

Original Research Article

Recurrent pregnancy loss at gynecology and obstetrical hospital in Duhok Province

Iman Jaafar Abdulrahman^{1*}, Ariana Khalis Jawad², Nasreen Abdulghafor SH. M. Amin³

¹Department of Obstetrics and Gynecology, Azadi Teaching Hospital, Iraqi Kurdistan, Duhok

²Department of Obstetrics and Gynecology, College of Medicine, Erbil Medical University, Kurdistan, Iraq

³Department of Obstetrics and Gynecology, Duhok Maternity Hospital, Iraqi Kurdistan, Duhok

Received: 17 May 2020

Accepted: 01 August 2020

*Correspondence:

Dr. Iman Jaafar Abdulrahman,

E-mail: imaan.jeefar99@gmail.com

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ABSTRACT

Background: Recurrent pregnancy loss is physically and emotionally harmful for mothers. This study aimed to find out the prevalence and associated factors of recurrent pregnancy loss (RPL) in pregnant women in Duhok province.

Methods: In this retrospective study, the medical records of the patients who had pregnancy loss and registered in Duhok Maternity Hospital were reviewed for the period of January - December 2019. Accordingly, 300 women aged 18 years and older with pregnancy loss were included in this study.

Results: The prevalence of EPL was 16.3%. The study found that patients with RPL were statistically older compared to those patients without RPL, (39.27 vs. 33.24 years; $p < 0.001$), respectively. Besides, the RPL group had a significantly higher percentage of family history of pregnancy loss (12.24% vs. 1.20%; $p < 0.001$). The patients with RPL had significantly higher prevalence of Chlamydia trachomatis (14.29% vs. 3.59%; $p = 0.002$), cervical incompetence (8.16% vs. 0.80%; $p = 0.002$), structural abnormalities of uterus (14.29% vs. 4.8%; $p = 0.012$), and polycystic ovary syndrome (PCOS) (40.82% vs. 11.95%; $p < 0.001$). There was no significant association of RPL with smoking ($p = 0.261$).

Conclusions: This study revealed a high prevalence of RPL in patients with pregnancy loss. Also, the study showed that the patients in the RPL group were significantly older and had a higher prevalence of medical illnesses; including chlamydia trachomatis, cervical incompetence, structural anomalies of the uterus, and polycystic ovarian syndrome.

Keywords: Iatrogenic conditions, Maternal complications, Recurrent pregnancy loss

INTRODUCTION

Recurrent pregnancy loss (RPL) is considered a common occurrence. Approximately 15% of all clinically recognized pregnancies lead to pregnancy loss. Many pregnancies fail before being clinically recognized and only 30% of all conceptions lead in a live birth.¹ Pregnancy loss is physically and emotionally harmful for mothers. RPL refers to as a recurrent miscarriage or habitual abortion. It is defined as 3 consecutive pregnancy losses before 22 weeks from the last menstrual

period. RPL is a relatively common medical condition between 15% and 25% for all pregnancies. It is increased with increasing age. The risk of RPL is between 9% and 12% in women aged ≤ 35 years, but it raises to 50% in women aged > 40 years.² It is considered a significant reproductive health problem.³ The incidence of RPL is different in the literature due to differences in the definitions, criteria, and the populations.⁴

The best available data suggest that the risk of miscarriage in subsequent pregnancies is 30% following

2 losses, in comparison to 33% following 3 losses in patients without a history of live birth.⁵ Epidemiological studies about RPL are important to understand the disorder and its occurrence in the population.⁶ Ministry of Health of Iraq has reported the following information about RPL; 10.9% of any pregnancy loss (Kurdistan: 9.0%), 9.7% of abortion/miscarriage (Kurdistan: 7.8%), and 0.8% of stillbirth (Kurdistan: 0.9%).⁷ This study aimed to find out the prevalence and associated factors of recurrent abortion loss in pregnant women at gynecology and obstetrical hospital in Duhok province.

METHODS

In this retrospective study, the medical records of pregnant women who had pregnancy loss and registered at Duhok Maternity Hospital for the January to December 2019 period were reviewed. Accordingly, 300 women who had pregnancy loss and aged 18 years and older were included in this study. The patients who were included in this study had different educational levels and socio-demographic aspects. The patients with missing information in their medical records were not included in this study.

