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CONDITION AND PROSPECTS OF USE OF THE SUBSIDIARY REPRODUCTIVE TECHNOLOGIES IN THE TREATMENT OF INFERTILITY UKRAINE

Keywords: *infertility, assisted reproductive technology.*

Abstract. *In Ukraine in 2012, there were 44,707 cases of female and male infertility 11941 (in 2011, respectively, 44071 and 12354 cases). In 2011 it has been made 12775 cycles of assisted reproductive technology (ART) of infertility treatment (2010 - 11144), which constituted 360 per 1 million of population. Pregnancy rate per 100 initiated cycles of IVF in Ukraine in 2011 amounted to 37.8% (in 2010 - 37.4%).*

Introduction

The problem of diagnosis and treatment of infertility remains relevant despite significant advances of reproductive medicine [1]. The demographic situation in Ukraine requires the improvement of new methods of treatments for infertility [2]. Actively developing methodology assisted reproductive technologies [3]. However, the frequency of their use in Ukraine continues to be low, due to the lack of awareness about the effectiveness of fertility treatment using these technologies, low coverage of this issue in the media, poor awareness of doctors regarding the use of technology in the treatment of infertility [4, 5, 7, 8, 9].

The purpose of study

Analysis of statistical information and documentation about infertility and assisted reproductive technologies in Ukraine from 1999 to 2012.

Material and methods

The analysis of statistical reports - form number 41 ("Report on assisted reproductive technology", approved by the Ministry of Health Ukraine 10.12.2001 № 489 and registered with the Ministry of Justice of 25.12.2001, № 1068/6259) RS "Center for Health Statistics, Ministry of Health of Ukraine"

Reports of health care, dealing with infertility treatment methods of assisted reproductive technologies are retrospective in nature and provide an opportunity to analyze the outcomes of treatment cycles started. So reports of treatment cycles started in 1999 were granted in 2001, the year ... Of cycles started in 2011, respectively, in 2013 financial year.

Discussion of results of the study

It is known that the incidence of female infertility is 30% male - 30% blend - 30%, and of unknown origin - 10% [6]. However, the structure of infertility

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in Ukraine in 2011 is the following: 78.9% - female infertility, 21.1% - male (Fig. 1).

According to government statistical reports in Ukraine in 2012, there were 44,707 cases of female infertility and 11941 cases of male infertility, in 2011, respectively, 44071 and 12354 cases. 12579 cases of female infertility and male - 3712 (in 2011, respectively, 12566 and 4159 cases) were registered for the first time in the life.

During 2001-2005, the frequency of male and female infertility was registered almost at the same level (Table 1). Since 2006, frequency of registration of cases of male infertility has increased almost 2 times. However, the prevalence rate of female infertility continues to be higher than in men (3.7 times in 2012). In women it is 3.4 times higher than in men, incidence, ie, newly diagnosed cases of infertility in life.

Recorded frequency of infertility in some areas of Ukraine varies in significant limits. The highest level of female infertility diagnosis in 2012 was registered in Zaporizhia - 17.24 (in 2011 - 15.53 per 1,000 women of childbearing age), Vinnytsia - 4.40 (in

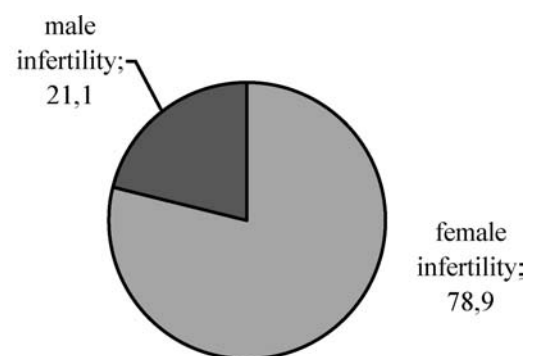


Figure 1. Structure of infertility in Ukraine, % (2012)

