

## A RETROSPECTIV STUDY OF MALE INFERTILITY CASES IN ARAD

**Botezatu Dragos, Ioiart Ioan, Deme Paul, Popescu Sebastian**

“VasileGoldis” Western University of Arad, Faculty of Medicine, Pharmacy and Dentistry Arad, Romania

**ABSTRACT.** Male infertility is a growing concern for many couples, and the incidence appears to grow especially in developed and developing countries. Our objective was to investigate the causes of male infertility in our area (Arad county). We analyzed 206 cases with abnormal sperm parameters, clinical evaluation, testicular ultrasound and hormonal testing was performed in all cases. Our results showed a significant percentage of idiopathic infertility, and the most frequent cause or association with infertility was the presence of varicocele. The incidence of varicocele cases was a slight bigger than in literature. More research in this field must be done, and probably should be focused on genetic or microbiology, because to form a clinical point of view more than one third of infertile men appear healthy and can't be offered no proper treatment.

**KEYWORDS:** Male infertility, Semen quality, Varicocele

### INTRODUCTION

Infertility is a growing concern for many couples and affects approximately 15% of the couples. According to the definition of World Health Organization “infertility is the inability of a sexually active, non-contraceptive couple to achieve spontaneous pregnancy in one year”[1]. One in eight couples have this problem with the first pregnancy and one out of six couples encounter this problem when trying to have a second or third child. Infertility affects both men and women, 3% of women are unable to

remain pregnant although they wish it, and 6% of pairs can't have as many children as desired. In 50% of the infertile couples male infertility with abnormal semen parameters is associated. It is considered that the problem appears more often when both partners have low fertility than in the couples where only one has reduced infertility, the defect appears to be compensated by the healthy partner.

According to the EAU (European Association of Urology), the known cases can be grouped as follows: [2].

Diagnosis	Unselected patients	Azoospermic patients
<b>All</b>	100%	11.2%
<b>Infertility of known (possible) cause</b>	42.6%	42.6%
Maldescended testes	8.4	17.2
Varicocele	14.8	10.9
Sperm autoantibodies	3.9	-
Testicular tumour	1.2	2.8
Others	5.0	1.2
<b>Idiopathic infertility</b>	30.0	13.3
<b>Hypogonadism</b>	10.1	16.4
Klinefelter's syndrome (47, XXY)	2.6	13.7
XX male	0.1	0.6
Primary hypogonadism of unknown	2.3	0.8
Secondary (hypogonadotropic)	1.6	1.9
Kallmann syndrome	0.3	0.5
Idiopathic hypogonadotropic	0.4	0.4
Residual after pituitary surgery	<0.1	0.3
Others	0.8	0.8
Late-onset hypogonadism	2.2	-

Constitutional delay of puberty	1.4	-
<b>General/systemic disease</b>	2.2	0.5
<b>Cryopreservation due to malignant disease</b>	7.8	12.5
Testicular tumour	5.0	4.3
Lymphoma	1.5	4.6
Leukaemia	0.7	2.2
Sarcoma	0.6	0.9
<b>Disturbance of erection/ejaculation</b>	2.4	-
<b>Obstruction</b>	2.2	10.3
Vasectomy	0.9	5.3
Cystic fibrosis (CBAVD)	0.5	3.1
Others	0.8	1.9

## MATERIALS AND METHODS

We looked at the activity of our outpatient clinic and introduced in the study all cases of males who came specifically with male infertility disorders but also patients that came with other urological disorders but were diagnosed with male infertility or modified spermograms. All patients were clinically examined, with great attention especially in the genital area where all abnormalities (like varicocele) or congenital malformations (like cryptorchidism, hypospadias) were noted. Semen samples were collected from all patients, with exceptions of 3 minors: a 10 years old boy with a chromosomal disease and deficit in male sexual organs development, a 11 years old boy with primary hypogonadism, and a 15 years old boy also with primary hypogonadism. The samples were collected in polypropylene containers after a minimum 4 days of sexual abstinence and were processed immediately using the WHO recommended guideline [3].

Abnormal semen status was classified as follows: oligozoospermia: spermatozoa < 15 million/mL; asthenozoospermia: < 32% progressive motile spermatozoa; teratozoospermia: < 4% normal forms.

