INTRAUTERINE INSEMINATION OF HUSBAND'S WASHED SPERMS

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SUMMARY

Intrauterine insemination of washed sperms has shown great promise in infertile couples since the method of sperm and ova maintainance has been developed in IVF technique. This study of 25 cases has shown a pregnancy rate of 24% with substantial improvement in motility, percentage and grading, after sperm washing. This therefore can be useful and cheap method for many infertile cases when poor motility, hostile cervical mucous and unexplained infertility create problems in conception.

Introduction

Artificial insemination of husband's semen, has been used for many years with the hope of helping infertile couples, where the cervical mucous is hostile to sperms or in cases of oligospermia (Nachitgall and Faure, 1979). The motility of human sperms has always foxed the clinician for so many years, giving poor results. Improvement in sperm motility can now be achieved by various methods essentially used for IVF technique. Culture media play an important role in facilitating fertilization by nourishing the ova and the sperms.

Intrauterine insemination has been tried in the past with poor results in cases of poor motility and the infection rate and subsequent PID resulting from direct insemination caused serious concern amongst gynaecologists. Semen washing has shown improvement in sperm motility thereby improving the success rate of intrauterine insemination.

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Material and Methods

A study of 25 patients was conducted in a private clinic, where intrauterine insemination was done after washing the husband's sperm.

Table I shows that these patients belonged to five groups, poor count and poor motility (11), normal count and poor motility (6), negative post coital test (PCT) (2), poor cervical mucous (4), and unexplained infertility (2).

TABLE I

Poor Count + Poor Motility	11
Normal Count + Poor Motility	6
Negative PCT	2
Poor Cervical Mucous	4
Unexplained Infertility	2
Total	25

Semen specimens were obtained by masturbation in the clinic and were allowed to liquify. The volume, consistancy, initial count, grade of motility and presence of any inclusions was noted. The sperms were then washed twice in nutrient medium Ham's F-10 supple-

mented with human AB serum. The pellet was then resuspended in a small quantity of medium and superimposed with about 1 ml of the same medium and subjected to incubation at 37°C whereby motile sperms swarm up leaving behind most of the dead sperms along with other inclusions like pus cells, etc., which settle down. This supernatant is then carefully removed and used for intrauterine insemination after noting the count, motility, grade of motility and presence of any inclusions.

Results

Twenty five patients had intrauterine insemination in 35 cycles, giving a mean of 1.4 insemination cycles per patient. Six patients conceived giving a pregnancy rate of 24% (Table II).

TABLE II

Number of patients	25
Number of cycles	35
Average cycles	1.4
Pregnancy	6
Success rate	24%

Of the 11 patients with poor count and poor motility, 2 patients conceived, 2 of the 6 patients with normal count and poor motility, 1 of the 2 with negative post coital test and 1 of the 4 with poor cervical mucous conceived. The 2 patients with unexplained infertility failed to conceive.

The patients are divided into two groups for comparison of total counts before and after washing. The first group consists of patients with a count of 45 million/ml and above and the 2nd group below 45 million/ml. It is seen from Table III that in the first group the mean count was 65.88 million/ml before washing which has fallen to 43.82 million/ml after washing whereas in the second group the mean count was 29.42 million/ml which has fallen to 20.84 million/ml. Thus it is evident that there is a fall in sperm count after washing.

TABLE III

Count: 45 Million/ml. and above	
Mean before washing	Mean after washing
65.88 million/ml.	43.82 million/ml.
Count: Below 45 million/ml.	
Mean before washing	Mean after washing
29.42 million/ml.	20.84 million/ml.

Similarly motility was also classified into 2 groups 45% and above and below 45%. In the first group mean motility was 62.57% which has increased to 74.14%, whereas in the 2nd group the mean motility has increased from 37.14% to 60.36% indicating that there is a definite increase in the percentage motility after washing (Table IV). Besides the percentage motility the grade of motility also improved considerably.

TABLE IV

Motility—45% and above	
Mean before washing	Mean after washing
62.57%	74.14%
Motility—Below 45%	
Mean before washing	Mean after washing
37.14%	60.36%

Discussion

The efficacy of intrauterine insemination has long been discussed in the literature. The methodology however has changed considerably with the development in the field of IVF. Toffle *et al* (1985) in their study done between 1981-1983 have shown an overall pregnancy rate of 17.4%. In a more recent study

Confino *et al* (1986) have reported an overall pregnancy rate of 30% after intrauterine insemination of husband's washed sperms. However this is only in a selected group of infertile couples. In their study this technique has not proved very effective in cases of oligospermic males; none of the 27 couples with oligozoospermia achieved pregnancy. Dimarzo and Rakoff (1986) have also shown an overall pregnancy rate of 30% with the occurrance of pregnancy in 2 of the 9 couples with male factor contributing to infertility. In the present study 4 out of 17 patients with male factor infertility have conceived and 2 out of 6 patients with cervical factor infertility became pregnant.

It is evident from several studies like those of Davajan *et al* (1983), Marre *et al* (1983), Confine *et al* (1986), Dimarzo and Rakoff (1986), Toffle *et al* (1985), that intrauterine insemination has proved useful in bypassing the cervical barrier in cases of cervical factor. In cases of oligospermia deposition of sperms directly into the uterine cavity prevents intravaginal and intracervical loss of sperms there by increasing the number of sperms at the fertilization site.

In conclusion the results of this study indicate that though there is a reduction in total count there is a considerable increase in the percentage motility and the grade of motility with a good success rate. In addition the procedure is cheap and helps in separation of seminal plasma thus resulting in substantial reduction of antibodies. It also helps in separation of motile sperms from dead ones and the other debris like pus cells immature forms, epithelial cells etc.

However a large group of patients needs to be evaluated before comming to a final conclusion.

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