The value Of Cervical Score In Predicting Ovulation In Natural And Stimulated Cycle

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Abstract

This study was designed to determine the accuracy of cervical mucus scoring(CMS) for timing of ovulation in natural and stimulated cycle, and to compare the results with real time pelvic ultrasonography(P.U/S) for ovarian follicular growth and maturation, in both cycles .A total of twenty-two cervical mucus(CM) was obtained and scored according to Insler mucus scoring; together with (P.U/S) folliculometry.There was a high positive correlation($r = 0.96, p < 0.05$) between determination the day of ovulation by serial Insler scoring assessment of (CM) and serial (P.U/S) folliculometry in natural cycle; while there was no such correlation($r = 0.15, p > 0.05$) in the stimulated cycle.

الخلاصة

صممت هذه الدراسة لتحديد كفاءة مقياس مخاط عنق الرحم لمعرفة وقت حدوث الأباضة لدورات الطمث الطبيعية (غير المحفزة) و المحفزة.قورنت النتائج مع الوقت الحقيقي للسونار الحوضي لتقييم نمو ونضج الجريبات المبيضية في كلا النوعين (الدورات الطمثية الطبيعية والمحفزة).تم الحصول على مخاط عنق الرحم لأثنين وعشرين امرأة حسب مقياس أنسلر لمخاط عنق الرحم اضافة الى التقييم الجريبي بين تحديد يوم الأباضة بوساطة مقياس أنسلر لمخلط عنق الرحم ($r = 0.96, p < 0.05$)بواسطة السونار الحوضي .لوحظ علاقة موجبة قوية ( ) في ($r = 015, p > 0.05$ معمقياس الأباضة بوساطة السونار الحوضي المتكرر في دورات الطمثالطبيعية،بينما لم يلاحظ أي علاقة معنوية (النساء ذوات دورات الطمث المحفزة.

Introduction

The key to become pregnant or to avoid pregnancy is to determine when ovulation to occur. If a women is ovulating ,she can relay on physiological clues; these are signs of ovulation; presented by her body to predict ovulation. These signs are cervical mucus(CM), its cyclical nature makes it useful biomarker in managing fertility(1). Another fertility signs; cervical position ,ovulation pain(2), ovulation predictor kits, saliva ovulation kits(3), and others; monitoring these changes has been long used as markers of fertile interval(4,5,6,7).Assessment of(CM) would be particularly useful for couples who want to time their intercourse either to avoid or to facilitate conception(8).Cervical secretion are associated with higher fecunadability with in the fertile window (9).This study show the significance of using Insler scoring assessment of (CM) in natural and stimulated cycles, and compare the results with serial (P.U/S) folliculometry, for determining the day of ovulation when ultrasonography is not available

Materials and method:

Twenty-two couples with primary unexplained infertility were studied during their attendance in Embryo Research And Infertility Treatment Centre at Baghdad University. The females partner were with mean infertility duration of five years and with mean age of thirty years. They have normal ovulatory cycle, clean vagina and cervix. Eleven females were studied with spontaneous cycle(natural), while the other eleven under went ovarian stimulation program by clomid (Clomiphene Citrate,"C.C.
Merell company,England) 50 mg. tablet, twice daily from cycle day two through out
Cycle day six.

These two groups were followed from cycle day-10 for the degree of opening of the external cervical os , the cervical fluid was aspirated by clean sterile pipette .The aspirate was studied for quantity, spinnbarkeiting, and a drop was layed on microscope slide for ferning pattern. These observations were graded according to Insler mucus scoring; table(1),(10). These grades were added together to have the final score for each woman . At the same time these females were subjected to daily real time (P.U/S) for ovarian folliculometry from cycle day-1

RESULTS:

Cervical mucus score were evaluated according to Insler mucus scoring in natural and stimulated cycle, for 22 female partners of unexplained infertility couples. Follicular growth was followed by serial (P.U/S) measurement till follicular rupture. Figure (1) , shows that there is unadverse effect of "C.C" on CMS;{ median CMS =12 in natural cycle (95% confidence interval(CI) =6.84,11) and in "C.C" cycle =8(95%CI=7,12);$p<0.05$}. Figure (2); demonstrate that there was no such effect on follicular diameter ,{mean follicular diameter =1.98 in natural cycle(95% CI=1.84,2.11) and in "C.C" cycle= 1.82(95% CI=0.84,2.79);$p>0.05$}. There was strong correlation between (CMS) assessment and follicular diameter measurement in the natural cycle group ($r=0.96, p<0.05$); while there was no such correlation ($r=0.15, p>0.05$) in "C.C" cycle group.