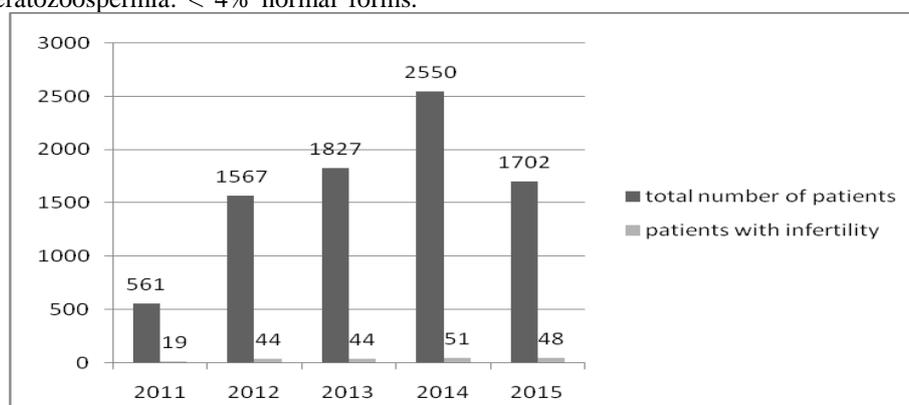
Often, all three anomalies occur simultaneously, which is defined as oligo-asteno-teratozoospermia (OAT) syndrome. Azoospermia is the complete absence of spermatozoa.

The levels of reproductive hormones testosterone (T), luteinizing hormone (LH) and follicle-stimulating hormone (FSH) were measured by electrochemiluminescence immunoassays (ECLIA), the normal reference ranges for LH, FSH, and T hormones were 1.7-8.6 mIU/mL; 1.5-12.4 mIU/mL; and 9.9-27.8 nmol/mL, respectively [4].

In some cases standard karyotype and Yq microdeletion testing was performed.

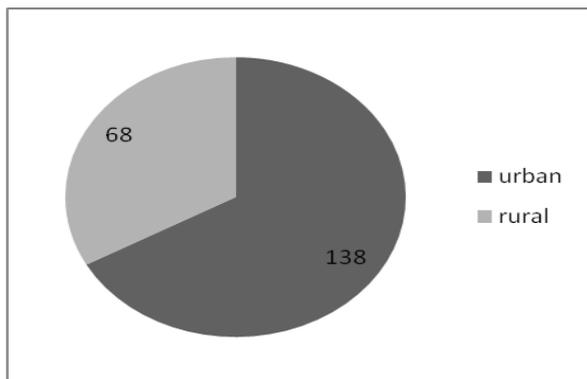
## RESULTS

We wanted to see what is the percentage of patients with male infertility compared with all the activity in our Urologic Clinic, and we found out that only about 2,586% of all our patients came for male infertility related problems. The percentage was stable in the last 5 years, as it can be seen in the graphic below (2.91% in 2011, 2.80% in 2012, 2.40% in 2013, 2.00% in 2014 and 2.82% in 2015).

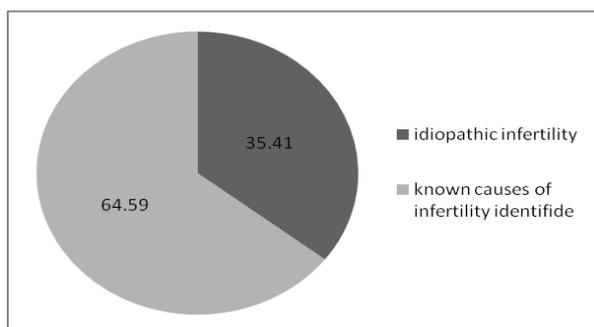


The average age of the patients was 31.92 years old, with the extremes of 10 years old, a boy with chromosomal disease and deficit in male sexual organs

