprostol and Misoprostol group + primrose oil groups need two doses 15(50%), 16(53.3%) respectively while primrose oil group need 3 or 4 doses 13(43.3%), 12 (40%) respectively. This goes with Hashemi H, *et al* 2023 found that the average dose of misoprostol received in the group of misoprostol plus primrose (271.42±115.39 mcg) was significantly lower than that of misoprostol alone group (520±201.53 mcg). EPO contains the effects of prostaglandins [13]. Prostaglandins play a vital role in the cervical preparation process [14]. The mechanism of EPO is that its two essential fatty acids, linoleic and gamma-linolenic acids, help the synthesis of prostaglandin E1 [15]. Misoprostol also is an analogue of 15-methyl prostaglandin

E1, which causes uterine muscle contraction and cervical dilation [16]. Therefore, it seems logical that the vaginal administration of EPO capsules can help reduce the dose of misoprostol. In this regard, Najaf *et al*. showed that vaginal administration of EPO capsules reduced the need for labor induction in the intervention group compared to the control group [17]. Also, the findings of another study showed that the use of vaginal EPO capsules plus misoprostol for cervical ripening in women with prolonged pregnancies is much more effective than misoprostol alone [18].

Regarding oxytocin need significantly half of the patient receiving primrose oil need oxytocin, in comparison to lower proportion of those received misoprostol, 9(30%) and misoprostol + primrose 8(26.7%). The average Duration of oxytocin use was significantly longer among primrose oil group 6.8±1.1, than misoprostol group 4±1.09, and misoprostol + primrose group3.4±0.8. Shahraki AD, *et al* 2023 found that non significantly more patients took oxytocin in the misoprostol group 48 (87.3%) than primrose group 41 (74.5%), and the duration of oxytocin use was 3.73±0.66 among misoprostol group and 3.55±0.54 among primrose group with non-significant difference [19]. Moghimi Z *et al*. 2022 found that 95% of prim rose group need oxytocin in comparison to 60% of primrose group [11]. Cesarean section delivery was significantly higher among primrose oil group (30%) than, misoprostol, (26.7%), and misoprostol + primrose groups (23.3%). This in contrary with Shahraki AD, *et al*. 2023 found that 65.5% of patients in the misoprostol group and 45.5% in the primrose oil group underwent cesarean sections for pregnancy termination [19]. Common cause of Cesarean section was thick meconium found among misoprostol 5(62.5%), and misoprostol + primrose groups 4(57.1%) while it was lower among primrose group misoprostol 2(22.2%).

In primrose oil group labor arrest was more common than other two groups 5 (55.6%), while in misoprostol group was 1(12.5%) and in misoprostol + primrose group 3 was 0(0%). this relation was statistically significant using chi-square test (P value < 0.05). as shown in table 4.4. Shahraki AD, *et al*. 2023 found that Labor arrest was significantly higher among primrose group (48%) than misoprostol group (8.4%), while Thick meconium is more common among misprostol group (66.6%) than primrose group (24%) [19]. Linoleic acid from the evening primrose converts to arachidonic acid during a number of enzymatic processes. Finally, arachidonic acid by cyclooxygenase facilitates the synthesis of prostaglandin E2 from the evening primrose capsule [20]. Prostaglandin E2 physiologically increases cervical readiness by increasing water under the cervical mucosa and altering collagen bands [21]. It is worth noting that cervix is composed mainly of fibroblast cells and connective tissue composed of collagen and glucose aminoglycans. Cervix preparation is an active biochemical process in which a series of extensive collagenase reactions occur. In the collagenase process, type 1 and 8 metalloproteinase are essential. Type1 metalloproteinase are produced by fibroblast cells and type 8 by predominantly neutrophils (Leukocytes). Studies have shown that prostaglandin E2 has a direct effect on stimulating the activity of type 1 metalloproteinase and that prostaglandins can increase the level of type 8 metalloproteinase by adsorption of neutrophils into the cervix. This leads to increased collagenase activity and further softening of the cervix [22]. Therefore, it can be considered as a positive effect of evening primrose capsule on cervical readiness by increasing prostaglandin E2. Another result of this study was the difference in cervical consistency. Misoprostol caused softness of the cervix. The softening effect is due to its direct impact on the cervical tissue.