0 till follicular rupture.

DISCUSSION:

Cervical mucus is a normally healthy discharge which is controlled by estrogen. Non-estrogenic mucus is viscous and tend to block the passage of human spermatozoa to the uterus (11).Ultrasound is the routine method for assessing ovarian follicular growth , maturation and determine the day of ovulation (4).In the present study we scored the (CM) according to Insler mucus scoring . A high score means that a woman is close to ovulation, and the mucus tend to show distinct crystal-fern-like appearance under the microscope; it can be also stretched into thread (11).The adverse effect of "CC" on CM was obvious in our study demonstrated by the significant difference ($p<0.05$) between the 95% CI of the natural and stimulated cycle, figure (1).Clomid is a synthetic hormone which has an anti-estrogenic activity(12), tricking the brain in to producing higher level of follicular stimulating hormone, than untreated cycle, which in turn stimulate ovarian follicular growth and maturation , but one of its side effect is thickening of CM and vaginal dryness(13,14), impairing conception and implantation(15).This adverse effect is well demonstrated in our study as well as by Randall and Templeton (12),who studied sperm-mucus interaction in vitro in natural and stimulated cycle. This negative effect on (CM) has no effect on follicular development ($p>0.05$),figure (2). These results are in agreement with that of Saporosi;et al.(14).There was strong correlation between (CMS) and follicular diameter in natural cycle ($r=0.96$). This result is well documented by Daly;et al. and Abidoqum ;et al.(16,17).We did not find such correlation in the "CC" stimulated cycle ($r=0.15$). This may need research by larger study group.

In conclusion these results suggest that (CMS) in natural cycle can be useful adjunct for monitoring ovulation in patients when hormonal analysis/ and or /sonography are not available . Being simple to perform, cheap, rapid and reasonably accurate method for detecting and predicting ovulation. Cervical scoring assessment is recommended for the use in infertility management in our environment with limited man power and resources. In addition U/S is found to be cost effective in the over all infertility evaluation . The Insler score is reliable indicator for follicular growth and rupture.It is easy mastered and there is minimal individual variation between observers and no technical or biochemical facilities are

required. Clomiphene Citrate stimulated cycle needs research by larger study group.

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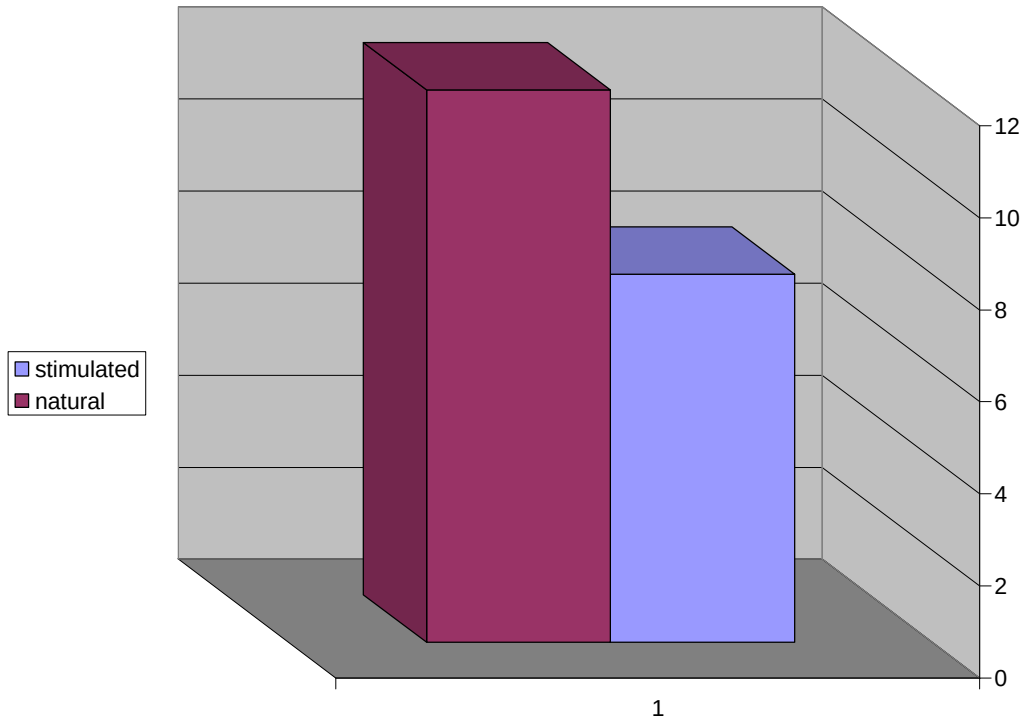
Table(1): Insler Mucus Score:

