

## Risk Factors for Secondary Infertility in Thi-Qar (Province of Iraq)

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### ABSTRACT

You can have primary or secondary infertility. When a person is completely unable to conceive, it is primary infertility. When someone has already given birth but is no longer able to, it is called secondary infertility. The purpose of this study is to shed more light on the most prevalent secondary infertility causes among infertile women in Thi-Qar, with a focus on modifiable risk factors and an attempt to control them through preventive and therapeutic measures with a chance to reduce secondary infertility incidence. A study was conducted between January 2019 and June 2022 to identify the risk factors for secondary infertility. From the infertility unite at Bint Al-Huda teaching hospital and private clinic, 50 cases in total were chosen. Interviews and document reviews were used to acquire the data. The study found that: age of the patient 70% from 31- 45 and 70% of them were house wife. Regarding their parity (54% para 1, 10% para 2 and 36% para 3). 70% of patient with ultrasound features of PCOS which is significant, 8% of them had tubal blockage. Regarding hormonal levels; 58% LH/FSH more than 2 and 76% with serum prolactin level more than 25ng/ ml. For thyroid function, 4 patient had hypothyroidism. 66% with irregular menstrual cycle, of them 10% had pelvic inflammatory disease and 2% with ectopic pregnancy 48% with history of abortion and 14% of them undergone curettage. 54% of the participant delivered by CS and only 9 of them use contraception, also we discover that 35 patients (75%) of them has history of primary infertility which highly significant. For male seminal fluid analysis: 10 of them 20% with abnormal SFA (6% oligozoospermia, 14% Asthenozoospermia). The features found in this study may aid in patient screening and the creation of preventative measures. This study concluded that a number of medical and demographic factors interact to cause secondary infertility. Age, profession, ectopic pregnancy history, pelvic inflammatory illness, high prolactin levels, hypothyroidism, and CS delivery were some of the factors that were considered. High significance is attached to the patient's PCOS and history of primary infertility.

**Keywords:** Risk Factors, Infertility

### INTRODUCTION

The polycystic ovarian syndrome (PCOS) is characterized by the coexistence of anovulation "oligomenorrhea, infertility, and dysfunctional uterine hemorrhage" with hyperandrogenism, whether or not polycystic ovaries are seen on ultrasound. (hirsutism and acne). It is the primary endocrine condition in women of reproductive age, affecting 6% to 15% of them<sup>1,2</sup>. The antral follicles with stopped development that are the cysts in polycystic ovaries. According to estimates, PCOS accounts for up to 75% of some groups of women's anovulatory infertility<sup>3</sup>. Oligo- or anovulation, biochemical or clinical symptoms of hyperandrogenism, and ultrasound-detected polycystic ovary evidence are two of the three requirements that are present<sup>4</sup>. Nowadays, a sizable portion of women seeking gynecologic care do so because of the widespread issue of female infertility. Secondary infertility is the inability to conceive after having already conceived, whereas primary infertility is the inability to conceive or carry a pregnancy successfully to term "either carrying a pregnancy to term or a miscarriage"<sup>5</sup>. After 12 months or more of ongoing, unprotected sexual activity, either the male or female reproductive system develops an infertility syndrome that causes infertility<sup>6</sup>. Millions of people who are of reproductive age worldwide are affected by infertility, which also has an effect on their families and communities. Infertility affects between 48 million couples and 179 million people worldwide, according to estimates<sup>7-9</sup>. Any step in the reproductive process might be disrupted by a number of circumstances. For instance, polycystic ovary syndrome<sup>10</sup>, hormonal issues<sup>11</sup>, premature ovarian failure<sup>12</sup>, genital

infections<sup>13</sup>, endometriosis<sup>14</sup>, "fallopian tube obstruction"<sup>15</sup>, "congenital uterine anomalies"<sup>16</sup>, "uterine synechiae"<sup>17</sup>, or other medical issues may contribute to female infertility. (diabetes and thyroid disorders)<sup>18,19</sup>.

### METHODS

The period between January 2019 and January 2022 saw the completion of infertility research. Sexually active women between the ages of 16 and 45 who presented with secondary infertility were considered cases (n = 50). The majority of the participant's cases were from the private clinic and teaching hospital's infertility unite in Bint Al-Huda. Potential participants were explained the study's questions in their native tongue, and the eligibility requirements were verified. All participants gave their consent or were told of it. A systematic questionnaire was used to collect socio-demographic data, information on contraceptive use, gynecological history, and obstetric history during a face-to-face interview. Investigations from both men and women were analyzed. Due to incomplete studies of certain participants' causes of infertility, some female aspects may have been overlooked. Furthermore, only 65% of patients may be accurately diagnosed with tubal disease by HSG. The investigation eliminated fertile women having a history of less than a year's worth of previous pregnancy attempts. Microsoft Excel (version 1.31) and SPSS 2016 were used to manually enter and thoroughly verify the information obtained during the interviews. (version 3.01.01). was employed to analyze the data statistically<sup>20-40</sup>.

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**RESULT**

**Table 1:** Sociodemographic characteristics of the cases involved in the study

percent	No. of cases	Variable
<b>Age</b>		
30%	15	15-30
70%	35	31-45
<b>Sig= 0.0047**</b>		<b>Chi-Square= 8</b>
<b>occupation</b>		
70%	35	House wife
30%	15	employer
<b>Sig= 0.0047**</b>		<b>Chi-Square= 8</b>
<b>parity</b>		
10%	5	2
54%	27	1
36%	18	3<
<b>Sig= 0.0006**</b>		<b>Chi-Square= 14.68</b>
<b>weight</b>		
24%	12	less than 60
76%	38	more than 60
<b>Sig= 0.0002**</b>		<b>Chi-Square= 13.52</b>
<b>Husband Age</b>		
40%	20	30>
60%	30	30<
<b>Sig= 0.1573 NS</b>		<b>Chi-Square= 2</b>

From this table we notice that age of the patient 70% from 31- 45 and 70% of them were house wife. Regarding their parity (54% para 1, 10% para 2 and 36% para 3).