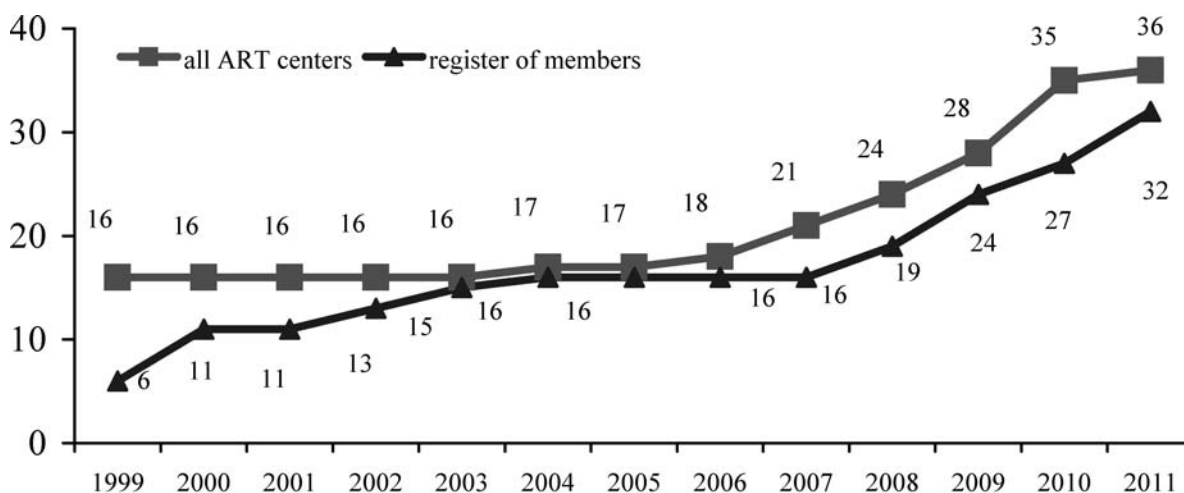


Figure. 2. Registry of reporting hospitals of ART in Ukraine

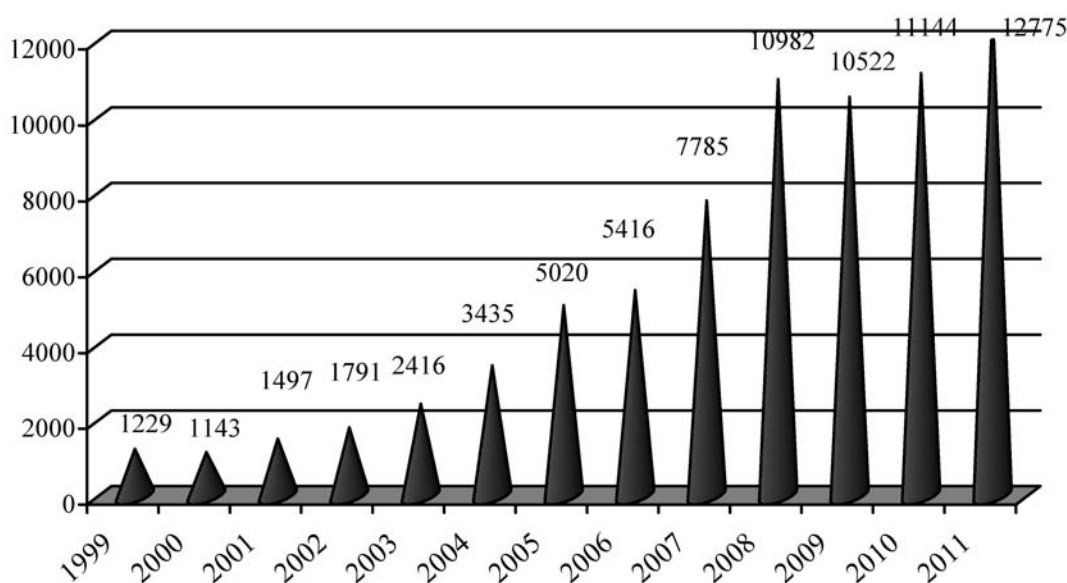


Figure. 3. Number of started cycles of subsidiary reproductive technologies in Ukraine

2011 - 4.20) and Volyn - 4.30 (in 2011 - 4.11) regions. The lowest level of female infertility diagnosis was in Rivne - 2.27 (in 2011 - 2.40) and Luhansk - 2.35 (in 2011 - 2.32) regions.

