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Diagnostic tests in women attempting pregnancy

Badania diagnostyczne wykonywane u kobiet starających się o potomstwo

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STRESZCZENIE

BADANIA DIAGNOSTYCZNE WYKONYWANE U KOBIET STARAJĄCYCH SIĘ O POTOMSTWO

Wprowadzenie. Diagnostykę niepłodności rozpoczyna się najczęściej po roku oczekiwania na ciążę bez efektu. Choć zwykle to kobieta pierwsza zgłasza się do lekarza, badania diagnostyczne powinny być prowadzone równocześnie u kobiety i mężczyzny.

Cel pracy. Celem pracy była ocena badań diagnostycznych wykonanych u kobiet starających się o potomstwo.

Materiał i metody. Badanie przeprowadzono w okresie od lutego do kwietnia 2014 roku w Ginekologiczno-Położniczym Szpitalu Klinicznym im. K. Marcinkowskiego w Poznaniu na oddziałach ginekologicznych. Badaniami objęto 104 pacjentki w trakcie diagnostyki i leczenia niepłodności. Narzędzie badawcze stanowił autorski kwestionariusz ankiety.

Wyniki. Najliczniejszą grupę stanowiły kobiety w przedziale wiekowym od 31 do 35 lat (44%), najmniej liczną poniżej 25 roku życia (1%). Najczęstszym proponowanym badaniem był szczegółowy wywiad położniczy w połączeniu z badaniem ogólnym (64%), ginekologicznym (36%) oraz USG przezpochwowym (30%). U 96% ankietowanych przeprowadzono wywiad lekarski, badanie ogólne i ginekologiczne. Metody diagnostyczne jak profil hormonalny, ocena owulacji, badania laboratoryjne były przeprowadzone u 70% badanych. W badaniu uwzględniono również pytanie dotyczące metod diagnostycznych zastosowanych u partnerów osób ankietowanych. U 35% mężczyzn wykonano jedno badanie diagnostyczne, u 34% dwa badania i u ponad 10% – 4 badania.

Wnioski. 1. Na diagnostykę niepłodności najczęściej decydują się pary w przedziale wiekowym od 26 do 30 roku życia nie posiadające potomstwa. 2. Wywiad lekarski, badanie ogólne, ginekologiczne, ultrasonograficzne oraz profil hormonalny, są najczęściej wykonywanymi badaniami diagnostycznymi u kobiet starających się o potomstwo.

Słowa kluczowe: **niepłodność, diagnostyka, badanie ginekologiczne, profil hormonalny**

ABSTRACT

DIAGNOSTIC TESTS IN WOMEN ATTEMPTING PREGNANCY

Introduction. Diagnosis of infertility usually begins after a year of waiting for pregnancy without any effect. Although it is usually woman who first reports to the doctor, the diagnostic tests should be conducted simultaneously with a woman and a man.

Aim. The aim of the study was to evaluate the diagnostic tests performed in women seeking an offspring.

Material and methods. The survey was conducted from February to April 2014 in the gynaecological wards of the Gynaecology and Obstetrics Clinical Hospital of the Karol Marcinkowski University of Medical Sciences in Poznan. The study included 104 patients during diagnosis and treatment of infertility. The research tool was the author's questionnaire.

Results. The largest group comprised of women aged from 31 to 35 years (44%), the least numerous group – of women under 25 years of age (1%). The most commonly proposed trial was a detailed obstetric interview together with the general one (64%), then gynaecological examination (36%) and transvaginal ultrasound (30%). In 96% of the respondents diagnostic tests included conducted medical history, as well as physical gynaecological and ultrasound examination. Diagnostic methods, like hormonal profile, assessment of ovulation, laboratory tests were performed in 70% of patients. The survey also included questions concerning the

diagnostic methods used in the partners of the respondents. In 35% of men one diagnostic test was performed, in 34% two tests and in more than 10% – 4 tests.

Conclusion. Those who decide for the diagnosis of infertility are usually couples aged from 26 to 30 who do not an have offspring. Medical history, physical examination, gynaecological ultrasound and hormonal profile are the most commonly performed diagnostic tests for women applying for posterity.

Key words: infertility, diagnostics, gynaecological examination, hormonal profile

INTRODUCTION

Infertility is defined by the World Health Organisation as the failure to achieve a clinical pregnancy after 12 months or more of regular (3-4 times a week) unprotected sexual intercourses [1].