Quantity of fluid aspirated \ml	Grade	Degree of external os opening	Grade	Ferning	Grade	Spinberkiting	Grade
0.1-0.2	1	Closed with out mucus	1	Few	1	3-6	1
0.3-0.4	2	Closed with mucus	2	Moderate	2	7-9	2
<0.5	3	Opened with mucus	3	Sufficient	3	10-12	3

Score <5= Hostile cervical secretion*

Score: 5-10= Relatively unfavorable CM

Score >10=Favorable CM



Figure(1):Comparisim beteen ((CMS) in natural and stimulated cycle (The values are the median)

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Number of patients per group =11

Natural is significantly different from the corresponding group.($p<0.05$)

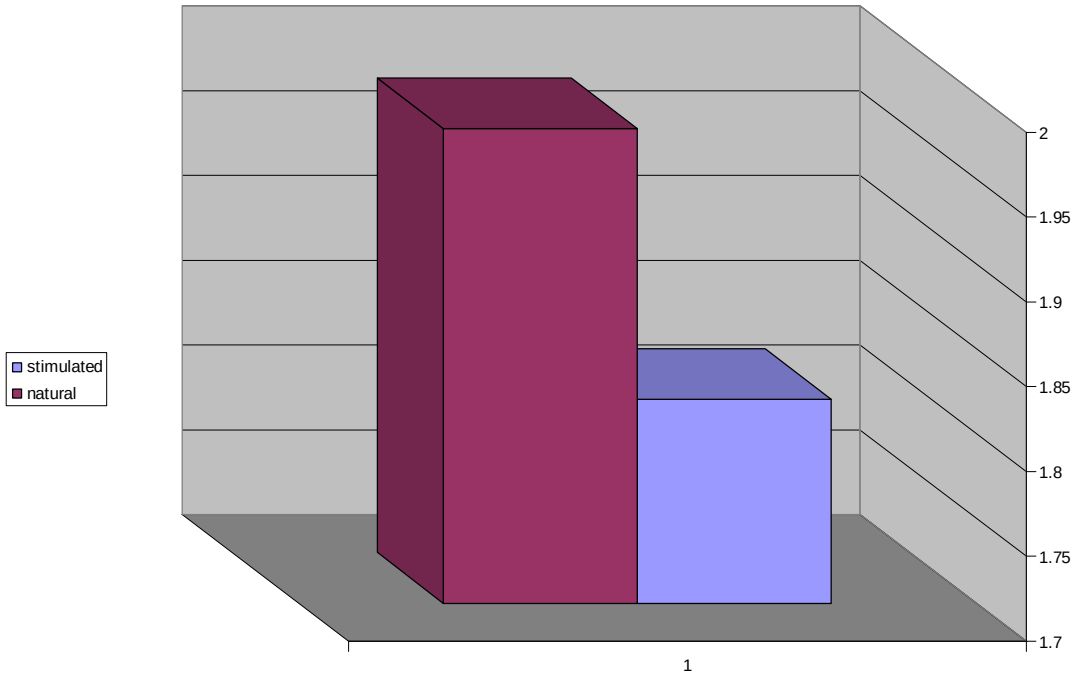

Figure (2):Comparisim between follicular diameter in natural and stimulated cycle.(The values are the mean).

Number of patients per group = 11 There is no significant difference($p.>0.05$)

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