UREAPLASMA UREALYTICUM IN MALE INFERTILITY

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Semen examination with special reference to semen analysis and culture for *Ureaplasma urealyticum* was carried out in 50 male infertile patients in the age group of 25 to 40 years, attending a private infertility clinic. Isolation of *Ureaplasma urealyticum* in 14 (28%) patients and the abnormalities in count and motility of spermatozoa suggest that *Ureaplasmas* may play a role in human male infertility.

Key words : *Ureaplasma urealyticum*, Male, Infertility.

Some studies have implicated the micro-organism, T-mycoplasma, now known as *Ureaplasma urealyticum* (*U. urealyticum*), as an aetiologic agent of human infertility.[1,2] Seminal cytology is considered as a sensitive indicator of the functioning of the germinal epithelium. Besides cytology, the spermatozoal motility is probably the most important single parameter for assessing the fertilising capacity of human semen. Therefore, an attempt was made to determine whether defects in motile activity are associated with the presence of this organism in the semen of patients with unexplained infertility.

Materials and Methods

Fifty male patients in the age group of 25 to 40 years, attending a private infertility clinic were investigated. Semen was collected by masturbation into a sterile container after three days of sexual abstinence. Routine semen analysis was carried out and the criteria for judging the fertility were as described by Busolo et al.[4] These include a count of 30 million spermatozoa/ml, atleast 60% showing good motility after 2 hours, and 75% of spermatozoa with normal forms. Though essential, it was difficult to get a control group for this study.

The media used for the isolation of *U. urealyticum* were PPLO broth supplemented with urea (pH 6-6.5), and PPLO agar, and the identification procedures were as described by Finegold and Martin.[5] *U. urealyticum* was identified by hydrolysis of urea to ammonia resulting in a rise in the pH and a visible change in the indicator. If a change occurred, the sample was subcultured into another PPLO broth containing urea. The specimen was considered positive only when the secondary broth changed colour and colonies on PPLO agar were detected by Shepard's urease test.[5]

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Results

All the 50 cases studied had semen abnormality either with respect to volume, count or grade of motility. Morphological abnormality of the spermatozoa was within the normal limits (10-40%) in all the cases. Table I shows results of semen analysis. *U. urealyticum* was isolated in 14 patients. (Cases showing mixed infection are not included in this study).

Comments

The attachment of T-mycoplasma to spermatozoa is known to lower the motility causing infertility in 20-40% of couples.[6,7] Our rate of isolation of *Ureaplasma urealyticum* was 28%, and in all these patients, the spermatozoal motility was less than 60% at 2 hours. However, the other patients also showed similarly low rates of motility. MacLeod and Gold[8] have shown that motility of the spermatozoa is the most important characteristic related to the case of conception. Even when the spermatozoal count

Table I. Correlation of semen analysis and *Ureaplasma urealyticum* isolation.

Semen analysis	culture for *U urealyticum*	
	Positive (14 cases)	Negative (36 cases)
Volume		
Less than 1.5 ml	6	9
More than 1.5 ml	8	27
Count (Range 20-80 million/ml)		
Less than 1 million/ml	4	9
1-20 million/ml	7	11
More than 20 million/ml	3	16
Motility after 2 hours		
Grade I poor slugglish non-progressive	9	13
Grade II struggling progressive	4	16
Grade III Moderate progressive active	1	6
Grade IV Swift excellent motility	0	1

was less in 50% of the patients, morphological abnormalities as checked by phase contrast microscopy and hematoxylin and eosin staining of the centrifuged deposit smears, were within the normal prescribed limits.

Fowlkes et al[9] noted two morphologic features of spermatozoa from ureaplasma positive patients by scanning electron microscopy, (1) the presence of clusters of small sphere shaped particles adherent to the cells, and (2) a large number of coiled tails. It seems that *Ureaplasmas*, due to their adhesion to the spermatozoa, affect the motility and thereby play a role in human male infertility.

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