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ORIGINAL ARTICLE

An assessment of cervical ripening with evening primrose oil: An obstetrical review.

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ABSTRACT… Objective: To compare cervical ripening in women having evening primrose oil with those not taking it. **Study Design:** Retrospective Cohort study. **Setting:** Department of Obs & Gynae, Abbasi Shaheed Hospital, Karachi. **Period:** July 2018 to April 2021. **Material & Method:** Patients were divided into 2 groups, one having evening primrose oil (EPO) 1gm twice daily from 37 weeks till labor, given by her previous birth attendant. Another group was without using evening primrose oil. Both were examined for cervical ripening by bishop score, length of labour and then for need for cesarean section. Statistical plan: SPSS 20. **Results:** BISHOP score for EPO group (6.1) vs non-EPO group (4.3) was statistically significant (p-value < 0.001). EPO have soft cervical consistency (73.5%), followed by medium (10.2%) and firm (16.3%) while non EPO have firm consistency (41.2%) followed by soft (37.3%) and medium (21.6%). The differences was statistically significant (p-value=0.001). The average length of labor for EPO group was 7.7 hours (±2.5 SD) and Non-EPO was 8.4 hours (±2.4 SD), statistically insignificant. The mode of delivery wasn't statistically significantly different between two groups. **Conclusion:** EPO tend to have soft cervical consistency. However mode of delivery between EPO group and Non-EPO group did not have any significant difference.

Key words: Bishop Score, Cervical Consistency, Evening Primrose Oil, Labor Induction, Natural Remedies.

INTRODUCTION

Cesarean section rate is increasing all over the world. A rising trend of caesarean section deliveries has been documented in South Asian countries including Pakistan, where it increased from 3.2% in1990 to 20% in 2018.[1] According to WHO a greater than 15% rate in C-section is an overuse and unnecessary[1,2,3]

The morbidities associated with C-section are higher.[4] Some complications are placenta accrete, Placenta previa, uterine rupture, scar dehiscence[5], urinary tract trauma, paralytic ileus and pre mature births.

One of the common causes of cesarean section is failed induction and non-progress of labor due to unripe cervix.[6]

Cervical ripening refers to the softening of the cervix that typically begins prior to the onset of labor contractions and is necessary for cervical dilation and the passage of the fetus.[7]

Vaginal delivery usually doesn't occur in the absence of ripen cervix when induction of labor is required.[8,9] There are many methods available for cervical ripening pharmacological and non-pharmacological.

Among non-pharmacological are complementary alternative medicine (CAM), mechanical and surgical interventions. The pharmacological methods are misoprostol, oxytocin and PGE2.[10] These methods have side effects and may cause overstimulation of uterus.[11] Sometimes due to unripe cervix the induction of labor may also fail.[12] The non-pharmacologic interventions are nipple stimulation, intercourse, warm water baths, and Trans-cutaneous nerve stimulation, some CAM (complementary and alternative medicine) including castor oil, raspberry leaves and evening

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primrose oil.[13]

Evening primrose oil (EPO) is an herbal medicine containing linoleic acid a precursor of prostaglandin E (that can helps in cervical ripening) and can reduce cesarean section rate. It is also used for many other medical purposes such as atopic dermatitis[14], mastalgia, premenstrual syndrome[15], Raynaud's phenomena, and menopausal symptoms etc.[16] Many certified nurse-midwives used non pharmacological approaches for ripening of cervix and induction of labor using evening primrose oil.[17] It is approved by FDA (US) as "generally recognized as safe" (GARS) category. It is safest with mild side effects known such as nausea and vomiting in some people.

There is lack of research in EPO uses in cervical ripening and pregnancy; a lot of studies are needed in this area.[18] Theories till yet suggest that EPO may reduce the C-section rate with fewer side effects then pharmacologic agents[19] and may increase the bishop scoring.

There were many patients in our public sector hospital, who previously were under supervision of a lady health visitor or dai. They were using evening primrose oil from 37 weeks till labour. We felt that there cervix is more softer and there is a difference between the group given evening primrose oil then those not taking it. We planned this study to see the effect of evening primrose oil on bishop score, labour duration and mode of delivery.