Inclusions and exclusion criteria

The definition of RPL was established in three or more consecutive miscarriages before gestational week 22. The definition of the RPL was performed according to the 10th version of the International Classification of Diseases as RPL with or without an ongoing pregnancy.⁸ The patients who had not pregnancy loss were excluded from the study.

Data collection

The following information was obtained for this study; age, gravida; para; family history of pregnancy loss; smoking; RPL. The following medical information was taken from the medical records of the patients; *Chlamydia trachomatis*, cervical incompetence, structural anomalies of the uterus, and polycystic ovarian syndrome.

The diagnosis of *Chlamydia trachomatis* was performed by taking a swab of the discharge from the cervix for a culture sensitivity test. Cervical incompetence was diagnosed through a history of painless cervical dilation, advanced cervical dilation, and different before week 24 of pregnancy without painful contractions, vaginal bleeding, water breaking, or infection.⁹ The following medical conditions were considered the congenital uterine anomalies; septate: it was defined as a normal external uterine surface but two endometrial cavities; bicornuate: it was defined an abnormal, indented external uterine surface and two endometrial cavities; arcuate: it was defined as a normal external uterine surface with a 1 cm or less indentation into the endometrial cavity; unicornuate; and didelphys.

Polycystic ovary syndrome (PCOS) was diagnosed through the following symptoms. The symptoms are irregular periods or no periods at all; difficulty getting pregnant; excessive hair growth (hirsutism); weight gain; thinning hair and hair loss from the head; and oily skin or acne.¹⁰

Statistical methods

The prevalence of RPL was identified in dividing the number of persons with RPL by the total number of patients with recurrent pregnancy. The characteristics of patients were presented in number and percentage or mean and standard deviation. The difference in the prevalence of RPL was examined in the Pearson-Chi-square tests. The significant difference was identified in a p-value of less than 0.05. The statistical calculations are performed in Statistical Package for Social Sciences version 25 (SPSS 25; IBM, USA). The ethical approval of the present study was obtained from the Kurdistan Board for Medical Specialties (KBMS).

RESULTS

The mean age of the patients was 34.22 (7.76 years). The means of gravida, para, and abortion were 4.08, 1.35, and 1.68, respectively. The prevalence of a family history of pregnancy loss was 3.0%. The patients were passive smokers (85.0%). The prevalence rate of RPL in this study was 16.3% (Table 1).

Table 1: General characteristics and prevalence of recurrent pregnancy loss.

Characteristics (n=300)	Statistics	
	Mean	Std. deviation
Age (range: 16-49 years)	34.22	7.76
GPA (gravida, para, abortion)		
Gravida (range : 1-10)	4.08	1.55
Para (range : 0-7)	1.35	1.06
Abortion (range: 1-7)	1.68	0.74
	N	%
Family history of pregnancy loss		
Yes	9	3.0
No	291	97.0
Smoking		
Yes	23	7.7
No	22	7.3
Passive smoker	255	85.0
Recurrent pregnancy loss		
Yes	49	16.3
No	251	83.7

The prevalence of medical conditions in patients with miscarriage was *Chlamydia trachomatis* (5.33%), cervical incompetence (2.0%), structural anomalies of the uterus (6.33%), and PCOS (16.66%) (Table 2).

Table 2: Prevalence of endocrine and debilitating diseases in patients.

Medical conditions (n=300)	Statistics	
	No.	%
Chlamydia trachomatis		
Yes	16	5.33
No	284	94.66
Cervical incompetence		
Yes	6	2
No	294	98
Structural anomalies of the uterus		
Yes	19	6.33
No	281	93.66
Polycystic ovarian syndrome		
Yes	50	16.66
No	250	83.33

The study showed that patients with RPL were significantly older (39.27 vs. 33.24 years; $p < 0.001$). In addition, the RPL group had a significantly higher percentage of family history of pregnancy loss (12.24% vs. 1.20%; $p < 0.001$). The patients with RPL had significantly higher prevalence of Chlamydia trachomatis (14.29% vs. 3.59%; $p = 0.002$), cervical incompetence (8.16% vs. 0.80%; $p = 0.002$), structural abnormalities of uterus (14.29% vs. 4.8%; $p = 0.012$), and PCOS (40.82% vs. 11.95%; $p < 0.001$). There was no significant association of RPL with smoking ($p = 0.261$) (Table 3).

Table 3: Association of recurrent pregnancy loss with general and medical conditions.

