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Date: 9 / 9 / 2015
Dedication

To the source of compassionate love
My beloved mother

To the symbol of giving faithfulness
My ever respected, Idol and role model My Father

To the dear members of my family

To all those who stood by my side supporting and encouraging,
I dedicate this work
Acknowledgement

All my thanks to ALLAH, the most Gracious and the most Merciful for giving me health and patience to finish this work.
I would like to express my sincere gratitude to everybody who helped me in this work.

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Mubarak Ali Adeeb Mohammed

Abstract

Contraceptive drugs are considered of wide and intense use in the Sudan and worldwide. Technological progress in the field of medical drugs led to the emergence of new and different types of contraceptive methods and means of mechanical grains and other contraceptive drugs have side effects on human health and the various organs in terms of structure and function. This study aimed to examine the effects of these drugs on the cells in cervical smears on women using it. This study was conducted in the city of Khartoum during the period March 2015 to May 2015 a cervical swabs and smears were taken from the cervix from a hundred women using contraceptives. The study covered the age group 20-49 years in IUCD users. 18 percent were using IUCD and 82 percent were using IUCD. The study showed the following results: in women who were using IUCD 40 percent of the samples were negative for cellular changes, 5.6% which got cellular changes, 5.6% contained the fungus Candida, 27.8% contained bacteria and 16.6 contained Aktinomycetes. On the other hand results of the study showed that women who were using oral contraceptives women samples were as follows: 54.9% negative cellular changes and 10% which obtained cellular changes, 4.9% contained the fungus Candida, and 25.7% contained the infection bacteria, 2.4% contained Trichomonas vaginalis, and 1.2% contained Actinomycetes. The study concluded that the cellular changes are less frequent in IUCD than pills users and the study recommends to conduct more tests and studies on the cellular interactions of contraceptives using a larger sample size.
التأثيرات الخلوية في مسحة عنق الرحم للنساء اللائي يستخدمن طرق موائع الحمل، ولاية الخرطوم (2014-2015)

مبارك على أديب محمد

ملخص الدراسة

من المعروف أن عقاقير منع الحمل من الأدوية واسعة الانتشار والمستعملة بكثافة في السودان على مستوى العالم. الانتقال التكنولوجي في مجال العقاقير الطبية أدى إلى ظهور أنواع مختلفة وواجت من طرق منع الحمل بالحليب ووسائط ميكانيكية وغيرها. إن العقاقير المتعددة للحمل لها تأثيرات جانبية على صحة الإنسان وأجهزته المختلفة من حيث التركيب والوظيفة. هدف هذه الدراسة لمعرفة تأثير هذه العقاقير من الناحية الخلوية المرضية على عدد من النساء اللائي يستخدمنها. أجريت هذه الدراسة في مدينة الخرطوم في الفترة من مارس 2015 إلى مايو 2015 وتم أخذ مسحات من عنق الرحم من كاف أولات تستخدمن موائع الحمل.

المجموعة قيد الدراسة كانت في الفئة العمرية بين 20 إلى 49 سنة. 18 امرأة كن يستخدمن اللولب الرحمي و82 كن يستخدمن الحليب المائع للحمل. أظهرت الدراسة النتائج التالية: في عينات النساء اللائي كن يستخدمن اللولب الرحمي وجد الباحث أن 40 في المئة من العينات كانت سالبة للتيغرات الخلوية. 5.6% حصلت فيها تغيرات خلوية في 5.6% احتوت على قطر المبيضات , 27.8% احتوت على بكتيريا في 16.6% احتوت على قطر الأكثينوماسينات. من ناحية أخرى أظهرت نتائج الدراسة أن عينات النساء اللائي كن يستخدمن موائع الحمل الفموية كانت كالتالي : 54.9% سالبة للتيغرات الخلوية و10% حصل فيها تغيرات خلوية. 4.9% احتوت على قطر المبيضات, و25.7% احتوت على إصابة بكتيريا. 2.4% احتوت على المشعات المهبلية, و1.2% احتوت على الأكثينوماسينات. خلصت الدراسة إلى أن التغيرات الناتجة من استخدام اللولب الرحمي من استخدام الحليب المائع للحمل وتوصي الدراسة بإجراء المزيد من التجارب والدراسات على التأثيرات الخلوية لموائع الحمل باستخدام حمض عينة أكبر.
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Chapter one

Introduction

1.1 General Introduction:

Cytology is the scientific study of cells. Exofaliate cytology is the microscopic examination of desquamated cells for diagnostic purposes. Cytopathology is the study of cells on disease\(^{(11)}\).

The diagnosis of cervical swabs and smears is based on a history, physical examination, and a few simple diagnostic tests\(^{(1)}\). Inflammation or irritation of the cervix is rarely note a pyrylent vaginal discharge, deep dyspareunia, and spotting after intercourse, while others may be symptoms-free. Papanicolaou (pap) smear rules out malignancy. No treatment is necessary if the patient is asymptomatic, The pap smear is normal, and cultures are negative. Antibiotics specific to the organism are temporarily effective and may be curative. Cervicitis causes a nondescript discharge, post-coital spotting and deep dyspareunia. Gonorrhea may cause a purulent vaginal discharge and deep dyspareunia. Abundent polymorphs and histiocytes in the pap smear indicate cervicitis\(^{(3)}\).

