Section: Obstetrics & Gynaecology

Research

ORAL DYDROGESTERONE AND MICRONIZED PROGESTERONE IN THREATENED ABORTION

Devinder Kumar[1], Chandersheikhar[2]

[1]Assistant Professor, Department of Obstetrics & Gynaecology, Government Medical College, Rajouri, Jammu & Kashmir, India.
[2]Associate Professor, Department of Obstetrics & Gynaecology, Government Medical College, Rajouri, Jammu & Kashmir, India.

Received : 18/10/2022
Received in revised form : 20/11/2022
Accepted : 03/12/2022

Keywords:
Dydrogesterone, micronized progesterone, Miscarriage.

Corresponding Author:
Dr. Chandersheikhar,
Email: dr.sheikher36@gmail.com
ORCID: 0000-0003-1055-6793

DOI: 10.47009/jamp.2023.5.1.5

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (1); 14-16

Abstract

Background: To compare oral dydrogesterone and micronized progesterone in threatened miscarriage. **Materials and Methods:** Eighty- four patients with pain or bleeding per vaginum were randomized into two groups of 45 each. Group I patients received 10 mg oral dydrogesterone twice daily and in group II 200 mg oral micronized progesterone twice daily. Parameters such as pain and bleeding per vaginum, spontaneous abortion, preterm delivery, full term delivery, IUGR, mode of delivery and birth weight of new born at the time of delivery were noted. **Result:** Age group 18-24 years comprises of 18 patients in group I and 20 in group II, 25-31 years had 20 in group I and 17 in group II and 32-38 years had 7 in group I and 8 in group II. Normal weight babies were 8 in group I and 15 in group II and growth restricted babies were 37 in group I and 30 in group II. Mode of delivery was cesarean in 5 in group I and 8 in group II and vaginal in 40 in group I and 37 in group II. The birth weight of the baby at 6 weeks- 8 weeks in group I was 2.7 kgs and in group II was 2.4 kgs, at 8 weeks-10 weeks was 2.7 kgs in group I and 2.5 kgs in group II and 10 weeks-12 weeks was 2.5 kgs in group I and 2.3 kgs in group II. The difference was significant (P< 0.05). Full term babies were 35 in group I and 36 in group II, pre- term 5 in group I and 4 in group II and abortion 5 in group I and 5 in group II. The difference was significant (P> 0.05). **Conclusion:** Dydrogesterone was efficient in reducing pain in lower abdomen and bleeding per vaginum as compared to micronized progesterone.

INTRODUCTION

Threatened miscarriage is defined as bleeding of intrauterine origin occurring before 20th completed week, with or without uterine contractions, without dilatation of the cervix and without expulsion of the products of conception.[1] Threatened miscarriage has been reported to be present in 20% to 25% of pregnant women. The symptom of a threatened miscarriage is vaginal bleeding and pain in lower abdomen.[2] Vaginal bleeding can vary from light spotting or brownish discharge to heavy bleeding. Pain can be diffuse to colicky in nature. Threatened abortion is diagnosed when vaginal bleeding with or without abdominal pain occurs during the first half of pregnancy.[3] The required prerequisites for threatened abortion are a closed cervix and an intrauterine viable fetus. Unfortunately, nearly half of threatened abortions end in miscarriage. Progesterone has been used to treat threatened abortions, but its efficacy remains unclear.[4]

Dydrogesterone is synthetic progesterone available as a retroprogesterone. Several studies have demonstrated that this preparation is safe and does not have androgenic effects compared with previous preparations because of its different structure. One study has reported that the dydrogesterone does not virilize even when used in a high dose.[5,6] The present study compared oral dydrogesterone and micronized progesterone in threatened miscarriage.

MATERIALS AND METHODS

A sum total of eighty- four patients with pain or bleeding per vaginum during first 12 weeks of pregnancy were enrolled in this study. All agreed to participate in the study after signing written consent. Institutional ethical clearance certificate was obtained before starting the study.

Demographic profile of each patient was recorded. Patients were randomized into two groups of 45each. Group I patients received 10 mg oral dydrogesterone twice daily and in group II 200 mg oral micronized progesterone twice daily. All patients underwent per speculum and per vaginum examination. Parameters such as pain and bleeding per vaginum, spontaneous abortion, preterm delivery, full term delivery, IUGR, mode of delivery

ISSN (O): 2687-5365; ISSN (P): 2753-6556

and birth weight of new born at the time of delivery were noted. Results of the study were compiled and Mann Whitney U test was applied for the study. P value less than 0.05 was considered significant.

RESULTS

Age group 18-24 years comprises of 18 patients in group I and 20 in group II, 25-31 years had 20 in group I and 17 in group II and 32-38 years had 7 in group I and 8 in group II [Table 1].

