State Rubricator of Scientific and Myoma, Senior Reproductive Age and IVF/IVF+ICSI is there Any Connection?

M.M. Maksudova

Associate Professor, Republican Specialized Scientific and Practical Medical Center for Obstetrics and Gynecology. Tashkent

Abstract

In women of older reproductive age, due to the physiological decrease in the ovarian reserve and more frequent concomitant gynecological disorders, the effectiveness of the IVF/IVF-ICSI protocols is significantly reduced, which is associated with a smaller number of obtained oocytes and low quality of embryos 5.

Keywords: *Myomectomy, myoma, numb, embryo.*

Introduction

According to World Health Organization report in 2010, 20–25% of women suffer from myoma, and it is estimated that around 235 million women are affected worldwide, representing 6.6% of the global female population[1]. The location of myoma is crucial in the results of ART. In particular, submucous myoma reduces significantly the implantation and pregnancy by ART. It was found that the submucous myoma, which deforms the uterine cavity, compromises a risk ratio of 0.3 for pregnancy and 0.28 for implantation after ART compared with infertile and women without myoma[3].

Myomectomy is an alternative to hysterectomy for women who want to save their uterus, regardless of their reproductive plans. A number of studies have been conducted to determine the effect of myoma and myomectomy on fertility; the research data were widely miscellaneous [3].

We studied 124 women aged 35-43 years who were treated in the Department of Assisted Reproductive Technologies, which used in vitro fertilization and/or intracytoplasmic sperm injection.

The goal of the research was to study the effect of the presence of intramural or subserous myoma and myomectomy (laparoscopically or laparotomically intramural-subserous or subserous) in the anamnesis on the number of oocytes derived, the dose of gonadotropins expended, the quality of the embryos, and the effectiveness of IVF/IVF-ICSI.

Patients with submucous or intramural uterine myoma (according to the FIGO III-VII classification) up to 4 cm. Patients with submucous uterine myoma (FIGO 0-II) were not included in the study group.

The Method of Research

Clinical examination of patients included a medical history, primary inspection, pelvic examination, ultrasound investigation of the pelvic organs using a vaginal probe.

The following indicators of ovarian stimulation in IVF cycles were analyzed in the study:

- Course dose of gonadotropins;
- Number of growing follicles;
- Frequency of paracentesis of ovary;
- The average number of oocytes obtained by paracentesis;
- The frequency of paracentesis of ovary in which no oocytes were obtained;

The following indicators were used in the study to describe the character of the early development of the embryo:

Morphological characteristics of embryos (on the 3rd day of development)

In addition, the analysis of the dependence of the effect of ovarian stimulation on the presence of

uterine myoma and myomectomies (laparoscopic and laparotomic) in the history.

Results

During stimulation and paracentesis of patients of older reproductive age, an accurate difference in the number of oocytes was obtained in the IVF/IVF-ICSI protocol with uterine myoma. So, 22 oocytes (75.86%) were obtained in patients with uterine myoma, 87 oocytes (92.55%) (p * <0.05) were obtained in patients without uterine myoma.

The connection of uterine myoma with the number of oocytes:

	Patients without uterine myoma	Patients with uterine myoma	Total	p
Oocytes not obtained	7	7	14	
	7,45%	24,14%	11,38%	
1 or more oocytes obtained	87	22	109	*<0,05
	92,55%	75,86%	88,62%	

The same connection was observed in the group of patients with myomectomy. During paracentesis of patients with myomectomy, 11 oocytes were obtained, without myomectomy, 98 oocytes.

Table: The connection of the number of oocytes obtained with the presence of myomectomy in the history

	Patients without myomectomy	Patients with myomectomy	Total	p
Oocytes not obtained	10	4	14	
	9,26%	26,67%	11,38%	
1 or more oocytes obtained	98	11	109	0.05
	90,74%	73,33%	88,62%	

The following table shows the accurate difference in the higher dose of gonadotropins expended in myomectomy, in contrast to non-operated patients. So, for myomectomy, an average of 2437.67 ± 241.15 MU of gonadotropins is expended during stimulation. And with stimulation of patients not operated on for fibroids 1953.57 ± 80.35 MU.

The number of follicles and subsequently oocytes is greater in patients without uterine myomectomy. And also, the number of correctly fertilized zygotes with two pronuclei is almost 2 times higher in patients without uterine myomectomy, which is associated with the initially large number of oocytes obtained. The total number of embryos is also greater in patients without myomectomy in a history, in particular class B embryos.

Table: Character of the cycle in patients with myomectomy

Indicant	Myomectomy	M±m, ME	Number	ANOVA	p
The total dose of gonadotropins expended	Yes	2437,67 ±241,15	15	0.040	0.013
	No	1953,57 ±80,35	107		
Number of follicles	Yes	5,866667 ± 0,735926	15	0.256	0.362
	No	7.17	107		
Number of oocytes	Yes	4,33 ± 0,89	15	0.116	0.167
	No	6,40 ± 0,47	107		
2 polar bodies (fertilization +)	Yes	2,75 ± 0,60	12	0.260	0.308
	No	3,78 ± 0,29	107		
Class B embryos	Yes	0,25 ± 0,18	12	0.071	0.085
	No	1 ± 0,134	107		

When analyzing the effectiveness of pregnancy with and without uterine myoma in the fresh transfer cycle, differences in pregnancy were not obtained.

	Without myoma	With myoma	Total
Biochemical pregnancy	23	4	27
	28,05%	18,18%	25,96%
The presence of an ovum on an ultrasound scan (21 day after embryo transfer)	20	4	24
	24,69%	18,18%	23,30%

Conclusions

The number of oocytes obtained is reduced due to the physiological decrease in ovarian reserve in women of older reproductive age, when using ART. A history of surgery on the ovaries reduces undoubtedly the ovarian reserve, and in the future the number of oocytes obtained during paracentesis. It would seem, surgical measures on the uterus should not have affected the ovarian reserve. In this study it was found that surgical measures on the uterus, in particular, myomectomy, reduce ovarian reserve. So, accurately more oocytes were obtained in the absence of myomectomy in a history in patients of older reproductive age (?). It can be assumed that after myomectomy due to the formation of adnations, impairment of blood flow in the ovaries, the ovarian reserve decreases.

The presence of myomectomy in a history does not affect the quality of oocytes, embryos

The presence of myomectomy in the patient's history can lead to an increase in the dose of gonadotropins for stimulation, which increases the financial costs of the stimulation cycle.

In a fresh transfer cycle, the presence of uterine myoma in women of older reproductive age does not affect pregnancy.

Perhaps if uterine myoma is not symptomatic, in women of older reproductive age who have not carried out their reproductive plans, it is advisable to conduct a myomectomy after receiving oocytes, before embryos transfer. which, in turn, will not increase the dose of gonadotropins expended, and will allow to obtain a larger number of oocytes.

Ethical Clearance: No ethical approval is needed.

Source of Funding: Self

Conflict of Interest: Nil

References

1. Elugwaraonu O OAOOOG. The incidence of uterine fibroid among reproductive age women. IJBAIR. 2013; 2(3): p. 55-60.
2. Rep COG. Published online. 2016; 5: p. 81-88.
3. Med. SR. The effect of uterine fibroids on embryo implantation. Horne AW1. 2007 Nov; 25(6): p. 483-9.
4. Gonadotropins. in Progress in Molecular Biology and Translational Science. 2016.
5. Buyanova S.N. MMV, PSA. Modern ideas about the etiology, pathogenesis and morphogenesis of uterine myoma. Russian Bulletin of the Obstetrician-Gynecologist. 2008; 8: p. 45-51.