Study of the Causes and the Results of Treatment in Infertile Couples at Thammasat Hospital between 1999-2004

Charoenchai Chiamchanya MD*,
Wanasaya Su-angkawatin MSc**

** Department of Obstetric and Gynecology, Medical Faculty, Thammasat University, Pathumthani*
*** Medical Faculty, Thammasat University, Pathumthani*

Objective: *To study the type, cause, pregnancy rate, and pregnancy outcome of infertile couple in Fertility Clinic of Thammasat Hospital, Thammasat University.*

Material and Method: *The retrospective study was performed by reviewing the data of infertile couples attending the Fertility Clinic of Thammasat Hospital from 1999 until 2004. The data included age, type of infertility, duration, causes, treatments, and results of treatment of the infertile couples and excluded the data from the cancellation treatment cycles.*

Results: *One thousand seventy two infertile couples revealed 61.8% of primary infertility, 35.6% of secondary infertility, and 2.5% of incomplete data record. The overall duration of infertility was mostly between 1-4 years in 58.3%. The age of 65.9% of female partners and 61.2% of male partners were between 30-39 years. The causes of infertility were found in both partners (55.6%), only in male partners (19.4%), only in female partners (17.5%), in unexplained cause (4.7%), and in incomplete data group (2.8%). The causes of female infertility were endometriosis, tubal, ovulatory, uterine, endocrinnological, pelvic factors, and unexplained causes were found in 25.6%, 12.4%, 11.8%, 9.1%, 9.0%, 1.7%, and 25.7% of cases respectively. The causes of male infertility were terato, oligoasthenoterato, asthenoterato, astheno, oligoterato, oligo, asthenooligo, azoospermia, and unexplained causes found in 25.4%, 14.4%, 12%, 2.0%, 1.0%, 0.4%, 0.3%, 4.5%, and 24.2%, respectively. The pregnancy rate of IUI was 14.8% of which 95.5% succeeded in three attempts, where those of IVF, ICSI and ICSI- PESA were 32.3%, 28.0%, and 35.3%, respectively.*

The outcomes of pregnancy from IUI were 71.6% singleton, 1.5% twins, 1.5% triplets, 19.4% abortion, and 6.0% ectopic pregnancy. The outcomes of pregnancy from IVF were 30% singleton, 20% twins, 40% abortion, and 10% ectopic pregnancy. The outcomes of pregnancy from ICSI were 56.5% singleton, 17.4% twins, 13% triplets, and 13% abortion. Finally, the outcomes of pregnancy from ICSI-PESA were 66.7% singleton, 16.7% twins, and 16.7% abortion.

Conclusion: *Primary infertility cases were more common than secondary infertility cases. More than half of the infertile couples causes were from both male and female partners. The causes of male and female factors were similar to other reports, such as abnormal semen analysis, endometriosis, tubal factor, and ovulatory factor. The pregnancy rate and pregnancy outcome of IUI, IVF and ICSI were comparable with the other reports.*

Keyword: *Infertility, Pregnancy rate, Pregnancy outcome, Intrauterine insemination (IUI), In vitro fertilization (IVF), Intracytoplasmic sperm injection (ICSI), Intracytoplasmic sperm injection-percutaneous epididymal sperm aspiration (ICSI-PESA)*

J Med Assoc Thai 2008; 91 (6): 805-12
Full text. e-Journal: *http://www.medassocthai.org/journal*

Correspondence to: Chiamchanya C, Department of Obstetric and Gynecology, Medical Faculty, Thammasat University, Pathumthani 12120, Thailand.

Infertility is a medical and social problem that affects the quality of family life. According to the data from WHO 1992, there were 50-80 million infertile couples in the world. The causes of infertility were 30-40% from female factor, 10-30% from male factor, and 15-30% from both partners[1-4]. In Thailand, Koetsawang S, et al 1985 reported 2% primary infertility and 8-10% secondary infertility[5]. Boonkasemsanti W, et al 2000 reported 10-15% of the couples in reproductive age had infertile problem and about 10 million infertile couples in Thailand[6]. The causes of female factors were endometriosis, tubal, ovulatory, uterine, and endocrinological factor. The causes of male factor were the abnormality of sperm morphology, motility, and the number of the sperm[7]. About 5-20% of infertility were unexplained[2,3,8,9].

