Clinical Criteria of male Patient with Infertility (Comparative Study)

Zaid Saad el-din Khudher
Department of Surgery, College of Medicine, University of Mosul, Mosul.

Abstract:

To determine and compare the clinical criteria of male patients with infertility in urban & rural areas in Ninavah province. From first of Jan. 2002 to end of Dec. 2002, 144 male infertile patients from urban areas compared to 82 infertile male patients from rural areas in Ninavah province. Full history & physical examination beside semen analysis were arranged to all patients. 118 (81.9%) in urban & 58 (70.7%) in rural were with primary infertility; 26 (18%) in urban & 24 (29.3%) in rural were with secondary infertility. 27 (18.7%) in urban & 10 (12.2%) in rural were with previous related surgical operations. 112 (77.7%) patients in urban & 51 (62.1%) patients in rural areas were smokers. 54 (37.5%) patients in urban & 30 (36%) patients in rural areas were with varicocele. Smoking & varicocele were frequent finding in the medical history & physical examination with a result comparable to the literatures. Percentage of patients treated with Antibiotics for urinary & genito urinary tract infection is higher in Urban (25.6%) as compared to (6.9%) in Rural areas, probably due to higher educational state in urban areas.

Introduction:

Infertility is defined as the inability to conceive after one year of unprotected sexual intercourse. Infertility affect 15% of couples; roughly 40% of cases involve male factors, 40% involve female factors and remainder involves both sexes (1).

The chance of normal couple conceiving is estimated to be approximately 25% per month, 75% by 6 months and 90% by one-year (2). A well-performed male evaluation should be rapid cost effective and non-invasive; the male infertility evaluation consists of 4 kinds of information.

<table>
<thead>
<tr>
<th>History</th>
<th>Semen analysis</th>
<th>surgical treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormones</td>
<td></td>
<td>medical treatment</td>
</tr>
<tr>
<td>Physical examination</td>
<td>Other tests</td>
<td>sperm enhancement</td>
</tr>
</tbody>
</table>

The corner stone of male partner evaluation is history taking which should include medical, surgical, sexual, fertility, family, medication, social and occupational history (1). The physical examination should be geared toward identifying any abnormalities that may be associated with infertility (2).

Smoking and varicocele are frequent finding in medical history and physical examination (3). Lab testing is an important component of male infertility evaluation including urinalysis; semen analysis is primary source of information sperm production, hormone integrity and
Clinical Criteria of male Patient with Infertility (Comparative Study)

reproductive tract patency, hormone assessment, antisperm antibodies and chromosomal study.

Approach at medical therapy for male infertility includes stimulation of spermatogenesis at testicular level, improvement of epidydimal function (sperm maturation) influence on sperm transport and activation of sperm metabolism with improvement of sperm motility (4).

Patients and methods:
From first of Jan.2002 to the end of Dec. 2002 ; 144 urban male infertile patients aging 20-45 years attended Al-Razi teaching hospital in Mosul and a private clinic were analyzed and compared to 82 rural infertile male patients aging 22-51 years attended at same hospital &private clinic through out same period.

Full history and physical examination applied to all patients.

The patients were investigated with semen analysis and classified into four groups;
Group 1; azoospermia 37(25.6%) of patients in urban compared to 18(21.6%) in rural.
Group 2; sperm concentration less than 20 x 10^6 sperm/ ml. They were 26(18.1%) in Urban compared to 12(14.6%) in Rural.
Group 3; sperm concentration more than 20 and less than 50 x 10^6 sperm/ ml, they were 41(28.5%) in Urban compared to 18(21.9%) in Rural.
Group 4; sperm concentration more than 50 x 10^6 sperm/ml they were 38(26.4%) in Urban compared to 34(41.4%) in Rural.

Retrograde ejaculation detected in 2(1.4%) of patients in Urban after achievements of post-ejaculation sample and detection of sperms in this sample.

Results:
In Urban out of 144 patients 118(81.9%) were with primary infertility & 26(18%) with secondary infertility; while in Rural from 82 infertile men during the study period 24 (29.3%) were with secondary infertility,while 58 (70.7%) were with primary infertility.

History revealed that 27(18.7%) of patients in Urban were with previous related surgical operations ; 10 (12.2%) were with previous related surgical operation in Rural areas.

In Urban 3(2.1%) with bilateral undescended testes;6(4.2%) with unilateral undescended testis&18(12.5%) with previous hernia operation. In Rural 2 (2.4%) patient with bilateral undescended testes.

2 (2.4%) patient with unilateral undescended testes &6 (7.3%) patients with previous hernia operation.

Family history:In Urban revealed 7(4.8%)&in Rural 4 (4.8%) patients with positive family history of cryptorchidism.

Medical history: In Urban revealed 37(25.6%) patients treated with Antibiotics for UTI while in Rural 5 (6.9%) patient treated with antibiotics for repeated UTI;also in Urban 6(4.2%) treated for DU with Cimetidin.

Social history: revealed in Urban 112(77.7%)& in Rural 51 (62.1%) were smokers ;also 3(2.1%) were alcoholic in Urban.

occupational history: revealed that 2 (2.4%) reported exposure to radiation “Depleted uranium in the war 1991”in rural areas .