It is estimated that 50-80 million people worldwide seeks medical treatment due to infertility. However, up to date in Poland no epidemiological studies have been completed; thus, it is said that this problem affects only 10-15% of couples. In France, infertility is diagnosed in about 14% of couples, in the UK in almost 17%, whereas in the USA in nearly 14%. Therefore, infertility has not only become an issue of an individual, but also a problem of the entire society, since total fertility rates in the abovementioned countries, ranging from 1.3 to 2.03, do not ensure generational replacement. In fact, the major contributors to such situation are late marriages, increase in contraception use, lifestyle changes and conscious maternity postponement [1,2,3,4,5].

Fertility is influenced by such factors as age, body mass, diet, stimulants, physical activity, as well as exposure to chemical and physical agents. The peak of fertility occurs between 20-25 years of age; moreover, in women aged 35 and more, fertility is significantly decreased, and after 40 years of age the fertility rate is very low. Women older than 40 need nearly 2 years to become pregnant which may suggest that many will fail to have offspring without proper diagnostics and treatment. In addition, age in men negatively influences the production and the quality of semen. In fact, it was proven that the period when pregnancy is attempted in women whose partners are older than 45 years of age is five times longer in comparison to men 20 years younger [6, 7, 8].

A decrease in fertility is not only associated with aging of reproductive organs due to postponing maternity, but also stems from the negative influence of professional, social and lifestyle factors. Among the infertile couples, the female factor, constituting 60%, is more often detected. However, in the course of prolonged pregnancy attempts, it is male infertility which becomes dominant, and is associated with ineffective treatment in men [8].

Infertility diagnosis usually begins one year after attempting pregnancy with no results. Although it is the woman who first reports to the doctor, the diagnostic tests should be simultaneously performed in a woman and in a man. Furthermore, earlier introduction of the diagnostic tests should be considered in women aged over 35 with menstrual disorders, suspected reproductive organs pathology, as well as in cases of male infertility. Therefore, the aim of the tests is to establish the causes underlying the inability to become pregnant, further prognosis for a spontaneous pregnancy, as well as proper treatment introduction. According to the recommendations of Fertility and Sterility Special Interest Group of the Polish Gynaecological Society and Polish Society of Reproductive Medicine and Embryology, examinations in women should include medical interview, physical and gynaecological examination, hormonal tests of choice, as well as imaging tests, such as ultrasound, hysterosalpingogram (HSG), and hysterosalpingo contrast sonography (HyCoSy). In addition, laparoscopy with oviduct patency evaluation is the method of choice in clinically suspected oviduct lesions, whereas hysteroscopy is employed in suspected uterine lesions. In terms of men, the basic diagnostic tool is the semen test, however, endocrinological assessment and ultrasound should be performed following abnormalities detected in the physical examination, medical interview, and the semen test [2].

The infertile couples treatment is focused on obtaining pregnancy and giving birth to a living, healthy offspring. Thus, the optimal procedure is the fertility disorder diagnosis and the earliest rational treatment introduction [8].

AIM

The aim of the research was the diagnostic tests assessment in women attempting pregnancy. The basic questions were as follows:

1. Which couples decide to perform the diagnostic tests underlying infertility?
2. What is the influence of the period since the beginning of pregnancy attempts on undergoing infertility diagnostics?
3. Which diagnostic methods are most frequently employed in infertility diagnostics?

MATERIAL AND METHODS

The research was conducted between February and April 2014 at gynaecological wards in the Gynaecology and Obstetrics Clinical Hospital of the Karol Marcinkowski University of Medical Sciences in Poznan. The study included 104 patients in the course of infertility diagnostics and treatment. An original authors' questionnaire served as the basic research tool, comprising 30 questions which included 4 open, and 26 closed ones. Moreover, the participation in the study was voluntary and anonymous. Finally, the obtained data was analysed quantitatively and qualitatively.

RESULTS

The research study included 104 patients in the course of infertility diagnostics and treatment. Women aged between 31 and 35 years constituted the most numerous group (44%), whereas women under 25 years of age represented the least numerous one (1%). The detailed data are presented in Figure 1.

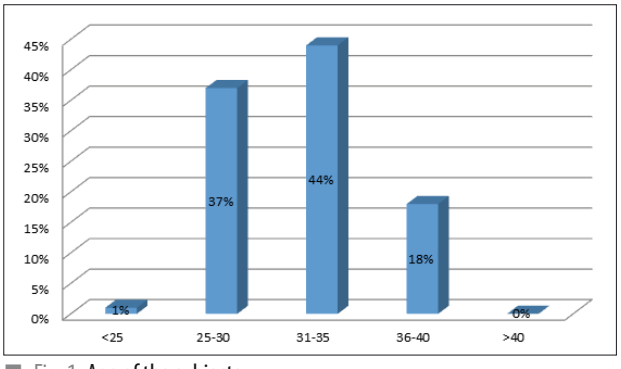

Fig. 1. Age of the subjects

The majority of subjects was from the urban areas (75%), whereas 25% were from the rural regions. What is more, 72% of the subjects received higher education, 27% had secondary education, and 1% had basic education.