Normal weight babies were 8 in group I and 15 in group II and growth restricted babies were 37 in group I and 30 in group II. Mode of delivery was cesarean in 5 in group I and 8 in group II and vaginal in 40 in group I and 37 in group II. The birth weight of the baby at 6 weeks- 8 weeks in group I was 2.7 kgs and in group II was 2.4 kgs, at 8 weeks-10 weeks was 2.7 kgs in group I and 2.5 kgs in group II and 10 weeks-12 weeks was 2.5 kgs in group I and 2.3 kgs in group II. The difference was significant (P< 0.05) [Table 2, Figure 1].

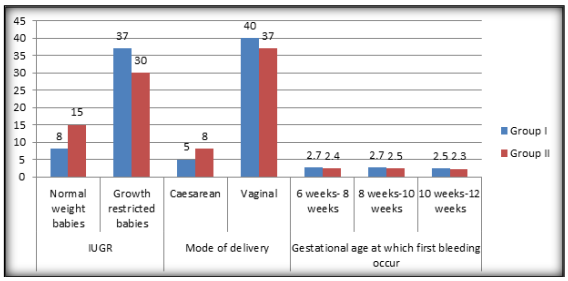

Figure 1: Comparison of parameters

Full term babies were 35 in group I and 36 in group II, pre- term 5 in group I and 4 in group II and abortion 5 in group I and 5 in group II. The difference was significant (P> 0.05).

Table 1: Distribution of patients

Age groups (years)	Group I	Group II
18-24	18	20
25-31	20	17
32-38	7	8

Table 2: Comparison of parameters

Parameters	Variables	Group I	Group II	P value
IUGR	Normal weight babies	8	15	0.01
	Growth restricted babies	37	30	
Mode of delivery	Caesarean	5	8	0.02
	Vaginal	40	37	
Gestational age at which first bleeding occur	6 weeks- 8 weeks	2.7	2.4	0.87
	8 weeks-10 weeks	2.7	2.5	
	10 weeks-12 weeks	2.5	2.3	

Table 3: Assessment of pregnancy outcomes

Pregnancy outcomes	Group I	Group II	P value
Term	35	36	0.97
Preterm	5	4	0.82
Abortion	5	5	1

DISCUSSION

Threatened miscarriage is diagnosed when a pregnant woman experiences vaginal bleeding with a viable intrauterine pregnancy and a closed cervix.[7] Threatened miscarriage occurs in 20% of pregnancies, and is associated with a 2.6-fold increase in risk of subsequent miscarriage.[8] The miscarriage rate after presentation with threatened miscarriage at our centre is 25.9%, despite universal progestogen supplementation.[9,10] Progesterone is a female sex hormone produced by the corpus luteum in early pregnancy that induces secretory changes in the uterine lining, and hence is crucial for establishing and maintaining pregnancy.[11,12] The present study compared oral dydrogesterone and micronized progesterone in threatened miscarriage.

Our results showed that age group 18-24 years comprises of 18 patients in group I and 20 in group II, 25-31 years had 20 in group I and 17 in group II and 32-38 years had 7 in group I and 8 in group II. Siew et al,[13] compared clinical outcomes of miscarriage, extent of vaginal bleeding at follow-up and side effects between treatment groups. In this study, 141 women presenting with threatened miscarriage were randomised to either MP or DYD of which 118 were included in the analysis. Baseline maternal demographics and serum progesterone levels were collected at presentation. Post-treatment bleeding pattern and self-reported side effects were recorded at the follow-up visit. The occurrence of spontaneous miscarriage was ascertained at week 16 of gestation. The population with miscarriage and resolution of bleeding were not statistically different between MP and DYD groups. A significantly higher percentage of women treated with MP reported drowsiness. After stratification into low and high serum progesterone levels, a significantly higher miscarriage rate was found in the low progesterone group, regardless of treatment type.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Our results showed that normal weight babies were 8 in group I and 15 in group II and growth restricted babies were 37 in group I and 30 in group II. Mode of delivery was cesarean in 5 in group I and 8 in group II and vaginal in 40 in group I and 37 in group II. The birth weight of the baby at 6 weeks- 8 weeks in group I was 2.7 kgs and in group II was 2.4 kgs, at 8 weeks-10 weeks was 2.7 kgs in group I and 2.5 kgs in group II and 10 weeks-12 weeks was 2.5 kgs in group I and 2.3 kgs in group II. Our results demonstrated that full term babies were 35 in group I and 36 in group II, pre- term 5 in group I and 4 in group II and abortion 5 in group I and 5 in group II. Czajkowski et al,[14] in their study provided 300 mg micronized progesterone or 30 mg of oral dydrogesterone and observed the patients in three visits. In the progesterone group, 3 miscarriages followed the first visit (3/29) immediately, and another miscarriage occurred between the second and the third visit (1/26). The incidence of miscarriages in the dydrogesterone group between visits 1 and 2 and visits 2 and 3 was 1 of 24 pregnancies and 1 of 23 pregnancies. Results showed that oral dydrogesterone decrease the abortion rate by increasing the uteroplacental flow.