Intrauterine insemination (IUI) and assisted reproductive technology (ART) were the options of the infertility treatment that replaced the conventional methods such as ovulation induction, surgery, and timing of sexual intercourse with liberal indication and more effective results. The pregnancy rate of IUI, IVF, and ICSI were 5-22%[8,10-12], 20-52.3%[2,3,8,9,12-19] and 21-31.7%[15,19,20], respectively. However, the result of treatments may be different among the various causes of infertility[14,21], different criteria of diagnosis, method of treatment and data analysis.

The objective of the present study was to verify the data of infertility treatment in the urban area near the capital city of Thailand. It studied the causes of infertility and the results of treatment that may be used to improve the success rate of treatments. It also created the appropriate strategic plan for fertility clinic services in a developing country.

Material and Method

This retrospective study was performed by reviewing the data of the infertile couples who visited the Fertility Clinic of Thammasat Hospital, Thammasat University between 1999 and 2004. The data included age, type of infertility, duration, causes, treatments, and results of treatment of the infertile couples. The present study included the data from all completed treatment cycles and excluded the data from the canceled treatment cycles. The results were expressed in the frequency table as frequency and percentage. The correlation analysis was done by Polynomial regression analysis with statistical significance if $p < 0.05$.

Results

Data of 1072 infertile couples was used for this study. It revealed 61.8% primary infertility, 35.6% secondary infertility, and 2.5% incomplete data record. The duration of infertility was between 1-2 years in 34.6%, between 3-4 years in 23.7%, over 10 years in 6.3%, and 5.2% incomplete data record (Table 1). The age of 40.1% female partners and 31.2% male partners were between 30-34 years. Incomplete data record was prevalent in 0.9% of female partners and 3.2% of male partners (Table 2). The causes of infertility were found in both partners 55.6%, only in male partners 19.4%, only in female partners 17.5%, in unexplained cause 4.7%, and in incomplete data group 2.8% (Table 3). The causes of female infertility were endometriosis, tubal, ovulatory, uterine, endocrinological, pelvic factor, and unexplained causes. They were found in 25.6%, 12.4%, 11.8%, 9.1%, 9.0%, 1.7%, and 25.7%, respectively (Table 4). The causes of female infertility were single in 52.0% and multiple in 17.7% (Table 5). The causes of male infertility were teratozoospermia, asthenooligoteratozoospemia, asthenoteratozoospermia, azoospermia,

Table 1. Type and duration of infertility of 1,072 infertile couples

	No. couple (%)
Type of infertility	
Primary	663 (61.8)
Secondary	382 (35.6)
Incomplete data record	27 (2.5)
Duration of infertility (years)	
1-2	371 (34.6)
3-4	254 (23.7)
5-6	116 (15.5)
7-8	97 (9.0)
9-10	60 (5.6)
> 10	68 (6.3)
Incomplete data record	56 (5.2)

Table 2. The age of 1,072 infertile couples

Age (year)	Female (%)	Male (%)
15-19	5(0.5)	1 (0.1)
20-24	37 (3.5)	14 (1.3)
25-29	217 (20.2)	145 (13.5)
30-34	430 (40.1)	334 (31.2)
35-39	277 (25.8)	322 (30.0)
40-44	96 (9.0)	143 (13.3)
45-49	0 (0)	59 (5.5)
50-54	0 (0)	16 (1.5)
55-59	0 (0)	4 (0.4)
Incomplete data record	10 (0.9)	34 (3.2)

Table 3. The causes of the infertility of 1,072 infertile couples

Causes	No. couple (%)
From both partners	596 (55.6)
Only from male partner	208 (19.4)
Only from female partner	188 (17.5)
Unexplained cause	50 (4.7)
Incomplete data record	30 (2.8)

Note: The methods of infertility investigation included pelvic examination, ultrasonography, hormone assays, assessment of tubal factor by hysterosalpingography or laparoscopy if indicated such as dysmenorrhea, pelvic pain, pelvic pathology and suspected allergy to radiologic dye etc. and semen analysis with WHO criteria by computer-aided sperm analysis (CASA) and Kruger's strict criteria in the morphology assessment by papanicolaou staining

Table 4. The causes of female infertility of 1,072 infertile couples

Causes	No. couple (%)
Unexplained causes	276 (25.7)
Endometriosis	274 (25.6)
Tubal factor	133 (12.4)
Ovulatory factor	127 (11.8)
Uterine factor	98 (9.1)
Endocrinological factor	97 (9.0)
Pelvic factor	18 (1.7)
Incomplete data record	49 (4.6)

asthenozoospermia, oligoteratozoospermia, oligozoospermia, asthenooligozoospermia, and unexplained causes found in 25.4%, 14.4%, 12.0%, 4.5%, 2.0%, 1.0%, 0.4%, 0.3%, and 24.2%, respectively (Table 6).