The highest rate of diagnosis of male infertility during this period was registered in Zaporizhzhya - 12.44 (in 2011 - 11.15 1000 men of reproductive age) and Odessa - 1.90 (in 2011 - 1.90) regions. The lowest rate of diagnosis of male infertility has been in Chernivtsi - 0.03 (in 2011 - 0.04 per 1000) region.

In Ukraine at the beginning of 2013 there are 36 medical institutions involved in fertility treatments, including - 6 of state jurisdiction. All institutions are the members of the Ukrainian Association of Reproductive Medicine, except for two, "Family Planning Clinics problems" (Kyiv) and clinic "Bio-Tech-Com» (Kyiv). Each year, all medical institutions that deal with subsidiary reproductive

technologies must render an account to the MoH Ukraine Order number under 41 (National Register). On the basis of these data formed a report to the European Association of Human Reproduction and Embryology (ESHRE) is formed.

In 2011, the cycles are not performed 3 Centers for Human Reproduction: Clinical Reproductive Medicine "VioTehSom" in Kyiv, Center for Reproductive Medicine, "Bogolyubov" in Volyn region, Zaporizhzhya Regional Rehabilitation Center for reproductive rights in the Zaporozhye region. Clinical problems of family planning (Kyiv) refused to provide a report on cycles started in 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, respectively (Fig. 2).

In 2011, 12,775 treatment cycles were started, during which the intended methods of infertility treatment by means of subsidiary reproductive

