The Effect of Cervical Canal Cleaning Before IUI in Infertile Couples

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Received January 2010; Revised and accepted April 2010

Abstract

Objective: Intrauterine insemination (IUI) is known as a routine method for infertility treatment. The effectiveness of IUI is not identical in all cases. So in this study to evaluate different methods of IUI in order to increase pregnancy rate, IUI with cleaning cervical canal by swab is compared to IUI without cervical canal cleaning.

Materials and methods: This study was conducted from 2008/2/1 to 2008/9/30 in Mirza–Kochak–Khan Infertility center. Totally 224 cases were selected for IUI divided into two groups. Group one (n=112) had cervical cleaning with swab before IUI and group two (n=112) was control group. Pregnancy rate were compared in two groups.

Results: Two groups were matched regarding age, type of infertility and number of follicles. Pregnancy rate in cervical canal cleaning (group one) and control group (group two) was 15.1% and 9.8% respectively. The difference was not significant.

Conclusion: In this study with cleaning cervical canal by swab before IUI there was a non–significant increase in pregnancy rate.

Keywords: cervical canal aspiration, cervical canal cleaning, IUI, ovulation induction, unexplained infertility

Introduction

Intra uterine insemination has an improved value in the treatment of selected women with low fertility (1, 2). Intra uterine insemination is also used as a known treatment for unexplained infertility and mild male factor infertility (3). It is known to be a more conveni-
bryo also have been studied (8,9).

Although with using of IUI we can bypass cervical mucus and its unwilling effects but some of its effects still exist. So cervical mucus aspiration before embryo transfer may increase pregnancy rate.

The present study aimed to answer the question if cervical mucus removal before IUI improves the outcome of IUI.

**Materials and methods**

In Mirza – Kochak – Khan infertility center of Tehran University, after primary assessment, the cases of mild male factor infertility and unexplained infertility who entered in IUI cycles from 2008/2/1 till 2008/9/30 totally 224 couples took part in an open labeled study. They were divided into two groups according to random numbers table. Group one (n=112) had cervical cleaning with swab before IUI and group two (n=112) was control group. Exclusion criteria’s were azoospermia and severe male infertility. Inclusion criteria’s were normal HSG and normal physical exam. Transvaginal sonography at the beginning of menstrual cycle was done. Induction of ovulation was done using clomiphene citrate 10 mg/day from day 3 for 5 days and was continued with daily injection of gonadotropin (Menogon, 75 IU, FERRING, Germany) until at least one follicle of 18 mm in diameter was found in transvaginal ultrasonography.

HCG (Choriomon, IBSA, Switzerland) 10,000 IU was injected intra muscularly and after 36–38 hours IUI was done. In group one cervical mucus was removed roundly and gently with 3 to 5 swabs wetted with normal saline.

IUI was done using ROCET cath-eter (ROCKET medical, UK) for all IUI cases. As we didn’t have any certain document in cervical canal cleaning before IUI, all patients informed about this procedures then they selected to take part in this study. Statistical analysis was done using variances and independent sample t-test in SPSS version 14. Significant difference was set at p <0.05.

**Results**

The mean value of age in group one was 28.9 years and in group two was 27.7 years. There was no significant difference in means of age and type of infertility between two groups (Table 1). The mean number of follicles larger than 18 mm on the day of HCG administration were 2.8 and 3.3 in group one and two respectively. Although the number of follicles in group two was more than group one, the rate of pregnancy was lower (9.8% in group two versus 15.1% in group one). The mean duration of infertility in group one was 4.9 years and in group two was 4 years (p=0.03). Number of large follicles on the day of HCG administration showed negative correlation with duration of infertility and basal serum FSH level (p= –0.03). There was no statistically significant difference in endometrial thicknesses between two groups (Table 2).

**Discussion**

In our study although statistical differences were not shown between two groups but cervical mucus cleaning, which is more available and cheaper than cervical

### Table 1. The comparison age and duration of infertility between groups with independent IUI

<table>
<thead>
<tr>
<th></th>
<th>IUI With cervical cleaning (n=124)</th>
<th>IUI Without cervical cleaning (n=124)</th>
<th>P–Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (year)</td>
<td>28.9 ± 5.2</td>
<td>27.7 ± 4.8</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>(Mean ± SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infertility duration (year)</td>
<td>4.9 ± 2.9</td>
<td>4 ± 2.7</td>
<td>0.03</td>
</tr>
</tbody>
</table>

### Table 2. The comparison of outcome measures between two groups

<table>
<thead>
<tr>
<th></th>
<th>IUI With cervical cleaning (n=124)</th>
<th>IUI Without cervical cleaning (n=124)</th>
<th>P–Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of follicles</td>
<td>2.8 ± 1.4</td>
<td>3.3 ± 1.1</td>
<td>0.001</td>
</tr>
<tr>
<td>Number of Menogon</td>
<td>3.9 ± 1.4</td>
<td>3.8 ± 1.2</td>
<td>0.62</td>
</tr>
<tr>
<td>Pregnancy rate</td>
<td>1.14 ± 0.35</td>
<td>1.10 ± 0.29</td>
<td>0.31</td>
</tr>
</tbody>
</table>
mucus aspiration improved outcome of IUI and we had more clinical pregnancies in the group with cervical cleaning.

In Mansour et al study cervical mucus aspiration before embryo transfer during IVF accompanied with improving pregnancy rate (10). The mechanism of cervical cleaning effect on pregnancy rate is not clearly known. Cervical mucus limits catheter removal of embryo into the uterus cavity. In Berkkanoglu et al study entranced cervical mucus reduced implantation rate of embryo (11). Also, catheter covered with cervical mucus can transport superficial bacteria into the uterine cavity during passage of catheter. The entrance of bacteria to uterine cavity reduces clinical pregnancy with stimulating uterus contractions which cause reverse effects in outcome of IUI (12). In Erhan-Simsek study in 2008 cervical mucus aspiration before IUI improved outcome of IUI (13). Existence of inappropriate agent in cervical mucus can be recognized by post coital test but currently this test has no essential mission in the follow up of infertility. In the study of Eskandar et al patients with increased improper mucus in the endometrial cavity, showed decreased pregnancy rate (8,14). In present study although in group one the average of age was non significantly higher than group two and this factor might have a reverse role in fertility in group one but the rate of pregnancy in the patients with cervical mucus cleaning in group one was more than group two. Duration of infertility in group one was 4.8 years versus group two which was 4 years. With regard to this point that duration of infertility may reversely affect the outcome of IUI, still a higher clinical pregnancy in group one can explain the improving effect of cervical mucus cleaning in pregnancy rate. In group one the mean number of follicles was lower than group two (2.8 versus 3.3). In spite of this difference, we observed a higher pregnancy rate in group one which emphasizes the value of cervical mucus cleaning during IUI.

Acknowledgement
This study was carried out with the kind cooperation of the participating patients. The authors wish to express sincere gratitude and appreciation to their colleagues in Mirza–Koochak–Khan

Reference