The pregnancy rate of IUI was 14.8%, of which were IUI-H 14.3% and IUI-D 29.4%. The pregnancy rates of IVF, ICSI and ICSI-PESA were 32.3%, 28% and 35.3% respectively (Table 7).

The outcome of pregnancy from IUI were 71.6% singleton, 1.5% twins, 1.5% triplets, 19.4% abortion and 6.0% ectopic pregnancy; from IVF were 30.0% singleton, 20.0% twins, 40.0% abortion and 10.0% ectopic pregnancy; from ICSI were 56.5% singleton, 17.4% twins, 13.0% triplets and 13.0% abortion; and from ICSI-PESA were 66.7% singleton, 16.7% twins and 16.7% abortion (Table 8).

The cumulative pregnancy rate of IUI were 59.7%, 83.6%, 95.5%, 98.5%, and 100% in 1, 2, 3, 4, and 5 attempts respectively (Fig. 1) of which the cumulative pregnancy rate was not increased significantly after three attempts ($p < 0.05$) (Fig. 2).

Table 5. The number of female causes in each infertile couple of 1,072 couples

Causes	No. couple (%)
1	557 (52.0)
2	147 (13.7)
3	37 (3.4)
4	6 (0.6)
Unexplained cause	276 (25.7)
Incomplete data record	49 (4.6)

Table 6. The causes of male infertility of 1,072 infertile couples

Causes	No. couple (%)
Unexplained causes	259 (24.2)
Abnormal semen analysis (total)	594 (55.4)
Teratozoospermia	272 (25.4)
Asthenooligoteratozoospermia	154 (14.4)
Asthenoteratozoospermia	129 (12.0)
Asthenozoospermia	21 (2.0)
Oligoteratozoospermia	11 (1.0)
Oligozoospermia	4 (0.4)
Asthenooligozoospermia	3 (0.3)
Azoospermia	49 (4.5)
Incomplete data record	17 (15.8)

Table 7. The pregnancy rate from IUI and ART

Methods of treatment	Cycle (%)	Pregnancy (%)
Total IUI	452 (100)	67 (14.8)
IUI-H	435 (96.2)	62 (14.3)
IUI-D	17 (3.8)	5 (29.4)
Total ART	130 (100)	39 (30)
IVF	31 (23.8)	10 (32.3)
ICSI	82 (63.1)	23 (28.0)
ICSI-PESA	17 (13.1)	6 (35.3)

Discussion

In the present study, primary infertility was more common than secondary infertility, which is reverse to the report by Koetsawang et al[5]. However, it was similar to findings in the United States[22]. Furthermore, the primary infertility may affect the family life much more than secondary infertility. The duration of infertility was mostly between 1-4 years,

Table 8. The outcome of pregnancy from IUI and ART

Methods of treatment	Pregnancy outcome (%)				
	Singleton	Twins	Triplets	Abortion	Ectopic pregnancy
IUI (n = 67)	48 (71.6)	1 (1.5)	1 (1.5)	13 (19.4)	4 (6.0)
Total of ART (n = 39)	20 (51.3)	7 (17.9)	3 (7.7)	8 (20.5)	1 (2.6)
IVF (n = 10)	3 (30.0)	2 (20.0)	0 (0)	4 (40.0)	1 (10.0)
ICSI (n = 23)	13 (56.5)	4 (17.4)	3 (13.0)	3 (13.0)	0 (0)
ICSI-PESA (n = 6)	4 (66.7)	1 (16.7)	0 (0)	1 (16.7)	0 (0)