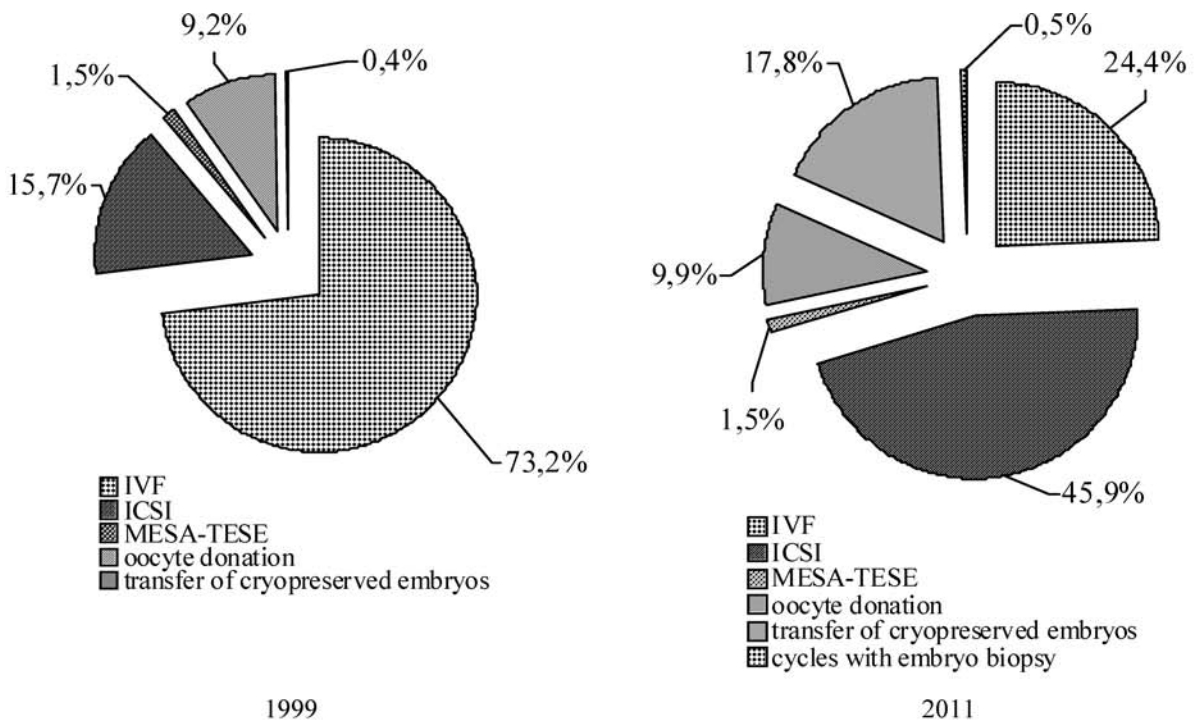


Figure 4. Structure of initiated ART treatment cycles in Ukraine

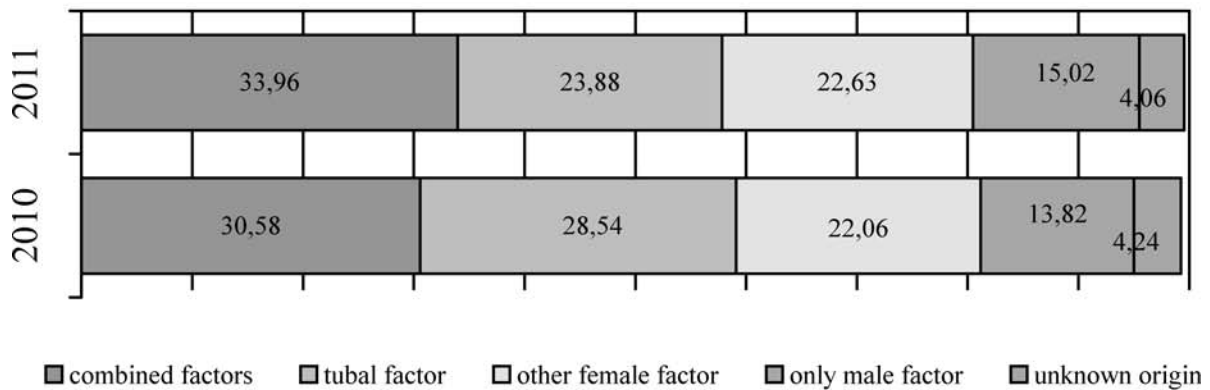


Figure 5. Causes of infertility in ART cycles started in Ukraine (%)