**Table 2:** Abnormal investigations made previously for infertility

percentage (%)	NO of cases	Variable
70%	35	Ultrasound (pcos)
30%	15	Ultrasound normal
<b>Sig= 0.0047**S</b>		<b>Chi-Square= 8</b>
8%	4	HSG (tubal blockage)
92%	46	HSG (patent tubes)
<b>Sig= 0.0001**</b>		<b>Chi-Square= 35.28</b>
58%	29	SEX Hormone problems (LH/FSH) > 2
42%	21	SEX Hormone normal (LH/FSH) < 2
<b>Sig= 0.2579NS</b>		<b>Chi-Square= 1.28</b>
76%	38	PROLACTINE > 25 (ng/ml)
24%	12	PROLACTINE < 25 (ng/ml)
<b>Sig= 0.0002**</b>		<b>Chi-Square= 13.52</b>

From this table 70% of patient with ultrasound features of PCOS which is significant, 8% of them had tubal blockage. Regarding hormonal levels; 58% LH/FSH more than 2 and 76% with serum prolactin level more than 25ng/ml. For thyroid function, 4 patient had hypothyroidism.

**Table 3:** Male investigation

Percentage (%)	No of cases	Seminal fluid analysis
70 %	35	Normal
30%	15	Abnormal

Table 3 explain male seminal fluid analysis 10 of them 20% with abnormal SFA (6% oligozoospermia, 14% Asthenozoospermia).

**Table 4:** Association of infertility with another parameter

Percentage%	NO of cease	Parameters
48%	24	Abortion
52%	26	No abortion
<b>Sig=0.7773NS</b>		<b>Chi-Square= 0.08</b>
20%	10	PID
80%	40	No PID
<b>Sig=0.0007**</b>		<b>Chi-Square= 18</b>
2%	1	Ectopic pregnancy
98%	49	Uterus pregnancy
<b>Sig=0.00001**</b>		<b>Chi-Square= 46.08</b>
34%	17	Regular menstrual cycle
66%	33	Irregular menstrual cycle
<b>Sig=0.0237*</b>		<b>Chi-Square= 5.12</b>
54%	27	C.S.
46%	23	Vaginal delivery
<b>Sig=0.5716NS</b>		<b>Chi-Square= 0.32</b>
14%	7	Curettage
86%	43	No Curettage
<b>Sig=0.0003**</b>		<b>Chi-Square= 25.92</b>
8%	4	Thyroid issues
52%	46	Normal Thyroid
<b>Chi-Square= 0.0004**</b>		<b>Chi-Square= 35.28</b>
18%	9	Use of contraception
82	41	Without contraception
<b>Sig=0.0005**</b>		<b>Chi-Square= 20.48</b>
70%	35	History of primary infertility
30%	15	No history of primary infertility
<b>Sig=0.0047**</b>		<b>Chi-Square= 8</b>

Table 4: This table showed that 66% with irregular menstrual cycle, of them 1% had pelvic inflammatory disease and 2% with ectopic pregnancy. Regarding history of abortion, 48% with history of abortion and 14% of them undergone curettage. Their mode of delivery was 54% by CS and 46 % vaginal delivery and only 9 of them use contraception. From last table also, we discover that 35 patients (75%) of them has history of primary infertility Methods.

**DISCUSSION**

Contrary to earlier research' findings, which claimed that maternal age greater than thirty-five was related with a deterioration in both ovarian reserve and oocyte competence, this study discovered that women made up 70% of those between the ages of 31 and 45. A correlation between the age of the female and the diagnosis of female infertility was also found using multinomial regression<sup>41</sup>. According to this study, there is a link between higher BMI and secondary infertility<sup>42</sup>. 54% of the individuals in this study had CS, a condition that raises the chance of sterility and lowers the likelihood of subsequent pregnancies<sup>43</sup>. Ten of the patients had a PID history. Haron C. Wiesenfeld discovered that subclinical PID accounts for a percentage of female infertility<sup>44</sup>. Pelvic surgery has been linked to secondary infertility in previous research; in our analysis, 34% of patients have a history of abortion<sup>45</sup>. The most prevalent gynecological endocrinopathy is known as PCOS. Additionally, it is the most typical reason for anovulatory infertility. Due to the various recommended diagnostic criteria, there are certain challenges in its diagnosis<sup>46,47</sup>. In this study, 58% of patients had LH/FSH levels above 2 and 30% of patients had ultrasonography signs of PCOS. Using the Rotterdam criteria, it has been stated that 5–10%<sup>48-57</sup> of people worldwide have PCOS. Racial or ethnic variations may be the cause of this variation with several other research. Significant

variations in population prevalence studies are observed even when investigations rely on the same Rotterdam standard for the identification of PCOS, indicating that it may possibly be related to the average age of individuals under examination. Additionally, studies have shown that the improvement in PCOS women's menstrual cycles appears to diminish with advancing age and the presence of the usual polycystic ovarian morphology<sup>58-66</sup>. The level of resolution in the ultrasound scan is another conceivable explanation for the discrepancy. 70% of patients in the current study have primary infertility, which is a very significant finding.

## CONCLUSION

**According to this study, secondary infertility is caused by the confluence of a number of demographic and medical factors. Age, profession, ectopic pregnancy history, pelvic inflammatory illness, high prolactin levels, hypothyroidism, and CS delivery were some of the factors that were considered. High significance is attached to the patient's PCOS and history of primary infertility.**

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**Competing Interest:** None

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