

The Importance of Postcoital Test in Evaluation of Cervical Factor*

SERVİKAL FAKTÖRÜN DEĞERLENDİRİLMESİNDE POSTKOİTAL TESTİN ÖNEMİ

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SUMMARY

Postcoital test, sperm count of canalis cervicalis and the secretion in posterior vaginal fornix and evaluation of cervix according to Insler's cervical scoring were performed in 35 fertile and 80 infertile women during preovulatory period of cycle.

Poor negative (+) in 25%, Fair (++) in 45%, Good (+++), in 25%, Excellent (+++++) In 5% In fertile cases, postcoital test results were determined as: Poor (negative) in 2.8%, Fair (negative) in 11.5%, Good (negative) in 25.7%, Excellent in 60%.

In the infertile group;

The mean number of sperm in posterior vaginal fornix: 7.1 ± 2.1 /HPF, and the mean number of sperm in canalis cervicalis: 6.3 ± 2.2 /HPF the mean cervical score: 13.1 ± 1.9 .

In the fertile group, the mean number of sperm in posterior vaginal fornix was 13.9 ± 2.6 /HPF and the number of sperm in canalis cervicalis was 14.1 ± 1.2 /HPF and the mean cervical score was estimated as 12.8 ± 1.6 .

There wasnt any significant difference between two groups in regard to the cervical scores ($p > 0.05$). But the mean number of sperm of fertile cases in both canalis cervicalis and in posterior vaginal fornix were significant higher than the mean number of sperm of infertile cases ($p > 0.05$). In comparison of PCT between ASA(+) and ASA(-) cases in infertile cases, no significant difference was detected ($p > 0.05$).

Key Words: Postcoital test, Insler's cervical scoring system, ASA (antisperm antibody), Unexplained infertility

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Today applicant of the infertility clinics are too numerous to be underestimated. Cervical factor is a very significant step in infertility evaluation diagnosing the

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ÖZET

80 infertil ve 35 fertil kadında, siklusun preovulatuvar fazında vajen arka forniks sıvısında sperm sayısı, servikal kanal sperm sayısı belirlendi ve Insler'in servikal skorlama sistemine göre skorlama yapıldı. Sims-Huhner PKT uygulandı. İnfertil olguların %25'inde postkoital test sonucu negatif, %45'inde orta, %20'sinde iyi, %5'inde çok iyi olarak değerlendirildi.

Fertil olgularda ise postkoital test sonucu %14.3'ünde negatif, %25.7'sinde iyi, %60'ında çok iyi bulundu, infertil grupta, vajen arka forniksindeki ortalama sperm sayısı 7.1 ± 2.1 , servikal kanalda ortalama sperm sayısı 6.3 ± 2.2 /HPF, ortalama servikal skor 13.1 ± 1.9 idi. Fertil grupta ise vajen arka forniksindeki ortalama sperm sayısı 13.9 ± 2.6 /HPF, servikal kanal ortalama sperm sayısı 14.1 ± 1.2 /HPF ve ortalama servikal skor 12.8 ± 1.6 olarak bulundu.

Her iki grup karşılaştırıldığında, servikal skor açısından her iki grup arasında anlamlı bir fark yok iken ($p > 0.05$), fertil olguların hem servikal kanalda hem de vajen arka forniks ortalama sperm sayısı infertil olgularından anlamlı olarak yüksekti ($p > 0.05$). İnfertil olgularda, ASA(+) ve ASA(-) olgular arasında, postkoital testi sonucu açısından anlamlı bir fark bulunamadı ($p > 0.05$).

Anahtar Kelimeler: Postkoital test, Insler'in servikal skorlama sistemi, antisperm antikor (ASA), açıklanamayan infertilite

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disorders of sperm-cervical mucus relations (1). The disorders of cervix and cervical mucus had been kept responsible for infertility (2). In 10 to 30% of women, however, more meticulous investigation on infertile cases excluding the male factor revealed that the actual rate couldn't be more than 5% to 10% (2-3).

MATERIALS AND METHODS

This study included a group of 80 infertile and 35 voluntary fertile women whose ages were between 20

to 35 years and attended to infertility clinic of Zeynep Kamil Maternity Hospital, between 1985-1992 March. Fertile group consisted of women who had at least one delivery and had regular menses and in gynecologic examination no pathology was detected.

All of the cases in the study group had regular menstrual periods and bilateral patent tubes checked by Hysterosalpingography and Laparoscopy. Presence of ovulation was confirmed by endometrial biopsy dating and follicular measurement. Spermogram of partners were within normal limits, (volume: 2-8ml, counts/ml: 50×10^6 and over, motility: 60% and over), PKT and ASA levels of cervical mucus and maternal blood were

determined during preovulatory period of cycle. The technique used was in vivo Sims-Huhner postcoital test.

The aim of the study was to investigate whether there was significant difference in PKT between fertile and infertile cases and to determine if the presence of antisperm antibody (ASA) in blood serum and cervical mucus had any effect on the PKT results.