The most abundant group were women who started pregnancy attempts between the age of 26 and 30 years (51%), similarly men with the same age (52%). The data are shown in Figure 2.

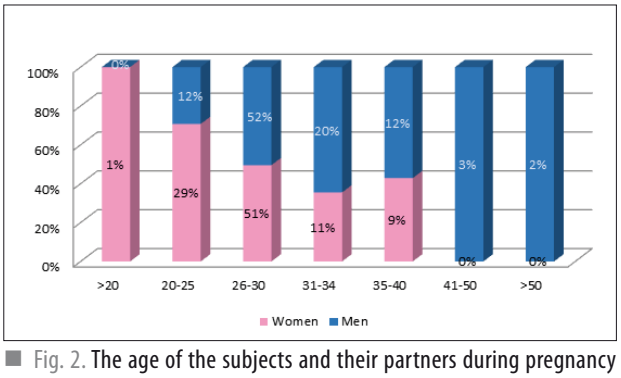

Fig. 2. The age of the subjects and their partners during pregnancy attempts

The period when subjects started pregnancy attempts at the beginning of the diagnostic tests was varied. The majority of couples (44%) began infertility diagnostics between the 7th and 12th month, however, 15% started the procedures after 2 years from the first pregnancy attempts. The detailed data are presented in Figure 3.

Another research aspect was the infertility diagnostic methods suggested by the doctor. The most frequent examination was a detailed obstetric interview connected with physical and gynaecological examination, as well as with transvaginal USG (Figure 4.).

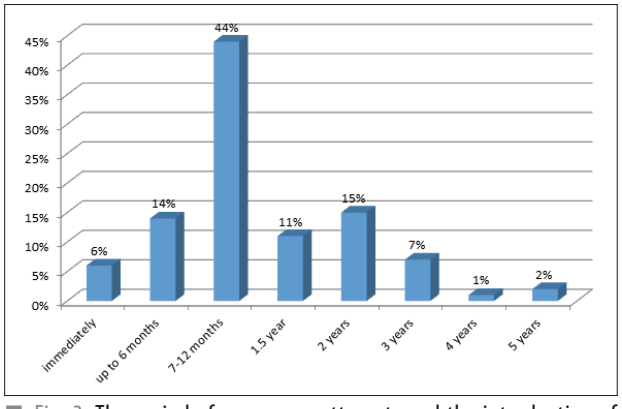

Fig. 3. The period of pregnancy attempts and the introduction of infertility diagnostics

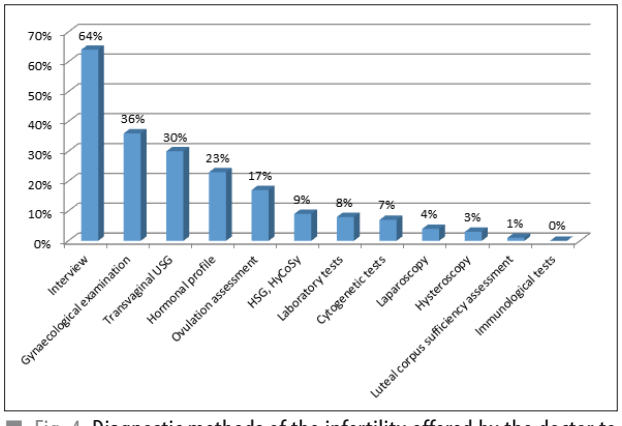

Fig. 4. Diagnostic methods of the infertility offered by the doctor to respondents

All the subjects participated in at least 2 out of 12 diagnostic tests (Figure 5.). Medical interview, as well as physical and gynaecological examination was performed in 96% of subjects, whereas transvaginal USG was performed in 90%. Furthermore, such diagnostic methods as hormonal profile, ovulation assessment or laboratory tests were implemented in 70% of subjects. Additionally, HSG and HyCoSY were employed in 68% of patients, surgical diagnostics and laparoscopy were performed in 48%, and hysteroscopy was implemented in 38% of subjects.