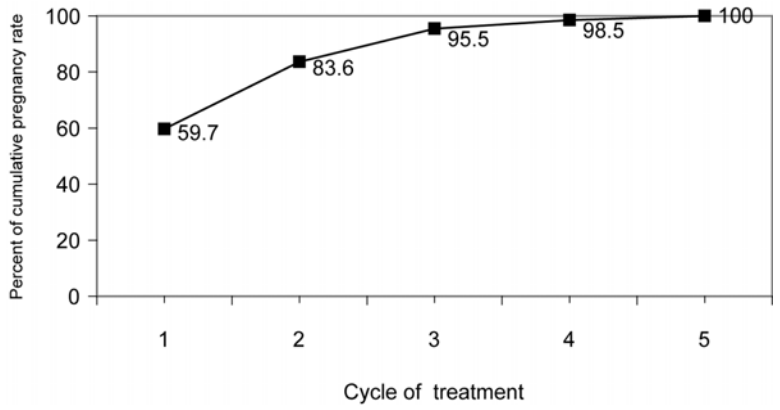

Fig. 1 The percentage of cumulative pregnancy rate of IUI

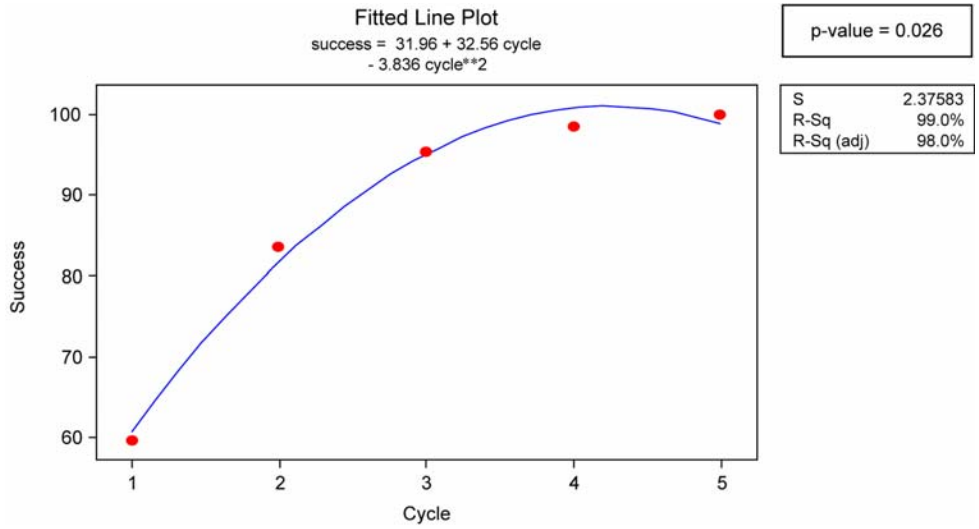

Fig. 2 The correlation of the percentage of cumulative pregnancy rate of IUI and the number of IUI attempts

which may be due to the infertile couples increased concern and eagerness to seek treatment. The age groups of the infertile couple, both male and female partners, were mostly between 30-34 years and 35-39 years. This may be due to the fact that in these age groups the fecundity begin to decrease[23] and the urgency to have a family is felt. The authors found that the cause of the infertility in more than half of the infertile couples came from both male and female partners. Furthermore, in the rest of the infertile couples, a male factor was the cause more often than when it was a female factor, which was different from the previous report[1] stating that nearly half of the infertile couples were only female factor cause. However, the prevalence of only male factor (19.4%) in the present study was the same as the other report (20%)[24]. The unexplained infertility was only 4.7%, which is less than the other reports that have between 5-20%[2,3,8,9]. The female factors mostly were endometriosis followed by tubal factor and ovulatory factor. These may not be different from the other reports stating that most of female factors were ovulatory factor and tubal factor[3,8]. This may be because of the prevalence of endometriosis in the present study that was 25.6%, which is comparable with the other reports showing between 20-70%[25]. However, sometimes the endometriosis, minimal or mild degree may not be considered as the cause of infertility. Therefore, the tubal factor and ovulatory factor may be the leading causes of female factors. The male factor mostly were abnormal semen analysis such as teratozoospermia, followed by oligoasthenoteratozoospermia, which is nearly the same as the other reports that mostly were oligoasthenoteratozoospermia[4].