Physical examination:- showed that in Urban 23(15.9%) patients with small size testes compared to 12(14.6%) patients in Rural.

Regarding varicocele ; in Urban 54(37.5%) patients proved to have varicocele; 11(7.6%) grade 1; 23(15.9%) grade 2; &20(13.8%) grade 3 ;while in Rural 30 (36.6%) of patients with varicocele.

12 (14.6%) With grade 1; 9 (10.9%) With grade 2; &9 (10.9%) with grade 3 .

Semen Analysis: in Urban revealed 37 (25.6%) patients with Azoopermia (group I), compared to 18(21.9%) in Rural.

26 (18.1%) with (group II) compared to 12(14.6%) in Rural.
41 (28.5%) with (group III) compared to 18(21.9%) in Rural.
38 (26.4%) with (group IV) compared to 34(41.4%) in Rural.

In Urban patients 92(63.8%) compared to 54 (65.8%) patients in Rural shows abnormal values for sperm motility were detected (asthenospermia); while 63 (43.7%) patients in Urban compared to 36(43.9%) in Rural showed more than 50% of sperm were with abnormal morphology.

Testicular Biopsy: done in 24(16.6%) of patients in Urban ‘compared to 12 (14.6%) patients in Rural with Azoopermia ;result of testicular biopsy in following table :
Clinical Criteria of male Patient with Infertility (Comparative Study)

Results of testicular biopsy Treatment: 52(63.4%) of patients were treated medically using vitamin E and hCG 5000 IU / week injection for four weeks, varicocelectomy done in 13(15.8%). a group of patients 17(20.7%) referred for further treatment in other centers.

<table>
<thead>
<tr>
<th>Histopathology report</th>
<th>Urban No.(% of patients)</th>
<th>Rural No . (% of patients)</th>
<th>India No.(% of patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>3 (12.5)</td>
<td>2 (16.6)</td>
<td>10(15.6%)</td>
</tr>
<tr>
<td>Hypospermatogenesis</td>
<td>11 (45.8)</td>
<td>8 (66.6)</td>
<td>42(65.6)</td>
</tr>
<tr>
<td>Sertoli cell only synd.</td>
<td>4 (16.6)</td>
<td>2 (16.6)</td>
<td>2(3.2%)</td>
</tr>
<tr>
<td>Maturation arrest.</td>
<td>2 (8.3)</td>
<td>1 (8.3)</td>
<td>2(3.2%)</td>
</tr>
<tr>
<td>Tubular hyalinization.</td>
<td>4 (16.6)</td>
<td>1 (8.3)</td>
<td>8(12.5%)</td>
</tr>
</tbody>
</table>

Discussion:
The inability to conceive a child is most often viewed as a private matter but public health perspectives and skills can contribute greatly to our knowledge about infertility and the development of effective and rational public policy for prevention, access to health care and regulation of new technologies (5).

In our study as in study done Germany (El-Mulla-KF)(3), Smoking and varicocele are frequent finding in the medical history and physical examination were 112(77.7%) of patients in Urban & in Rural 51(62.1%) of patients smokers and varicocele detected in 54(37%) patients in Urban in 30 (36.6%) of patients in Rural which is similar to a study done in U.K. (Comhaire F. et al)(6).El-Mulla-KF et al concluded that smoking & varicocele affect sperm function & that the standard semen parameters alone are insufficient to evaluate the influence of both factors on human male fertility (3). In our study there are 37(25.7%) of patients in Urban & 5 (6.1%) of patients in Rural who were treated for repeated urinary and genital tract infections as in study in England (Comhaire F. et al) who proved that there are several mechanisms acting in synergism that can impair sperm characteristics of patients with gland infection.

In our study patients from urban & rural areas showed no significant differences in the results.

Male subfertility / infertility is acknowledged to contribute significantly to infertility problems experienced by couples. In some instances morphological and physiological defects known to interfere with normal sperm function can be identified, however in others no obvious cause of fertilization failure can be identified (8).

The morphology of testicular biopsy achieved in our study as in study done in India (Singh Paei) (9) could be categorized into 5 groups as shown in table previously.

In our study 2 (2.4%) patients with bilateral undescended testes and as shown by (Cendron et al)(10) unilateral cryptorchidism slightly decreases fertility and bilateral cryptorchidism result in a significant reduction in fertility. Also our data goes with study done in U.S.A. by (Lee P A)(11) paternity was compromised after unilateral cryptorchidism were 2 (2.4%) of patients with unilateral cryptorchidism. 52 (63.4%) of patients in our study were treated medically using vitamin E and HCG 5000 IU / week injection for four weeks, varicocelectomy done in 13 (15.8%). 17 (20.73%) patients referred for further treatment to other centers in Baghdad.

Conclusion:
Smoking & varicocele were frequent finding in the medical history & physical examination with a results comparable to the literatures… Percentage of patients treated...
with Antibiotics for urinary & genito urinary tract infection is higher in Urban (25.6%) as compared to (6.9%) in Rural areas..probably due to higher educational state in urban areas.

References:
2. Patrick & Walsh, Campbell s Urology, seventh edition, vol 2, chapter 43 Male infertility by Mark Sigman; Stuart S. Howards (1287-1292).