MATERIAL & METHODS

It was retrospective cohort study and was conducted in the Department of Obstetrics and Gynaecology, Abbasi Shaheed Hospital, Karachi, from July 2018 to April 2021, involving 101 patients. A total sample size of 101 patients was calculated by the World Health Organization (WHO) Sample Size calculator. Study was done according to Helsinki Declaration and after departmental permission. Convenience sampling technique was used.

Inclusion Criteria

1. Low parity
2. No indication of C-section
3. cephalic presentation
4. Singleton
5. Term Pregnancy

Exclusion Criteria

1. Any medical disorder of pregnancy like hypertension, diabetes, anemia
2. Previous 1 or more C-sections
3. Grand multi
4. High risk patients e.g placenta previa, twins

After inclusion, patients were divided into 2 groups, one having evening primrose oil 1gm twice daily from 37 weeks till labor, given by her previous birth attendant. Another group was without using evening primrose oil. Both were examined for cervical ripening by bishop score, length of labour and then for need for cesarean section. The primary outcome measure was cervical ripening. It can be assess by Bishop score Secondary outcome measure were length of active stage of labour and mode of delivery.

Data Analysis

Data has been analyzed using SPSS and Excel software applications.

Bishop Score

The examiner assigns a score to each component of 0 to 2 or 0 to 3. The highest possible score is 13 and the lowest possible score is 0.

Bishop Score				
Parameter	Score			
	0	1	2	3
Cervical position	Posterior	Middle	Anterior	–
Cervical consistency	Firm	Medium	Soft	–
Cervical effacement	0-30%	40-50%	60-70%	80+%
Cervical dilation	Closed	1–2 cm	3–4 cm	5+cm
Fetal station	−3	−2	−1, 0	+1, +2

RESULTS

The difference between average cervical consistency score for EPO group (1.6) vs non-EPO group (1.0) was statistically significant (p-value < 0.001).

The difference between average cervical position score for EPO group (1.2) vs non-EPO group (0.9) was statistically non-significant.

The difference between average cervical dilation score for EPO group (1.2) vs non-EPO group (1.0) was statistically non-significant.

The difference between average Fetal station score for EPO group (1.6) vs non-EPO group (1.3) was statistically significant (p-value = 0.011).

The difference between average BISHOP score for EPO group (6.1) vs non-EPO group (4.3) was statistically significant (p-value < 0.001).

	EPO (N=49)	Non-EPO (N=51)	P-Value
Age (in years), mean±SD	28±5	27±5	n.s
Gestational Age (in weeks), mean±SD	39±1	39±1	n.s
Fetal station score	1.6(0.6)	1.3(0.7)	0.011
Cervical Consistency Score	1.6(0.8)	1.0(0.9)	<0.001
Cervical Effacement Score	0.6(0.8)	0.1(0.3)	<0.001
Cervical Position Score	1.2(0.9)	0.9(0.8)	n.s
Cervical Dilation score	1.2(0.7)	1(0.8)	n.s
BISHOP Score	6.1(2.4)	4.3(2.6)	<0.001
Length of Labor (in hours)	7.7(2.5)	8.4(2.4)	n.s
	EPO (N=49)	Non-EPO (N=51)	p-value

Table-I. Comparison of different parameters for EPO vs Non-EPO group

Cervical consistency, n (%)	EPO (N=49)	Non-EPO (N=51)	P-Value
Firm	8 (16.3)	21 (41.2)	0.001
Medium	5 (10.2)	11 (21.6)	
Soft	36 (73.5)	19 (37.3)	

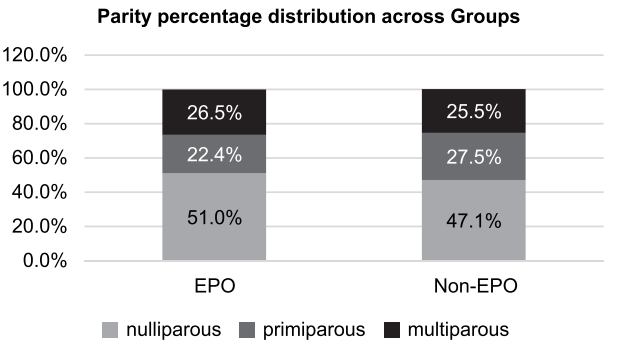
Table-II. Cervical consistency against groups

The average length of labor for pregnant women who received EPO was 7.7 hours (±2.5 SD) and those who didn't receive (Non-EPO) was 8.4 hours (±2.4 SD), the difference in average labor time for the two groups was statistically insignificant.