The pregnancy rate of IUI was 14.8%, which is comparable with other reports that showed between 5-22%[8,10-12]. The abortion rate was 19.4% compared with 22.5% stated in other report[12]. The live births were 96% singleton and 4% multiple pregnancy. This is comparable with other reports of 93% singleton and 7-12% multiple pregnancy[10,12]. The cumulative pregnancy rate was significantly not increased after three attempts of IUI, which is the same as the other reports[26-29].

The pregnancy rate of IVF was 32.3%, which is comparable with other reports stating between 20-52.3%[2,3,8,9,12-19]. The pregnancy outcome resulted in 30% singleton, 20% twins, 40% abortion, and 10% ectopic pregnancy. This is comparable with other reports stating 16.2-50.1% singleton, 20-40% twins, 13.6-30% abortion, and 1.3-6.2% ectopic pregnancy[3,8,12-14,16-19].

The pregnancy rate of ICSI was 28%, which is comparable with other reports stating 21-31.7%[15,19,20]. The pregnancy outcome was 56.5% singleton, 17.4% twins, 13% triplets, and 13% abortion. This is comparable with other reports stating 16.2-50.1% singleton, 20-39.8% twins, 3-15.6% triplets, and 13.6-30% abortion[14,16,19].

The pregnancy rate of ICSI-PESA was 35.3% with 66.7% singleton, 16.7% twins, and 16.7% abortion. This was different from other reports[20,30] stating 43.5-50% pregnancy rate with 100% singleton. However, this may be due to the small sample size.

Conclusion

Primary infertility cases were more common than secondary infertility cases. The duration of infertility felled mostly between 1-4 years of marriage and the age of the infertile couples in both male and female partners were mostly between 30-39 years. More than half of the causes of infertility found in both partners followed by nearly the same portion of the causes found only in male and only in female partner while the unexplained cause was found only 4.7%. The causes of female factor were mostly endometriosis, tubal factor, and ovulatory factor. The causes of male factor were mostly abnormal semen analysis such as teratozoospermia, asthenooligoteratozoospermia and asthenoteratozooapermia. The pregnancy rate of IUI, IVF, ICSI and ICSI-PESA were 14.8%, 32.3%, 28.0%, and 35.3% respectively. The outcome of pregnancy from IUI, IVF, ICSI, ICSI-PESA were 71.6%, 30.0%, 56.5%, and 66.7% for singleton; 3.0%, 20.0%, 30.4%, and 16.7% for multiple pregnancy; 19.4%, 40.0%, 13.0%, and 16.7% for abortion and 6.0%, 10%, 0%, and 0% for ectopic pregnancy.

Acknowledgement

This retrospective study was supported by a grant of Thammasat University in 2004 and approved by the institutional review board and ethic committee of Medicine of Thammasat University. We sincerely thank to Assistance Professor Dr. Janya Pattaraarchachai for statistical advisory, Associate Professor Dr. Pachara Visutakul for final report advisory, and all staff of Thammasat Fertility Clinic for providing the data.

References

1. WHO Scientific Group. Recent advances in medically assisted conception. WHO Technical Report Series 820. Geneva: WHO; 1992:1-7.
2. Forti G, Krausz C. Clinical review 100: Evaluation