We determined ASA in the sera and cervical mucus of women by the ELIZA method. Level below 75'u was considered negative while levels above 75'ii were considered positive.

RESULTS

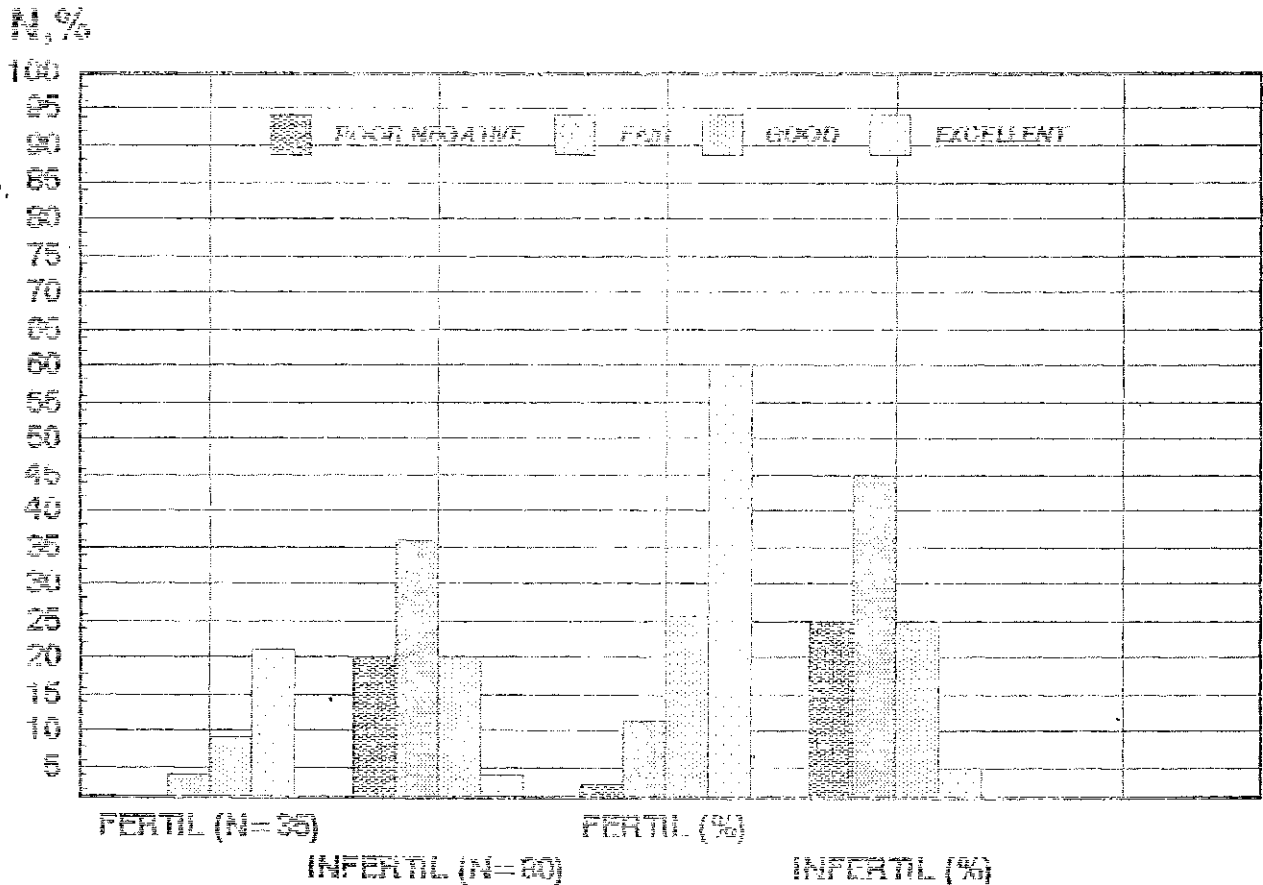
In our study, sperm count of 35 fertile and 80 infertile women in vaginal posterior fornix and in canalis were evaluated according to the Insler's cervical scoring system. In the fertile group, the mean number of sperm in canalis cervicalis was 14.1 ± 1.2 /HPF and the mean cervical score was estimated as 12.8 ± 1.6 .

In the infertile group, mean cervical score was 13.1 ± 1.9 mean number of sperm in vaginal fornix 7.1 ± 2.1 and 6.3 ± 2.2 in canalis cervicalis.

Table 1. Criteria of the PCT

Motil sperm per high-power field (HPF)	Interpretation
0-5	Poor or negative
6-10	Fair
11-15	Good
<15	Excellent

Tablo 2.3. The percentage of the PKT scoring results in fertil and infertil groups



In 23 of the 80 cases, ASA antibody was found to be positive, in 6 of these 23 positive cases (26.1%), postcoital test was positive. In the remaining 57 cases, ASA was negative. In 15 of these 57 cases (26.3%), postcoital test was positive while in the rest PCT was found to be negative.