Patients' characteristics (n=300)	Recurrent Pregnancy Loss		
	Non-RPL Group (251)	RPL Group (n=49)	p-value
Age	33.24 (7.56)	39.27 (6.81)	<0.001*
Family History of pregnancy loss			
Yes	3 (1.20)	6 (12.24)	<0.001
No	248 (98.8)	43 (87.76)	
Smoking			
Yes	22 (95.7)	1 (4.3)	0.261***
No	19 (86.4)	3 (13.6)	
Passive Smoker	210 (82.4)	45 (17.6)	
Chlamydia trachomatis			
Yes	9 (3.59)	7 (14.29)	0.002**
No	242 (96.41)	42 (85.71)	
Cervical incompetence			
Yes	2 (0.80)	4 (8.16)	0.001***
No	249 (99.2)	45 (91.84)	
Structural Abnormalities of the uterus			
Yes	12 (4.8)	7 (14.29)	0.012**
No	239 (95.2)	42 (85.71)	
PCOS			
Yes	30 (11.95)	20 (40.82)	<0.001**
No	221 (239.05)	29 (59.18)	

*independent t-test, **pearson chi-squared and ***fisher's exact test was performed for statistical analyses.

DISCUSSION

The present study found that the prevalence of RPL was 16.3% in patients with pregnancy loss who were included in this study. A study from Sweden explored the prevalence of RPL in 6852 women in a retrospective register-based study between 2003 and 2012. The incidence of RPL was 53 per 100 000 (0.05%) in women aged 18-42 years and 650 per 100 000 (0.65%) in women aged with achieved pregnancy. They found that the risk of RPL has been increased by 74% and 58%, respectively, during the study period.⁸

There is no sufficient information about the prevalence of RPL in Iraq and Iraqi Kurdistan. A research study aimed to determine the prevalence of abortion and its association with socio-demographic and obstetrical factors in the Kurdistan Region.¹¹ They reported that the prevalence of abortion was 27.7% and it was associated with maternal age, education, marriage age, number of live children, and governorate (Duhok). Of the total 7551 women aged 15-49 years included in the study, the prevalence of abortion was 28.9% (Erbil), 26.2% (Duhok), and 44.9% in Sulaymaniyah.

The factors related to RPL have been investigated in several studies. The factors contributed to RPL in Iraq and Iraqi Kurdistan were a high expression of P53 protein; serum copper with ceruloplasmin and zinc with folic acid levels; cytokine gene polymorphism; Human Cytomegalovirus and Human Herpesvirus-1 Antigens; toxoplasmosis; etc.¹²⁻¹⁶ We did find the significant association of RPL with infectious and medical conditions in this study.

The study showed that patients with RPL were older compared to those patients without RPL. The advanced age is a known risk factor for fetal anomalies, stillbirth, obstetric complications, and female subfertility.¹⁷ The relation of advanced age and RPL has been reported in many studies.

The chance of live birth in 978 RPL was reported in a descriptive cohort study. The considerable reduction in live birth was considered to be an increasing female age was found in this study.¹⁸ A study examined the factors related to RPL in 696 women. The study reported that females aged ≥ 35 years have a double risk of another pregnancy loss compared to women < 35 years.¹⁹

This study found that patients with RPL had a significantly higher prevalence of PCOS compared to non-RPL group. The studies have shown that recurrent pregnancy loss is more prevalent in patients with PCOS. A study conducted in Australia showed higher rates of admission for miscarriage in patients with PCOS. The prevalence of miscarriage was 11.1% and 6.1% in PCOS and control groups, respectively.²⁰

Moreover, infections are responsible for 0.5%–5% of RPL. The suggested mechanisms for infectious diseases as causes of pregnancy loss are 1) direct infection in the uterus, fetus, or placenta, 2) placental insufficiency, 3) chronic endometritis, or endocervicitis, 4) amnionitis, or 5) infected intrauterine device.²¹ The infectious diseases to have a role in RPL are ureaplasma, *Chlamydia trachomatis*, *L monocytogenes*, and herpes simplex virus HSV.²²

CONCLUSION

This study revealed a high prevalence of RPL in patients with pregnancy loss. In addition, the study showed that the patients in the RPL group were significantly older and had a higher prevalence of medical illnesses; including *Chlamydia trachomatis*, cervical incompetence, structural anomalies of the uterus, and polycystic ovarian syndrome.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Abdulrahman IJ, Jawad AK, Amin NASHM. Recurrent pregnancy loss at gynecology and obstetrical hospital in Duhok Province. *Int J Res Med Sci* 2020;8:3160-4.