and treatment of the infertile couple. J Clin Endocrinol Metab 1998; 83: 4177-88.
3. Infertility. A Worldwide Problem. Electronic Infertility Network. Infertility IVF GIFT and fertility baby. 2008 [cited 2003 May 6]. Available from: www.ein.org/general.htm.
4. Isidori A, Latini M, Romanelli F. Treatment of male infertility. Contraception 2005; 72: 314-8.
5. Koetsawang S, Satayapan S, Jivasak-Apimas S, Belsey EM, Pinol A. Prevalence of infertility in urban and rural Thailand. Asia Oceania J Obstet Gynaecol 1985; 11: 315-23.
6. Boonkasemsanti W. Infertility and its causes. In: Pruksananonda K, Suwajanakorn S, Sereepapong W, Boonkasemsanti W, Viruttamasen, editors. Hand-on work in intrauterine insemination; 2000 January 17-18, 2000: 1-3.
7. Burney RO, Schust DJ, Yao MW. Infertility. In: Berek & Novak's gynecology. 14th ed. Philadephia: Lippincott Williams & Wilkins; 2007: 1185-276.
8. Adamson GD, Baker VL. Subfertility: causes, treatment and outcome. Best Pract Res Clin Obstet Gynaecol 2003; 17: 169-85.
9. Isaksson R, Tiitinen A. Present concept of unexplained infertility. Gynecol Endocrinol 2004; 18: 278-90.
10. Royere D. Intrauterine insemination: state-of-the-art in humans. Gynecol Obstet Fertil 2004; 32: 873-9.
11. Shibahara H, Obara H, Ayustawati, Hirano Y, Suzuki T, Ohno A, et al. Prediction of pregnancy by intrauterine insemination using CASA estimates and strict criteria in patients with male factor infertility. Int J Androl 2004; 27: 63-8.
12. Coppola F, Tridenti G, Barletta C, Bertoli M, Trentadue R, Barusi L, et al. Endocrine abortion in assisted reproduction technologies (ART). Acta Biomed Ateneo Parmense 1992; 63: 113-24.
13. Collins JA, Van Steirteghem A. Overall prognosis with current treatment of infertility. Hum Reprod Update 2004; 10: 309-16.
14. Qublan HS, Malkawi HY, Tahat YA, Areidah S, Nusair B, Khreisat BM, et al. In-vitro fertilisation treatment: factors affecting its results and outcome. J Obstet Gynaecol 2005; 25: 689-93.
15. Bukulmez O, Yarali H, Yucel A, Sari T, Gurgan T. Intracytoplasmic sperm injection versus in vitro fertilization for patients with a tubal factor as their sole cause of infertility: a prospective, randomized trial. Fertil Steril 2000; 73: 38-42.
16. Shayks MM. Assisted reproductive technology. 2000 [cited 2005 Mar 3]. Available from:www.dcmsonline.org/jax-medicine/2000journals/may2000/art.htm.
17. Pregnancy rates. Strong fertility and reproductive science center. [cited 2005 Mar 3]. Available from: www.stronghealth.com/services/womenshealth/ivf/successrates.cfm.
18. Bukulmez O, Yarali H, Yucel A, Sari T, Gurgan T. Intracytoplasmic sperm injection versus in vitro fertilization for patients with a tubal factor as their sole cause of infertility: a prospective, randomized trial. Fertil Steril 2000; 73: 38-42.
19. Srisombut C, Rojanasakul A, Suchartwatnachai C, Choktanasiri W, Weerakiet S, Chinsomboon S. Outcome of pregnancy in IVF-ET cycle at Ramathibodi Hospital. J Med Assoc Thai 1995; 78: 657-61.
20. Meden-Vrtovec H. Ovarian aging and infertility. Clin Exp Obstet Gynecol 2004; 31: 5-8.
21. Horak S, Huk J, Grettka K, Tomanek G, Ogrodnik M, Polaszek M. Comparison of the efficacy of ICSI using either spermatozoa aspired microsurgically from the epididymis (MESA-ICSI) or obtained from the ejaculation. Ginekol Pol 2003; 74: 12-6.
22. Tan SL, Maconochie N, Doyle P, Campbell S, Balen A, Bekir J, et al. Cumulative conception and live-birth rates after in vitro fertilization with and without the use of long, short, and ultrashort regimens of the gonadotropin-releasing hormone agonist buserelin. Am J Obstet Gynecol 1994; 171: 513-20.
23. Scott RT, Opsahl MS, Leonardi MR, Neall GS, Illions EH, Navot D. Life table analysis of pregnancy rates in a general infertility population relative to ovarian reserve and patient age. Hum Reprod 1995; 10: 1706-10.
24. Thonneau P, Marchand S, Tallec A, Ferial ML, Ducot B, Lansac J, et al. Incidence and main causes of infertility in a resident population (1,850,000) of three French regions (1988-1989). Hum Reprod 1991; 6: 811-6.
25. Endometriosis and infertility. [cited 2005 Mar 3]. Available from: www.medceu.com/tests/endoinfert.htm.
26. Agarwal SK, Buyalos RP. Clomiphene citrate with intrauterine insemination: is it effective therapy in women above the age of 35 years? Fertil Steril 1996; 65: 759-63.
27. Remohi J, Gastaldi C, Patrizio P, Gerli S, Ord T, Asch RH, et al. Intrauterine insemination and controlled ovarian hyperstimulation in cycles before GIFT. Hum Reprod 1989; 4: 918-20.
28. Lalich RA, Marut EL, Prins GS, Scommegna A. Life