Postcoital test was found to be negative in the 5 cases of which ASA in cervical mucus was determined to be positive beforehand.

As a result, in the comparison of PCT the ASA(+) and ASA(-) cases there was no significant difference between two groups.

DISCUSSION

The postcoital evaluation of midcycle cervical mucus (CM) has become an integral part of the evaluation of the infertile couple (4,5). The interactions of semen with cervical mucus provide information concerning a both of the two infertility factors. It is evident that sperm transport is enhanced in the female by clear acellular midcycle mucus, while thick viscous mucus is an obstacle to sperm transport (4,6). Abnormality of CM is responsible of infertility in 5% to 10% of women (7,8,9). A prospective studies of 80 ovulatory women without any pelvic or seminal causes for their infertility revealed acumulative conception rate of 84% for a positive postcoital test and 16% for a negative PCT (9).

In our study, in 25.7% of the fertile cases PCT result was three positive (+++) the largest group was 60% in which PCT results was four (++++) positive (Table 2,4,5). In the infertile cases the largest group was 45% in which score was two positive (++) in 5% four positive (++++) PCT score was determined (Table

3,4,5). In comparison of PCT in fertile and Infertile couples, according to students-t test analysis, we found significant correlation (Table 4). Sperm count of 35 fertile (Group I) and 80 infertile (Group II) women in vaginal posterior fornix and in cervical canalis and cervical score (according to Insler's cervical scoring system) were evaluated.

When we compared group I with group II, we detected, there wasn't any significant difference between two groups in regard to the cervical scores (Table 5). But the mean number of sperm in fertile group was significantly higher than the infertile group. As a result, significantly larger numbers of sperm were found in PCT of women in fertile group than in those who were in infertile group.

When cervical scores in the two groups were compared, the data indicated that the greater number of sperm in cervical mucus was associated with a greater change of pregnancy.

Jette and Glass (8) found that the pregnancy in infertile women was significantly higher in the presence of favorable cervical mucus and when there were more than 20 sperm/HPF in the mucus as demonstrated in PCT (8). But the lack of correlation of PCT results with the occurrence of pregnancy has also been documented in some studies (9,10,11,12,13). Human cervical mucus contains immunoglobulin A (IgA), occasionally traces of IgM is also found in almost all samples. More recently the presence of agglutinating and immobilizing sperm antibodies in cervical mucus has been reported by that (14). Collected data are available indicated that somewhere between 5% to 30% of men and women with apparently unexplained

Table 4. Comparison of PCT results of in fertile and infertile couples

PCT	Poor Negative	Fair	Good	Excellent
Fertile (n-35)	1 (2.8%) NS	4(11.5%) S	9(25.7%) NS	21(60%) S
Infertile (n-80)	20(25%)	36(45%)	30(20%)	4(5%)

NS - Non-significant

S - Significant

Table 5. Sperm count of fertile and infertile cases in vaginal posterior fornix and canalis cervicalis were evaluated according to the Insler's cervical scoring system

Group	No	Cervical Score	Post. Vag.Fornix	Sperm/HPF Can.Cer.
1.Fertile	35	12.8±1.6 NS	13.9±2.6 S	14.1 ±1.2 S
2.Infertile	80	13.1 ±1.9	7.1 ±2.1	6.3±2.2

NS - Non - significant

S - Significant

Table-6. Comparison of PCT with ASA in 80 infertile cases

	PCT positive(+)	PCT negative(-)
ASA Positive (n:23)	6(27.2%)	17(72.8%)
ASA Negative (n:57)	15(27.5)	42(72.5%)

($\chi^2:0.037$) [0.9>p>0.51

infertility show evidence of antibodies to sperm (14,15,16).

In our study, in comparison of the antisperm antibody (ASA) positive and ASA negative cases in regard to PCT positivity or negativity, we found that the results weren't significant (Table 6). The biological and clinical significance of these findings are related to the patient population studies, the extend to which organic causes of infertility have been excluded and the sites and methods of antibody detection (16,17). A more recent prospective study has shown that the likelihood of conception increases and the time period until conception decreases as large numbers of motile spermatozoa are detected in the cervical mucus (17). In these days, ASA is determined in the female cervicale mucus and in the sera of both male and female. The most widely accepted method is its detection in the female serum and cervical mucus.

In cases with unexplained infertility, when PCT is negative and head to head and tail to tail crowding of sperm of the male partner is detected. It is repeated that in these cases, determination of ASA is appropriate (17,18).

CONCLUSION

There wasn't any significant difference between results of cervical scoring assessment in fertile and infertile groups. But in fertile group, the mean number of motile sperm was more than in infertile groups.

In comparison of ASA positive and ASA negative cases, in infertile women, the difference between PCT results wasn't significant. Finally, the success rate was directly correlated with the mean number of motile sperm in cervical canal rather than cervical mucus scoring in PCT.

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