Although its mechanism is unclear but, reducing the amount of cervical collagen and increasing its solubility and activity f collagen degrading enzymes may be one of the possible tools of this product However, its use (oral-vaginal) also be of interest. Perhaps the reason for the firm of the cervical consistency in women of the evening primrose group is the short duration of capsule use. Most of these women had been admitted to the hospital on the first day after capsule application [23]. There were non-statistically significant difference in average fetal heart rate (HR) at first 15 minutes, and 60 minutes among three study groups. The average fetal heart rate (HR) at first 15 minutes was 140.6±5.1, 139.7±6.3, and 141.1±4.9, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. The average fetal heart rate (HR) at 60 minutes was 145.7±9.2, 143.2±8.1, and 144.5±8.5, among misoprostol, primrose oil, and misoprostol + primrose groups, respectively. There were non-significant difference in average 5 minute Apgar score among misoprostol primrose oil, and misoprostol + primrose groups 9.1±1.1, 8.9±0.9, and 8.6±1.5, respectively. This goes with Moghimi Z *et al*. in 2022 found that there were non-significant different among primrose and misoprostol groups regarding Apgar score, found that four out of the six patients in the first group and two in the second group had an Apgar score of less than seven [11]. Raghuraman *et al*. have reported that a low Bishop score has undesirable consequences; therefore, effective measures should be taken to increase the Bishop score [23].

Table 1: The General Characteristics of the Study Groups

	Misoprostol (control)		**Primrose alone**		**misoprostol + primrose**		**P value**
	No.	**%**	**No.**	**%**	**No.**	**%**	
Age (Year)	27.5±4.8		28.4±4.7		27.4±5.3		> 0.05
Education							
Illiterate	4	13.3	7	23.3	6	20	> 0.05
Primary school	11	36.7	9	30	10	33.3	
Secondary school	12	40	11	36.7	10	33.3	
college	3	10	3	10	4	13.3	
Occupation							
Housewife	25	83.3	27	90	24	80	> 0.05
Employed	5	16.7	3	10	6	20	
Gestational age	40.4±4		40.9±3		40.6±8		> 0.05

Table 2: Bishop Score Evaluation Comparing Groups by Mean and Standard Deviation

Bishop Score	Misoprostol (control)	Primrose alone	Misoprostol + primrose	P value (F)	Post-hoc tests
Before intervention	2.8±1.1	3.1±1.2	2.7±1.4	> 0.05 (2.8)	G1 vs G2:p=>0.05 G1 vs G3:p=>0.05, G2 vs G3:P=>0.05
4 hours after intervention	4.2±0.89	3.5±1.01	5.5±0.9	< 0.05 (9.04)	G1 vs G2:p=0.01, G1 vs G3:p=0.4, G2 vs G3:P=0.0002
8 hours after intervention	8.9±1.1	7.6±1.3	9.3±0.99	< 0.05 (18.3)	G1 vs G2: p=0.0001, G1 vs G3: p=0.4 G2 vs G3:p=0.0000
12 hours after intervention	9.4±1.19	8.1±1.12	9.7±0.8	< 0.05 (19.6)	G1 vs G2: p=0.0000 G1 vs G3: p=0.5, G2 vs G3:p=0.0000

Table 3: Fetal Heart Rate & and Standard Deviations in the Study Groups

Fetal HR	Misoprostol (control)		Primrose alone		misoprostol + primrose		P value
	Mean	SD	Mean	SD	Mean	SD	P value (F)
First 15 minutes	140.6	5.1	139.7	6.3	141.1	4.9	> 0.05 (0.4)
First 30 minutes	138.8	8.1	138.5	7.6	139.7	6.8	> 0.05 (0.2)
First 45 minutes	142.3	5.9	140.3	7.9	141.4	8.7	> 0.05(0.35)
First 60 minutes	145.7	9.2	143.2	8.1	144.5	8.5	> 0.05(0.42)