table analysis of intrauterine insemination pregnancy rates. Am J Obstet Gynecol 1988; 158: 980-4.
29. Aboulghar M, Mansour R, Serour G, Abdrazek A, Amin Y, Rhodes C. Controlled ovarian hyperstimulation and intrauterine insemination for treatment of unexplained infertility should be limited to a maximum of three trials. Fertil Steril 2001; 75: 88-91.
30. Wolski JK, Koziol K, Lewandowski P, Biarda B, Wysocki J. Percutaneous sperm retrieval for ICSI procedures in men with obstructive azoospermia: ICSI-PESA and ICSI-TESE micromanipulation: our experience. Ginekol Pol 1998; 69: 545-50.

การศึกษาสาเหตุและผลการรักษาภาวะมีบุตรยากในคู่สมรสที่มีภาวะมีบุตรยากในโรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติระหว่างปี พ.ศ. 2542-2547

เจริญไชย เจียมจรรยา, วนัสยา สุอังคะวาทิน

วัตถุประสงค์*: เพื่อศึกษาชนิด สาเหตุ อัตราการตั้งครรภ์ และผลการตั้งครรภ์ในคู่สมรสที่มีบุตรยากในโรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ*

วัสดุและวิธีการ*: เป็นการศึกษาย้อนหลังจากข้อมูลในแฟ้มประวัติผู้ป่วยทั้งหมด ที่มารักษาภาวะมีบุตรยาก ที่หน่วยผู้มีบุตรยากโรงพยาบาลธรรมศาสตร์เฉลิมพระเกียรติ ระหว่างปี พ.ศ. 2542-2547 ในข้อมูลพื้นฐาน สาเหตุ วิธีการรักษาและผลการรักษา โดยไม่เก็บข้อมูลในรอบการรักษาที่มีการยกเลิก*

ผลการศึกษา*: พบว่ามีคู่สมรสที่มีบุตรยากทั้งหมดจำนวน 1,072 คู่ เป็นภาวะมีบุตรยากชนิดปฐมภูมิ, ชนิดทุติยภูมิ และข้อมูลบันทึกไม่ครบถ้วน คิดเป็นร้อยละ 61.8, 35.6 และ 2.5 ตามลำดับ ระยะเวลามีบุตรยาก ส่วนใหญ่อยู่ระหว่าง 1-4 ปี คิดเป็นร้อยละ 58.3 อายุของทั้งฝ่ายหญิงและฝ่ายชาย ส่วนใหญ่อยู่ระหว่าง 30-39 ปี คิดเป็นร้อยละ 65.9 และ 61.2 ตามลำดับ สาเหตุของการมีบุตรยาก มีสาเหตุทั้ง 2 ฝ่าย, สาเหตุจากฝ่ายชายฝ่ายเดียว, สาเหตุจากฝ่ายหญิงฝ่ายเดียว, ไม่พบความผิดปกติทั้ง 2 ฝ่าย และข้อมูลบันทึกไม่ครบถ้วน คิดเป็นร้อยละ 55.6, 19.4, 17.5, 4.7 และ 2.8 ตามลำดับ สาเหตุในฝ่ายหญิง เกิดจากภาวะเยื่อบุโพรงมดลูกอยู่ผิดที่, ภาวะหลอดมดลูกอุดตันอย่างน้อย 1 ข้าง, ภาวะการตกไข่ผิดปกติ, ภาวะความผิดปกติที่ตัวมดลูก, ภาวะความผิดปกติจากต่อมไร้ท่ออื่น ๆ, ภาวะที่มีพังผืดในอุ้งเชิงกราน และตรวจไม่พบความผิดปกติ คิดเป็นร้อยละ 25.6, 12.4, 11.8, 9.1, 9.0, 1.7 และ 25.7 ตามลำดับ สาเหตุในฝ่ายชาย เกิดจากภาวะที่มีความผิดปกติของรูปร่างของตัวอสุจิ, ภาวะที่มีความผิดปกติทั้งรูปร่าง การเคลื่อนไหวและจำนวนตัวอสุจิน้อย, ภาวะที่มีความผิดปกติของรูปร่าง และการเคลื่อนไหวของตัวอสุจิ, ภาวะที่ไม่พบตัวอสุจิเลย, ภาวะที่มีความผิดปกติของการเคลื่อนไหวของตัวอสุจิ, ภาวะที่มีความผิดปกติของรูปร่าง และจำนวนอสุจิน้อย, ภาวะที่มีจำนวนอสุจิน้อย, ภาวะที่มีความผิดปกติของการเคลื่อนไหวและจำนวนอสุจิน้อย และตรวจที่ไม่พบความผิดปกติ คิดเป็นร้อยละ 25.4, 14.4, 12.0, 4.5, 2.0, 1.0, 0.4, 0.3 และ 24.2 ตามลำดับอัตราการตั้งครรภ์ (pregnancy rate) วิธีฉีดเชื้ออสุจิเข้าในโพรงมดลูก (IUI) มีอัตราการตั้งครรภ์คิดเป็นร้อยละ 14.8 ส่วนใหญ่การตั้งครรภ์เกิดขึ้นจากการฉีดเชื้อ 1-3 ครั้ง คิดเป็นร้อยละ 95.5 อัตราการตั้งครรภ์ด้วยวิธีการปฏิสนธินอกร่างกาย (IVF) การฉีดเชื้ออสุจิเข้าในเซลล์ไข่ (ICSI) และการเจาะดูดเชื้ออสุจิ จากส่วนต้นของท่อนำอสุจิแล้วนำมาฉีดเข้าในเซลล์ไข่ (ICSI-PESA) คิดเป็นร้อยละ 32.3, 28.0 และ 35.3 ตามลำดับ ผลของการตั้งครรภ์ (pregnancy outcome) ของการฉีดเชื้ออสุจิเข้าในโพรงมดลูก (IUI) มีการตั้งครรภ์ทารก 1, 2 และ 3 คน คิดเป็นร้อยละ 71.6, 1.5 และ 1.5 ตามลำดับ และมีการแท้งบุตรคิดเป็นร้อยละ 19.4, การตั้งครรภ์นอกมดลูกคิดเป็นร้อยละ 6.0 สำหรับการปฏิสนธินอกร่างกาย*