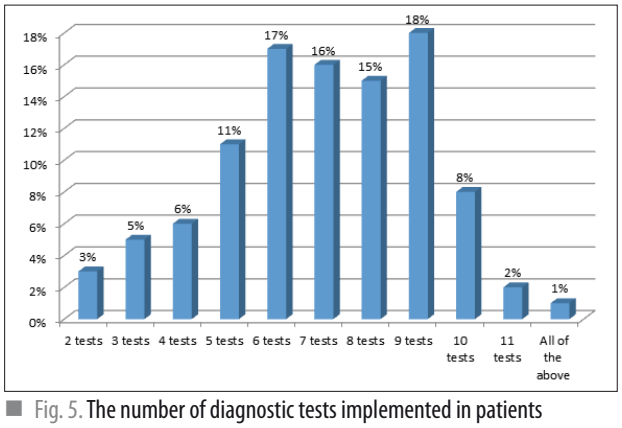

Fig. 5. The number of diagnostic tests implemented in patients

The questionnaire also included a question regarding diagnostic methods employed in the subjects' partners. One diagnostic test was performed in 35% of men, two were implemented in 34%, and four were employed in more than 10%. Most frequently, the tests included the semen tests, medical interview, physical examination, function tests, and testicular USG. In 6% of cases no diagnostic tests were employed. Detailed data are shown in Figure 6.

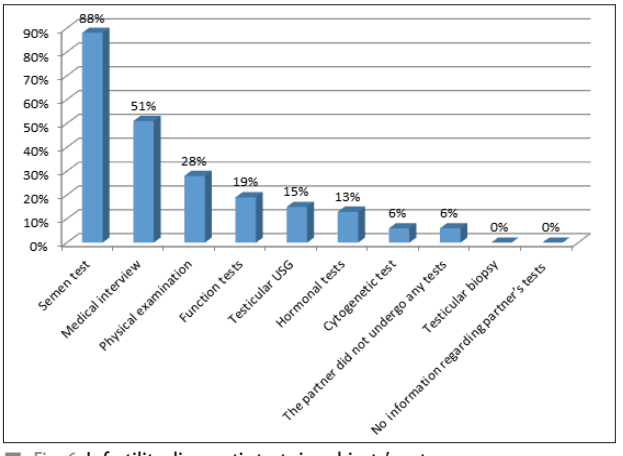

Fig. 6. Infertility diagnostic tests in subjects' partners

DISCUSSION

Infertility diagnostic tests research performed in couples attempting pregnancy is scarcely represented in Polish literature. In the available studies, there are only a few reports concerning the knowledge of the Polish society regarding infertility and the associated dysfunctions. The study presents most frequently performed infertility diagnostic tests, the age range, as well as the period since pregnancy attempts.

The conducted research indicates that the most numerous group attempting pregnancy were both women and men aged 26-30. The influence of age on pregnancy attempts may stem from an increase in the age of people getting married. Currently, the average age of women becoming pregnant is estimated at 27 years of age, and men at 29. However, the maximum fertility period occurs at 20-25 years of age, and then decreases. In fact, the neuroendocrine changes and decrease in oocyte quality are associated with biological organism aging what directly influences both partners' fertility [9,10].

According to the analysed research, the most frequently suggested diagnostic test in women was a detailed obstetric interview connected with the physical, gynaecological, ultrasound examinations and hormonal profile tests. In fact, all the patients were subjects to at least 2 out of 12 diagnostic tests. The most commonly performed diagnostic examinations in men were the semen tests, medical interview, physical examination, function test and testicular USG. Nevertheless, 6% of men did not undergo any diagnostic test. According to the recommendations of the *Fertility and Sterility Special Interest Group of the Polish Gynaecological Society* and the *Polish Society of Reproductive Medicine and Embryology*, women should participate in the medical interview, physical and gynaecological examination, selected hormonal tests, imaging examinations, such as ultrasound, hysterosalpingogram, and hysterosalpingosonography contrast. As far as clinically suspected oviduct lesions are concerned, the method of choice is laparoscopy with oviduct patency evaluation, whereas hysteroscopy should be employed in case of the suspected uterine lesions. On the other hand, the semen test is the basic diagnostic test in men, and the ultrasound examination should be performed following abnormalities in physical examination, medical interview and the semen test. However, infertility diagnostics should be implemented in both partners. In fact, in the course of infertility tests, reproductive health elements influencing reproduction efficiency should be carefully analysed in association with the reproductive ability and potential assessment in both partners [2,11].

CONCLUSIONS

1. Infertility diagnostics is most often implemented in childless couples between 26 and 30 years of age.
2. Medical interview, physical, gynaecological and ultrasound examinations, as well as hormonal profile are the most frequently applied diagnostic tests in women attempting pregnancy.

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