CONCLUSION

Dydrogesterone was efficient in reducing pain in lower abdomen and bleeding per vaginum as compared to micronized progesterone.

REFERENCES

1. Simpson JL. Causes of fetal wastage. Clin Obstet Gynecol. 2007;50(1):10-30. doi: 10.1097/GRF.0b013e31802f11f6.
2. García-Enguídanos A, Calle ME, Valero J, Luna S, Domínguez-Rojas V. Risk factors in miscarriage: a review. Eur J Obstet Gynecol Reprod Biol. 2002;102(2):111-9. doi: 10.1016/s0301-2115(01)00613-3.
3. Walch KT, Huber JC. Progesterone for recurrent miscarriage: truth and deceptions. Best Pract Res Clin Obstet Gynaecol. 2008;22(2):375-89. doi: 10.1016/j.bpobgyn.2007.08.009.
4. Goddijn M, Leschot NJ. Genetic aspects of miscarriage. Baillieres Best Pract Res Clin Obstet Gynaecol. 2000;14(5):855-65. doi: 10.1053/beog.2000.0124.
5. Burton GJ, Jauniaux E, Watson AL. Maternal arterial connections to the placental intervillous space during the first trimester of human pregnancy: the Boyd collection revisited. Am J Obstet Gynecol. 1999;181(3):718-24. doi: 10.1016/s0002-9378(99)70518-1.
6. Pandian RU. Dydrogesterone in threatened miscarriage: a Malaysian experience. Maturitas. 2009;65 Suppl 1:S47-50. doi: 10.1016/j.maturitas.2009.11.016.
7. El-Zibdeh MY, Yousef LT. Dydrogesterone support in threatened miscarriage. Maturitas. 2009;65 Suppl 1:S43-6. doi: 10.1016/j.maturitas.2009.11.013.
8. Palagiano A, Bulletti C, Pace MC, DE Ziegler D, Cicinelli E, Izzo A. Effects of vaginal progesterone on pain and uterine contractility in patients with threatened abortion before twelve weeks of pregnancy. Ann N Y Acad Sci. 2004;1034:200-10. doi: 10.1196/annals.1335.022.
9. Omar MH, Mashita MK, Lim PS, Jamil MA. Dydrogesterone in threatened abortion: pregnancy outcome. J Steroid Biochem Mol Biol. 2005;97(5):421-5. doi: 10.1016/j.jsbmb.2005.08.013.
10. Rai P, Rajaram S, Goel N, Ayalur Gopalakrishnan R, Agarwal R, Mehta S. Oral micronized progesterone for prevention of preterm birth. Int J Gynaecol Obstet. 2009;104(1):40-3. doi: 10.1016/j.ijgo.2008.08.029.
11. Kumar A, Begum N, Prasad S, Aggarwal S, Sharma S. Oral dydrogesterone treatment during early pregnancy to prevent recurrent pregnancy loss and its role in modulation of cytokine production: a double-blind, randomized, parallel, placebo-controlled trial. Fertil Steril. 2014;102(5):1357-1363.e3. doi: 10.1016/j.fertnstert.2014.07.1251.
12. Verma S, Yadav P. To Study the Comparison Between Oral Dydrogesterone and Micronized Progesterone in Threatened Miscarriage in Terms of Pain Lower Abdomen and Bleeding Per Vaginum. Ann Int Med Den Res. 2021;7(1):11-15.
13. Siew JYS, Allen JC, Hui CYY, Ku CW, Malhotra R, Østbye T, et al. The randomised controlled trial of micronised progesterone and dydrogesterone (TRoMaD) for threatened miscarriage. Eur J Obstet Gynecol Reprod Biol. 2018;228:319-324. doi: 10.1016/j.ejogrb.2018.07.028.
14. Czajkowski K, Sienko J, Mogilinski M, Bros M, Szczecina R, Czajkowska A. Uteroplacental circulation in early pregnancy complicated by threatened abortion supplemented with vaginal micronized progesterone or oral dydrogesterone. Fertil Steril. 2007;87(3):613-8. doi: 10.1016/j.fertnstert.2006.07.1506.

ISSN (O): 2687-5365; ISSN (P): 2753-6556