The majority of pregnant women who received EPO tend to have soft cervical consistency (73.5%), followed by medium (10.2%) and firm (16.3%) while those who didn't receive EPO tend to have firm consistency (41.2%) followed by soft (37.3%) and medium (21.6%). The differences in cervical consistency across groups was statistically significant (p-value=0.001)

Parity Category, n (%)	Groups	
	EPO (N=49)	Non-EPO (N=51)
Nulliparous	25(51%)	24(47.1%)
Primiparous	11(22.4%)	14(27.5%)
Multiparous	13(26.5%)	13(25.5%)

Table-III. Parity category distribution across Groups



Mode of Delivery n (%)	Group		
	EPO (N=49)	Non-EPO (N=51)	P-Value
NVD	25(51%)	20(39.2%)	
C/S	15(30.6%)	23(45.1%)	n.s.
VVD	6(12.2%)	5(9.8%)	
FVD	3(6.1%)	3(5.9%)	

Table-IV. Mode of delivery and evening primrose oil intervention

The mode of delivery for women who didn't receive

EPO wasn't statistically significantly different from those who received EPO during pregnancy.

DISCUSSION

As we found the difference between average cervical consistency score for EPO group (1.6) vs non-EPO group (1.0), which was statistically significant. Beites and Morgan[20] studied the effect of evening primrose oil for cervical ripening and found it accelerates cervical ripening and shortens labor.[21] Although we found the average length of labor for pregnant women who received EPO 7.7 hours (±2.5 SD) and those who didn't receive (Non-EPO) was 8.4 hours (±2.4 SD). Dove and Johnson[22] found that many midwives use evening primrose oil to hasten cervical ripening to shorten labor and reduce the chances of post dates pregnancies.

Our patients were using evening primrose oil orally. Usually in first pregnancy, the effect of primrose oil capsules taken orally and their effect on cervix in terms of bishop score are determined in 38 to 42 weeks of gestation.[23] Researchers described effective results of oil through vaginal insertion.[24] Further studies are required to see the effect of vaginal insertion.

In our study the Bishop score was 6.1 in the EPO group while in the non-EPO group it was 4.3. According to Goldberg[25] a Bishop score of 5 or more facilitates cervical ripening and helps in induction of labor. Similar results found in a meta-analysis showing significant differences between EPO and control groups in terms of bishop score (MD=1.32; 95% CI: 0.98 to 1.66), reducing caesarean section rate (OR= 0.61; 95% CI: 0.43 to 0.86), duration of first stage of labor (MD= -98.67; 95% CI: -140.98 to -56.38) and duration of second stage of labor (MD= -10.98; 95% CI: -21.86 to -0.09).[26,27] While another study done by Maryam Moradi found no significant difference between the intervention and control groups in terms of mean difference of the Bishop score.

This indicates that the EPO group had better cervical ripening than the non-EPO group. Akyol et al[28] is of the opinion that degree of cervical dilatation is a better clinical indicator when compared to Bishop score in predicting vaginal delivery within 24 hours. The authors have also indicated that multiparity is a strong determinant for vaginal delivery. In their study the Bishop score was more than four.

The difference between average Fetal station score for EPO group (1.6) vs non-EPO group (1.3) was statistically significant (p-value = 0.011).

The difference between average cervical consistency score for EPO group (1.6) vs non-EPO group (1.0) was statistically significant (p-value < 0.001). Keri and Rodney are of the opinion that in cases of soft cervix, labor takes less time.[29] The authors' opinion says that the score obtained by us in EPO group (1.6) was better than score obtained in non-EPO group (1.0) for cervical softening.

There were no local studies available to compare. As there is much controversy in different studies results, larger studies are required to reach the final conclusion.

As our study is retrospective and we cannot certainly say that amount of EPO taken by the patients was same or not? What was the time duration of taking the drug? What was Bishop score before starting the drug? These are some limitations of our study.

CONCLUSION

EPO tend to have soft cervical consistency and better Bishop Score but mode of delivery between EPO group and Non-EPO group did not have any significant difference.

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3	Rahilla Imtiaz	Data collection, Design, Analysis, Drafting.	
4	Aisha Khatoon	Data collection, Interpretation, Drafting.	
5	Mehwish Fatima	Data collection, Topic search, Compitation.	
6	Jarry Masood	Drafting, Interpretation, Topic search.	