Table 4: The Maternal and Fetal Outcomes among the Studied Groups

Maternal outcomes	Misoprostol (Control)		Primrose Alone		Misoprostol + Primrose		P value	Post-hoc tests
	No.	%	No.	%	No.	%		
Cervical preparation time to induction of labor (hours) mean±SD	16.3±2.6		21.9±1.5		16.8±2.1		<0.05 (64.4)	G1 vs G2: p=0.001, G1vsG3:p=0.6 G2 vs G3: p=0.001
Patients taking oxytocin	9	30	15	50	8	26.7	<0.05	
Duration of oxytocin use (Hours)	4±1.09		6.8±1.1		3.4±0.8		<0.05 (97.561)	G1 vs G2: p=0.001, G1 vs G3: p=0.059, G2 vs G 3: p=0.000
Dose of medicine usage								
one dose	2	6.7	0	0	4	13.3	0.001	
Two Dose	15	50	5	16.7	16	53.3		
Three dose	10	33.3	13	43.3	8	26.7		
Four dose	3	10	12	40	2	6.7		
Mode of delivery								
Cesarean section	8	26.7	9	30	7	23.3	0.8	
Vaginal delivery	22	73.3	21	70	23	76.7		
Cause of Cesarean section								
Thick meconium	5	62.5	2	22.2	4	57.1	0.09	
Fetal distress	2	25	2	22.2	3	42.9		
labor arrest	1	12.5	5	55.6	0	0		

Table 5: The Newborn Outcomes among the Studied Groups

Newborn Outcome	Misoprostol (Control)		Primrose Alone		Misoprostol + Primrose		P value	Post-hoc tests
	No.	%	No.	%	No.	%		
5-minute Apgar score Mean±SD	9.1±1.1		8.9±0.9		8.6±1.5		> 0.05 (1.34)	G1vs G2: p=0.8, G1 vs G3: p=0.2, G2 vs G 3: p=0.6
10-minute Apgar score Mean±SD	9.6±0.77		9.8±0.8		9.52±0.69		> 0.05 (1.23)	G 1 vs G2:p=0.6, G1 vs G3: p=0.8, G2 vs G 3: p=0.3
Neonatal weight (Kg) mean±SD	3.04±0.38		2.93±0.43		2.8±0.5		> 0.05 (2.24)	G 1 vs G2:p=0.5, G1 vs G3: p=0.1, G 2 vs G3: p=0.5
Need admission to neonatal care unit	7	23.33	8	26.7	6	20	> 0.05 (0.8)	

Conclusion

The combination of misoprostol and primrose decrease the needed dose of misoprostol and duration of oxytocin needed than misoprostol alone, so the combination of misoprostol and primrose is more effective in induction of labor.

Conflict of Interest

Not available

Financial Support

Not available

References

1. Bajpai N, Bhakta R, Kumar P, Rai L, Hebbar SH. Manipal cervical scoring system by transvaginal ultrasound in predicting successful labor induction. J Clin Diagn Res. 2015;9:4-9.
2. Najafi M, Loripoor M, Saghafi Z, Kazemi M. The effect of vaginal evening primrose on the Bishop score of term nulliparous women. NPT. 2019;6:202-211.
3. Asia Ahmed Zghair Alrawi and Masryiah Rashad Hussein. Comparison between ultrasound and hysteroscopy in the diagnosis of intra-uterine space-