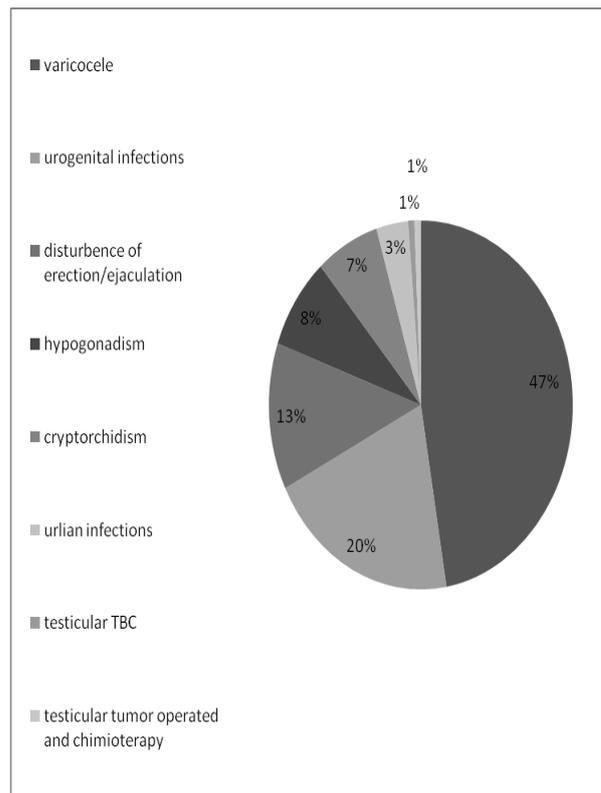
development, and 65 years old childless gentlemen who came to our clinic for acute prostatitis and was diagnosed also with grade III varicocele and oligozoospermia. Most of the patients came from urban medium, and only 33% came from rural medium.



From the cohort 35.41% of cases were idiopathic, no known cause of infertility was identified, and in the rest of 64.59% we found known causes that could explain the reduced semen parameters like : varicocele, urogenital infections, disturbance of erection/ejaculation, hypogonadism, cryptorchidism, history of urogenital infections, testicular tuberculosis and operated testicular tumors with chemotherapy.



The most significant association with infertility was the presence of varicocele. Varicocele is a physical abnormality present in 11.7% of adult men and in 25.4% of men with abnormal semen analysis [5]. The exact association between reduced male fertility and varicocele is unknown, but a recent meta-analysis showed that semen improvement is usually observed after surgical correction [6]. Varicocelectomy can reverse sperm DNA damage [7].



We also found patients with other urological pathology that is not necessarily associated with infertility, like: clinical and ultrasound modifications in the testicles (decrease in volume, micro-calcifications) (9 cases), hematospermia (7 cases), urogenital malformations (6 cases: 4 hypospadias, 1 unilateral kidney agenesis and 1 sinus inversus), hydrocele and epididymar cyst (7 cases), phimosis (2 cases) and over active bladder (9 cases).

## DISCUSSION

The present study was performed to investigate the most frequent causes of infertility in our area and to see if the findings are consistent with the prevalence presented in the literature. The focus was on clinical evaluation of the patients, more detailed investigations like genetic testing was performed only in selected cases and is not relevant from a statistic point of view. We can conclude that a big percentage 35.41% of cases were idiopathic similar with other studies [8] which shows that more research must be made in this field.

The most frequent case of infertility, or more correct, the most frequent clinical association with male infertility was the presence of varicocele. In our clinical study of 206 patients with male infertility we discovered a bigger incidence of varicocele than the one in literature. The diagnosis was clinical and in most cases varicocelectomy was performed. Although treatment of varicocele in infertile men may be effective, in adolescents there is a significant risk of

overtreatment: most adolescents with a varicocele will have no problem achieving pregnancy later in life [9].

Urogenital infections and history of urlian infection in childhood was also a significant finding. In acute cases antibiotic treatment was offered, but in chronic obstructive cases only assisted fertility procedures like in-vitro fertilization IVF or intracytoplasmatic sperm injection ICSI, sometimes with testicular spermatozoa extracted by biopsy (TESE), can help patience father their own biological child [10].

Our study is on a small cohort and the conclusions cannot be generalized, but what is clear is that more research in this field must be done, and probably should be focused on genetic or microbiology, because from a clinical point of view more than one third of infertile men appear healthy and we can't offer no proper treatment.

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