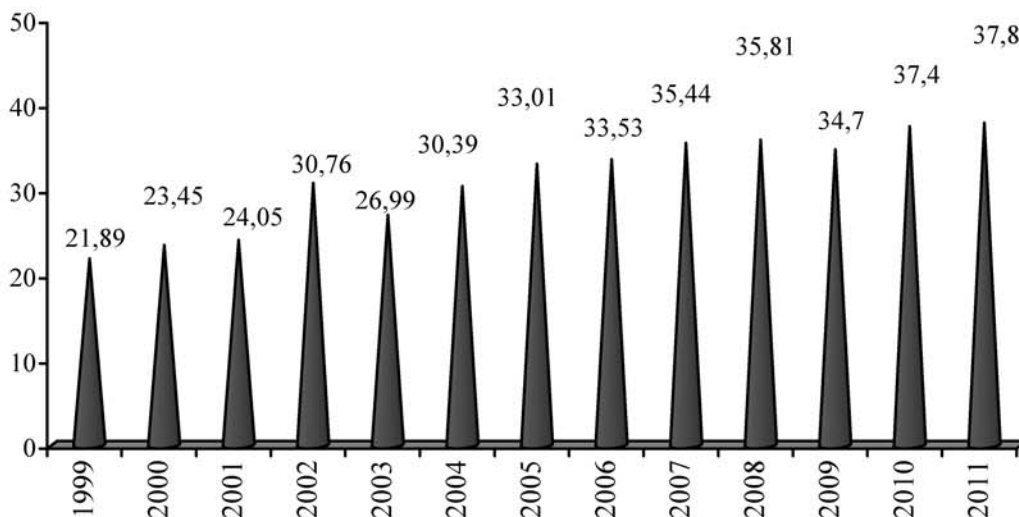


Figure 6. The frequency of clinical pregnancies per 100 treatment cycles initiated by methods of subsidiary reproductive technologies in Ukraine

Table 1

Female and male infertility in Ukraine (2001-2012 years)

Indicators	Years											
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All cases of female infertility	37044	36274	37385	38208	36949	43715	42097	43134	42038	42987	44071	44707
Registered for the first time in my life cases of female infertility	12290	12070	12058	12476	12119	13233	13072	13175	12428	12785	12566	11941
All cases of male infertility	4243	4357	4609	5892	5296	9945	8822	10692	10934	13057	12354	12579
Registered for the first time in my life cases of male infertility	2251	2141	2187	2636	2647	3395	2936	4592	4312	5048	4159	3712

Table 2

The results of ART cycles in Ukraine in 2010/2011 year

Name	IVF	ICSI	OD	Crio	Biops. embr.
Clinical pregnancies (% of cycles started)	38,04/ 38,95	39,16/ 38,17	40,49/ 41,35	31,02/ 33,32	28,57/ 26,32
Among them:	22,08/ 21,32	23,01/ 24,24	25,81/ 28,41	20,03/ 20,32	20,83/ 33,33
– multiple					
– ectopic	3,12/ 1,73	1,85/ 1,56	0,41/ 0,19	1,64/ 1,58	4,17/ 0
– spontaneous abortions	17,20/ 19,84	9,15/ 12,14	11,18/ 16,12	17,34/ 14,51	8,33/ 13,33
– with congenital malformations	0,09/ 0,25	0,11/ 0	0,20/ 0,38	0,15/ 1,06	0/ 0

Table 3

The end of clinical pregnancies in cycles of subsidiary reproductive technologies in Ukraine

Year started treatment ART cycles	At 100 initiated cycles				
	Ectopic pregnancy	Abortion for medical indications	Abortion spontaneous	Childbirth one living fetus	Childbirth and two more live fruits
1999	0,33	0,08	4,23	7,49	2,28
2000	0,09	0,09	4,37	10,76	5,69
2001	0,60	0,33	3,67	11,62	6,75
2002	0,73	0,00	3,96	14,01	8,88
2003	0,87	0,21	3,52	13,33	8,03
2004	0,79	0,12	7,02	15,63	5,79
2005	1,04	0,22	6,08	19,06	5,28
2006	1,20	0,28	7,05	17,26	5,61
2007	1,26	0,03	5,28	20,49	6,64
2008	0,65	0,26	4,12	20,95	8,78
2009	0,79	0,11	4,84	19,52	7,69
2010	0,75	0,15	4,89	21,49	7,05
2011	0,56	0,31	5,67	22,16	6,82

technologies and monitoring of follicle growth (Fig. 3) were intended to be carried out.

