

ANTIBIOTIC THERAPY OF GENITAL INFECTION IN INFERTILE MALES

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Objective: Evaluate the antibiotic pattern and result of treatment of genital infection in male patients with idiopathic infertility.

Patients and Methods: Prospective study on 63 patients. We cultured the first voided urine, semen and swabs taken from the anterior urethra for bacteria, Chlamydia, Ureaplasma urealyticum and Mycoplasma hominis. This report focuses on 40 (64 %) patients in whom genital infection was found and the results of treatment were obtained.

Results: Of the 40 patients infected and treated with organism specific antimicrobials 25 % achieved successful impregnation of their wives.

Conclusion: Extensive microbial investigations are necessary when genital infection is suspected as the cause of male infertility. Organism-specific treatment can lead to successful pregnancies of the wives. Treatment failure may indicate the presence of more subtle underlying pathological process and early testicular biopsy is recommended when the spermogram shows a count below one million per cubic milliliter or azoospermia.

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Male infertility poses a challenging problem and should be managed clinically in organised and systematic way¹. Despite thorough clinical and laboratory evaluation some patients will be categorised as having idiopathic infertility¹. Primary infertility applies when conception cannot be achieved after at least one year of marriage till presentation. Secondary infertility applies when there has been a previous pregnancy then the husband becomes unable to impregnate the same or another wife. In the face of demanding infertile couple, the treatment may be based on hopeful trials using different empirical medications and remedies. In a previous report² we described the methodology for studying 63 male patients to evaluate the role of genital infection in such conditions. The

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conclusion was that detailed investigations which are not routinely carried out in the usual clinical setting can reveal an underlying treatable cause namely the presence of in apparent genital infection in a significant number of patients with idiopathic infertility.

This paper describes the pattern of genital infections encountered and the antibiotic pattern in 40 male patients with idiopathic infertility.

METHODS

This work was started as a prospective study on 63 patients. We cultured the first voided urine, semen and swabs taken from the anterior urethra of these patients for bacteria, Chlamydia, Ureaplasma urealyticum and Mycoplasma hominis. Gram staining was routinely done on all specimens and all were negative for

Neisseria gonorrhoea. Bacterial cultures and sensitivity pattern were done in the standard method.

Two techniques were used for chlamydia isolation and identification. These involved the use of chlamydia culture on McCoy cells with culture confirmation test and the direct fluorescent identification of Chlamydia trachomatis. The all liquid media (MYCOFAST ALL-IN) kits were used for the identification of mycoplasma. These kits are currently in use to identify urogenital Ureaplasma urealyticum and Mycoplasma hominis with a sensitivity and specificity comparable to the standard A7 and A8 agar culture methods³⁻⁵.

Our definition of successful treatment is the subsequent husband's ability to impregnate the wife.

RESULTS

Table 1. Type of infertility, age of patients, duration of infertile, results of semen analysis, history of sexually transmitted disease (STD) and physical examination findings in 9 patients whose wives achieved successful pregnancy after treatment of genital infection.

Pt No	Type	Age Yrs	Duration infertility Yrs	Presentation	STD	Physical examination
1	Primary	34	3	Asthenospermia	Yes	Normal
2	Primary	32	1	Oligospermia	No	Normal
3	Primary	37	10	Asthenospermia	No	Normal
4	Primary	36	11	Pyospermia	No	Enlarged Epididymii
5	Primary	33	9	Pyospermia	No	Tender lt Epididmis
6	Primary	26	1	Oligospermia	No	Normal
7	Primary	29	1	Oligospermia	Yes	Enlarged rt Epidid
8	Primary	25	4	Pyospermia	No	Normal
9	Primary	28	3	Pyospermia	Yes	Normal

Except for patients with bacterial infection, both the husband and wife were treated with the specific antimicrobial therapy for a minimum of two weeks. Nitrofurantoin was avoided in all cases because of the known propensity to suppress spermatogenesis¹.