(IVF) มีการตั้งครรภ์ทารก 1 และ 2 คน คิดเป็นร้อยละ 30 และ 20 ตามลำดับ มีการแท้งบุตรคิดเป็นร้อยละ 40 และมีการตั้งครรภ์นอกมดลูกคิดเป็นร้อยละ 10 สำหรับการฉีดเชื้ออสุจิเข้าในเซลล์ไข่ (ICSI) มีการตั้งครรภ์ทารก 1, 2 และ 3 คน คิดเป็นร้อยละ 56.5, 17.4 และ 13.0 ตามลำดับ และมีการแท้งบุตรคิดเป็นร้อยละ 13.0 การรักษาด้วยวิธีเจาะดูดเชื้ออสุจิจากส่วนต้นของท่อนำอสุจิ แล้วนำมาฉีดเข้าในเซลล์ไข่ (ICSI-PESA) มีการตั้งครรภ์ทารก 1 และ 2 คน คิดเป็นร้อยละ 66.7 และ 16.7 ตามลำดับ และมีการแท้งบุตรคิดเป็นร้อยละ 16.7

***สรุป**: ภาวะมีบุตรยากชนิดปฐมภูมิมารับการรักษามากกว่าภาวะมีบุตรยากชนิดทุติยภูมิ สาเหตุการมีบุตรยากของคู่สมรสที่มีบุตรยากมากกว่าครึ่งหนึ่ง มีสาเหตุจากทั้ง 2 ฝ่าย สาเหตุการมีบุตรยากของฝ่ายชายและฝ่ายหญิง พบว่ามีสาเหตุจากภาวะต่าง ๆ เหมือนกับที่พบในรายงานอื่น ผลการรักษามีอัตราการตั้งครรภ์ และผลการตั้งครรภ์จากการรักษาด้วยวิธีการฉีดเชื้ออสุจิเข้าในโพรงมดลูก การปฏิสนธินอกร่างกาย และการฉีดเชื้ออสุจิเข้าในเซลล์ไข่ได้ผลทัดเทียมกับรายงานอื่น*