Within the cycles initiated in 2011 ICSI constituted to 45.9% (intracytoplasmic sperm) IVF - 24.4%

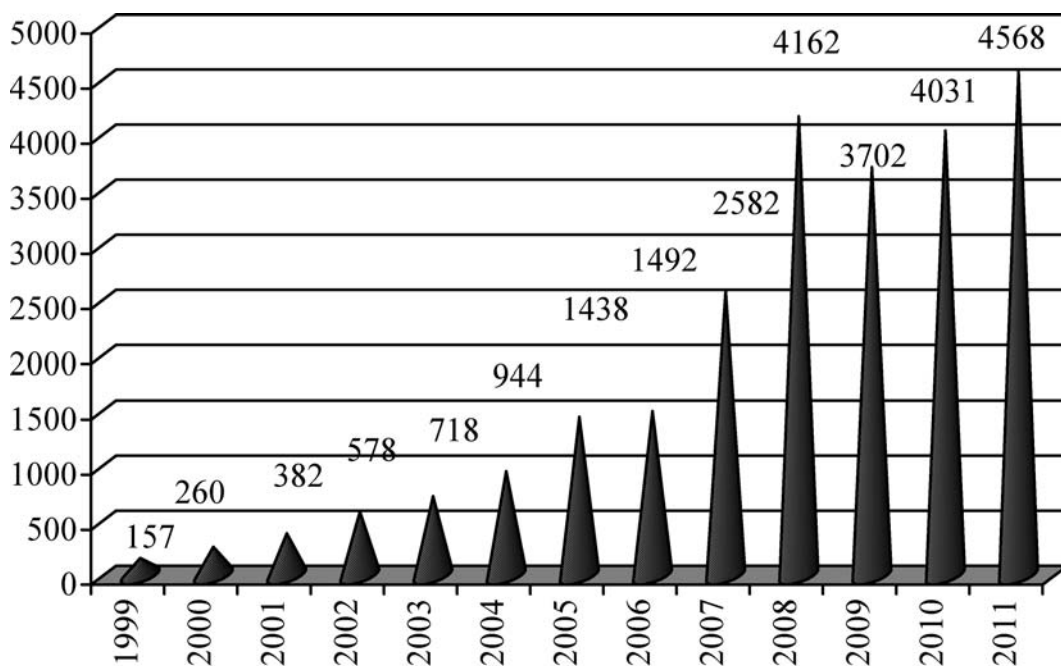


Figure 7. Dynamics of fertility cycles of ART in Ukraine

Table 4

Born alive and dead children with birth defects from 22 weeks of gestation or more when initiated treatment cycles in 2011 by the methods of assisted reproductive technologies in Ukraine

Born	Total	Including types of procedures					
		IVF	ICSI	MESA-TESE	Donation of oocytes	Transfer of cryopreserved embryos	Cycles with embryo biopsy
Living	4568	1103	2239	60	467	691	18
- 22-27 weeks	52 (1,1%)	31 (2,8%)	5 (0,2%)	0	8 (1,7%)	8 (0,8%)	0
- 28 weeks or more	4516 (98,9%)	1072 (97,2%)	2234 (99,8%)	60 (100%)	459 (99,6%)	673 (99,2%)	18 (100%)
Dead	32	10	15	0	0	7	0
- 22-27 weeks	22 (68,8%)	6 (60%)	12 (80%)	0	0	4 (57,1%)	0
- 28 weeks or more	10 (31,2%)	4 (40%)	3 (20%)	0	0	3 (42,9%)	0
With congenital	15 (0,33%) 2010 p. - 4(0,099%)	3 (0,27%)	0	2 (3,33%)	2 (0,43%)	8 (1,31%)	0

(fertilization in vitro - IVF, previous period - in vitro fertilization) cycles with transfer of cryopreserved embryos - 17.8% (Crio), oocyte donation - 9,9% (DO), MESA-TESE - 1,5% and cycles with embryo biopsy - 0,5% (Biops. embr.) (Fig. 4). According to the European Association of Human Reproduction and Embryology (ESHRE) ICSI - cycles constituted 66.7% [5] in 2006.

Among the causes of infertility in cycles initiated in 2011 registered combined factors were registered in 33.96% of cases, tubal factor only - at 23.88%, the other female factor - at 22.63%, only male factor - in 15.02% and idiopathic infertility - in 4.06% of cases (Fig. 5).