occupying lesion in Tikrit teaching hospital. Int. J. Gynaecology Sci. 2024;6(2):21-25.
DOI: 10.33545/26648393.2024.v6.i2a.35
4. Solone M, Shaw KA. Induction of labor with an unfavorable cervix. Current Opinion in Obstetrics and Gynecology. 2020 Apr 1;32(2):107-112.
5. Bahmani S, Hesamy K, Shahgheibi S, Roshani D, Shahoei R. Comparison of the effect of vaginal capsule of evening primrose oil and misoprostol on cervical ripening of nulliparous women with post-term pregnancy. J Pharm Res Int. 2019;26:1-9.
6. Kashanian M, Eshraghi N, Rahimi M, Sheikhansari N, Javanmanesh F. Efficacy comparison of titrated oral solution of misoprostol and intravenous oxytocin on labour induction in women with full-term pregnancy. Journal of Obstetrics and Gynaecology. 2020 Jan 2;40(1):20-24.
7. Hemmatzadeh S, Mohammad Alizadeh Charandabi S, Veisy A, Mirghafourvand M. Evening primrose oil for cervical ripening in term pregnancies: a systematic review and meta-analysis. Journal of Complementary and Integrative Medicine. 2021 Jul 14(0):000010151520200314.
8. Jahdi F, Khalati M, Kashanian M, Naseri M, Haghani H. Effect of oral evening primrose capsule on ripening of the cervix in Nulliparous Iranian pregnant women. Acta Med Mediterranea. 2016;32:1273.
9. Raghuraman N, Stout MJ, Young OM, Tuuli MG, Lopez J, Macones GA, *et al*. 496: Admission modified Bishop score for women in spontaneous labor: Useful or useless? Am J Obstet Gynecol. 2016;214:S271.
10. Hussein MR, Ahmed DK. Maternal and Fetal Outcome in Patients with History of Polycystic Ovary Syndrome. Indian Journal of Forensic Medicine & Toxicology, 2019, 13(4).
11. Moghimi Z, Zargarzadeh N, Ghaemi M, Saedi N, Sobhanian A, Hadizadeh A, *et al*. Effects of misoprostol and evening primrose extracts on cervix preparation for labor induction in term pregnancies. Fertility, Gynecology and Andrology. 2022, 2(1).
12. Mobaraki N, Tabrizian S, Isazadehfar K2, Ghorbani S.Comparison of the effect of vaginal misoprostol alone and in combination with evening primrose capsules on the course of labor in pregnant women candidates for termination of pregnancy Int. J Community Med Public Health. 2023 Dec;10(12):4575-4580.
13. Hashemi H, Hasanpoor-Azghady SB, Farahani M, Amiri-Farahani L. Comparison of the effect of vaginal misoprostol and evening primrose oil capsule with misoprostol alone on the consequences of abortion in women with intrauterine fetal death: a randomized clinical trial. BMC Complementary Medicine and Therapies. 2023 Jul 19;23(1):248.
14. Hussein MR. Evaluation of relationship between obesity biomarker and Anti mullerian Hormone in obese infertile woman. Biochemical & Cellular Archives, 2019, 19(1).
15. Safaa Hussain M, Abdulridha MK, Khudhair MS. Anti-inflammatory, anti-oxidant, and vasodilating effect of evening primrose oil in type 2 diabetic patients. Int. J. Pharm. Sci. Rev. Res. 2016;39(2):173-178.
16. Sunitha S. Impact of Preoperative Rectal Misoprostol on Blood Loss During and After Caesarean Delivery-Experience in a Government Medical College Hospital (Doctoral dissertation, Thanjavur Medical College, Thanjavur).
17. Najaf M, Loripoor M, Saghaf Z, Kazemi M. The effect of vaginal evening primrose on the Bishop score of term nulliparous women. Nurs Pract Today. 2019;6:202-211.
18. Bahmani S, Shaoei R. Comparison of the Effect of Misoprostol and Evening Primrose oil capsules with Misoprostol on Delivery Method in Post-Term pregnancy: clinical trial. Avicenna J Nurs Midwifery Care. 2021;29:181-189.
19. Shahraki AD, Mirhoseini S, Movahedi M, Hajihashemy M, Haghollahi F. Comparative study of the effect of vaginal use of primrose oil with misoprostol on cervical preparation of prim gravid women: A double-blind clinical trial. Advanced Biomedical Research. 2023;12:1-6.
20. Church S, Van Meter A, Whitfield R. Dinoprostone compared with misoprostol for cervical ripening for induction of labor at term. J Midwifery Womens Health. 2009;54(5):405-411.
21. Kanayama N. Cervical Changes 1: Morphological and Biochemical Changes. Preterm Labor and Delivery. 2020:61-75.
22. Jahromi BN, Poorgholam F, Yousefi G, Salarian L. Sublingual versus vaginal misoprostol for the induction of labor at term: a randomized, triple-blind, placebo-controlled clinical trial. Iran J Med Sci. 2016;41(2):79.
23. Raghuraman N, Stout MJ, Young OM, Tuuli MG, Lopez J, Macones GA, *et al*. 496: Admission modifed Bishop score for women in spontaneous labor: Useful or useless? Am J Obstet Gynecol 2016;214:S271.

How to Cite This Article
Ali SMH, Hussein MR. Comparative analysis of misoprostol and herbal extract of primrose in cervical ripening for term pregnancy labor induction in Tikrit teaching hospital for 2023-2024. International Journal of Gynaecology Research. 2024;6(1):37-42.