Table 1 shows the initial clinical presentation, duration and type of infertility and the findings on physical examination. The type of isolated organism in each of the 9 patients, origin of the specimen, antimicrobials given to the couple and its duration are shown in Table 2. Successful treatment was achieved even in patients who remained infertile for long periods of time (Table 1) as long as their seminal analysis results showed persistent improvement with treatment. Those who did not improve or deteriorated to severe oligospermia or azoospermia underwent a testicular biopsy to assess their infertility.

Table 2. Type of isolated organisms, origin of specimen, treatment given and its duration in 9 patients whose wives achieved pregnancy

Pt No	Organisms	Origin of specimen	Treatment	Duration
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1	Ureaplasma	Urine	Doxycycline	6 weeks
2	Ureaplasma	Urine, semen,	Doxycycline	3 weeks
	Mycoplasma	Urethral swab		
3	Ureaplasma	Urethral swab	Doxycycline	3 weeks
	Mycoplasma			
4	Ureaplasma	Semen and urethral	Tetracycline	6 weeks
		swabs	Trimethoprim	12 weeks
5	Ureaplasma	Urine, semen, urine	Doxycycline	2 weeks
	Mycoplasma		Norfloxacin	2 weeks
6	Hemophilus-	Urethral swab	Doxycycline	6 weeks
	para-influenza			
7	Ureaplasma	Semen, urethral swab	Doxycycline	3 weeks
	Chlamydia		Norfloxacin	6 weeks
8	Ureaplasma	Semen, urethral swab	Sulpha	4 weeks
	B-strept		Trimethoprim	4 weeks
9	Ureaplasma	Urine, urethral swab	Doxycycline	4 weeks
		& semen	Norfloxacin	4 weeks

Of the 63 patients admitted in the study, 40 were found to harbour an organism in the urogenital tract, as described in a previous report². Out of these 40 we excluded 4 from the interpretation of the results since they failed to attend for treatment initiation. Out of the remaining 36, nine (25 %) patients showed improvement in the results of the semen analysis in response to the treatment and pregnancy of the wives was subsequently documented.

Twenty seven patients did not have a favourable response. Thirteen patients (48 %) were infected with *Ureaplasma urealyticum*, six (22 %) with *mycoplasma*, five (19 %) with *Chlamydia trachomatis* and three (11 %) with other bacteria. Twelve (33.3 %) patients underwent testicular biopsy because of progressive deterioration of semen analysis to severe oligospermia or azoospermia. Six of these patients were found to have spermatogenic maturation arrest and the other six were found to have obstructive azoospermia and were referred for microsurgical epididymovasostomy with or without sperm-egg microinjection technique. The results of the latter technique have not been established.

DISCUSSION

The all liquid culture method used to identify *mycoplasma* infection³⁻⁵ is a convenient method and the results can be obtained much faster with less contamination than conventional methods³⁻⁵. The all liquid media (MYCOFAST All-in) can also indicate the severity of infection whether mild, moderate or severe and provide the sensitivity to 3 antibiotics (minocycline, tetracycline and ciprofloxacin). For those patients in whom genital pathogen was isolated and identified appropriate treatment was prescribed. Other antibiotics such as trimethoprim and sulpha may be administered to the patient when other clinical findings such as chronic prostatitis is suspected. Data has been presented before to suggest that *Ureaplasma urealyticum* infection in the genital tract, with or without other bacteria, may have an important role in infertility⁶. When the infection was eradicated, successful pregnancies of the wives was reported in 60 % of the cases⁶.

The problem of drug resistance may be overcome by using a combination therapy or prolonged treatment. In heavy infection such as those isolated from the urine, seminal secretion and urethral swab the initiating of treatment with combination therapy must be commenced to overcome the possible development of drug resistance⁷.

Chlamydia trachomatis has been linked to reproductive failure^{8,9}, but its low isolation rate from Saudi obstetrics and gynaecology patients suggest that the organism is probably introduced by Saudi males from overseas sources¹⁰.

CONCLUSIONS

Male patients with initial diagnosis of idiopathic infertility should be investigated for genital tract infection. We prefer this approach to empirical treatment and drug trials. Testicular biopsy is helpful to decide on subsequent line of management. Further studies in the field of infertility especially in relation to genital infection as a causative factor is encouraged because it is a treatable condition especially with the advent of the newly developed methods of organism identification and effective antibiotics therapy.

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