Describing the age of patients it should be noted that among the initiated cycles 30-34 age group made up the highest percentage (32.59%) last year, followed by age group 35-39 years (27.61%) and 25-29 years (19, 23%). Patients aged over 40 accounted for 17.09%, less than 25 years - 3.03%.

Pregnancy rate per 100 initiated cycles of IVF in Ukraine in 2011 amounted to 37.8% (in 2010 - 37.4%) (Fig. 6).

The frequency of pregnancy IVF technology distributed as follows: IVF - 38,95%, ICSI - 38,17%, the transfer of cryopreserved embryos - 33.32%, oocyte donation cycles - cycles of 41.35% and a biopsy of the embryo - 26.32 % (Table 2).

In 100 IVF cycles started in 2011 ectopic pregnancy was marked in 0.56% of cases, an abortion for medical reasons was in 0.31% of patients, spontaneous abortion - in 5.67% of cases. The deliveries with one living fetus were 22.16%, two or more living fetuses were in 6,82 patients with infertility (Table 3).

4568 babies were born alive after started in 2011 treatment cycles using subsidiary reproductive technology, among them in term of 22-27 weeks - 52, in terms of 28 weeks or more - 4516. Mortinatalità among infants born after started in 2011 treatment cycles using subsidiary reproductive technologies was 6.97 (in 2010 - 2.23) per 1000 live births and dead (Table 4).

In total, 25014 alive children were born after using treatment cycles by means of assisted reproductive technologies since 1999, in Ukraine (Fig. 7).

Conclusion

The specific structure and a wide range of fluctuations in the prevalence of male and female infertility in some areas of Ukraine need to be paid attention to the quality of professionals for diagnosis and completeness of registration. The effectiveness of assisted reproductive technologies in Ukraine is in accordance with European indexes, but the number of cycles is low. Violation MZ order of Ukraine by medical institutions on reporting the use of ART is accompanied by incomplete elucidation of the achievements of our modern medicine in the field of up-to-date fresh medical technology is inadmissible.

Prospects for further research

To continue work on formulating legal, economic and scientific basis for the development of reproductive medicine.

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СОСТОЯНИЕ И ПЕРСПЕКТИВЫ ИСПОЛЬЗОВАНИЯ ВСПОМОГАТЕЛЬНЫХ РЕПРОДУКТИВНЫХ ТЕХНОЛОГИЙ В ЛЕЧЕНИИ БЕСПЛОДИЯ В УКРАИНЕ

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Резюме. В Украине в 2012 году было зарегистрировано 44707 случаев женского и 11941 мужского бесплодия (в 2011 году, соответственно, 44071 и 12354 случаев). В 2011 году было выполнено 12775 циклов вспомогательных репродуктивных технологий лечения бесплодия (ВРТ) (в 2010 году – 11144), что составило 360 на 1 млн. населения. Частота наступления беременности на 100 начатых циклов ВРТ в Украине в 2011 году составила 37,8% (в 2010 – 37,4%).

Ключевые слова: бесплодие, вспомогательные репродуктивные технологии.

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СТАН ТА ПЕРСПЕКТИВИ ВИКОРИСТАННЯ ДОПОМІЖНИХ РЕПРОДУКТИВНИХ ТЕХНОЛОГІЙ ПРИ ЛІКУВАННІ БЕЗПЛІДДЯ В УКРАЇНІ

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Резюме. В Україні в 2012 році було зареєстровано 44707 випадків жіночого та 11941 чоловічого безпліддя (в 2011 році, відповідно, 44071 та 12354 випадків). В 2011 році було виконано 12775 циклів допоміжних репродуктивних технологій (ДРТ) лікування безпліддя (в 2010 році – 11144), що склало 360 на 1 млн. населення. Частота настання вагітності на 100 розпочатих циклів ДРТ в Україні в 2011 році склала 37,8% (в 2010 – 37,4%).

Ключові слова: безпліддя, допоміжні репродуктивні технології.

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