The potential effects of the contraception methods that are widely used in the community on cervical or endometrial carcinogenesis have been studied by various investigators for many years. Different opinions on this subject are present in the literature.

Birth control, also known as contraception and fertility control, are methods or devices used to prevent pregnancy. Planning, provision and use of birth control is called family planning. Birth control methods have been used since ancient times, but effective and safe methods only became available in the 20th century.\(^{(8)}\) Some cultures limit or discourage access to birth control because they consider it to be morally, religiously, or politically undesirable.
1.2 Rationale:

Contraceptives are been widely used these days across the world and there is global interest for its development, so there is scientific need to recognize any possible side affects in the lower female genital tract.

1.3 objectives:

1.3.1 General objective

Studying side effects of contraceptive methods on female genital tract.

1.3.2 specific objectives:

1- To determine the cellular changes that occur in cervical swabs and smears due to the use of contraceptive pills.

2- To determine the cellular changes that occur in cervical swabs and smears due to the use of IUCD

3- To compare cytological changes in contraceptives users and non users.
Chapter two

Literature review

2.1 Female genital tract basic structure:

The external female genitals are the mons pubis, the clitoris, the labia majora, and the labia minora and the vulva. The labia majora are two spongy folds of skin one on either side of the vaginal opening that cover and protect the genital structure. The labia minora extend from the clitoris on both sides of the urethral and vaginal opening. The urethra is covered by the labia minora that include the vaginal urethra. Bartholins and skenes gland opening is called the vestibule\(^{(4)}\).

The internal female genitals are the vaginal, the cervix, the uterus, the fallopian tubes and ovaries. The vagina is a muscular, highly expandable tubular cavity leading from the vestibules to the uterus. Bartholins glands are two small, round structure, one on either side of vaginal opening. Theses glands secrete mucus like fluid during sexual arousal, providing vaginal lubrication. The grafenberg spot, may be the source of a small amount of fluid ejaculated at orgasm. The cervix protrudes into the vaginal canal. The uterus is a hollow, thick walled, pear shaped, muscular organ located between the bladder and rectum. It’s the side of implantation of the fertilized ovum (egg), the location where the fetus develops during pregnancy, and the structure sheds its lining monthly during menstruation\(^{(3)}\).

The fallopian tubes (the oviducts) are a pair of tubes that extend from the upper uterus out to toward the ovaries. The ovaries are two organs, located at the end of each fallopian tube. It produces estrogen and progesterone, the hormones responsible for development of sex characteristics and elasticity of the genitalia, integrity of the vagina lining and lubrication of the genitalia\(^{(5)}\).
2.3 Birth control:

The most effective methods of birth control are sterilization by means of vasectomy in males and tubal ligation in females, intrauterine devices (IUCDs) and implantable contraceptives. This is followed by a number of hormonal contraceptives including oral pills, patches, vaginal rings, and injections. Less effective methods include barriers such as condoms, diaphragms and contraceptive sponge and fertility awareness methods. The least effective methods are spermicides and withdrawal by the male before ejaculation. Sterilization, while highly effective, is not usually reversible; all other methods are reversible, most immediately upon stopping them. (9)

2.3.1 Hormonal regulation:

Hormonal contraceptives is available in a number of different forms, including oral pills, implants under the skin, injections, patches, IUCDs and a vaginal ring. They are currently available only for women, although hormonal contraceptives for men have and are being clinically tested. There are two types of oral birth control pills, the combined oral contraceptive pills (which contain both estrogen and progesterone) and the progestogen-only pills (sometimes called minipills). If either is taken during pregnancy, they do not increase the risk of miscarriage nor cause birth defects. Both types of birth control pills prevent fertilization mainly by inhibiting ovulation and thickening cervical mucous. Their effectiveness depends on the user remembering to take the pills. They may also change the lining of the uterus and thus decrease implantation. (8)

Combined hormonal contraceptives are associated with a slightly increased risk of venous and arterial blood clots. Venous clots, on average, increase from 2.8 to 9.8 per 10,000 women years which is still less than that associated with pregnancy. (6) Due to this risk, they are not recommended in women over 35 years of age who continue to smoke. The effect on sexual desire is varied, with increase or decrease in some but with no effect in most. Combined oral contraceptives reduce the risk of ovarian cancer and endometrial cancer and do not change the risk of breast cancer. They often reduce menstrual bleeding and painful menstruation cramps. The lower doses of estrogen released from the vaginal ring may reduce the risk of breast tenderness, nausea, and headache associated with higher dose estrogen products. (7)
Progesterone-only pills, injections and intrauterine devices are not associated with an increased risk of blood clots and may be used by women with previous blood clots in their veins. In those with a history of arterial blood clots, non-hormonal birth control or a progestin-only method other than the injectable version should be used. Progestin-only pills may improve menstrual symptoms and can be used by breastfeeding women as they do not affect milk production. Irregular bleeding may occur with progestin-only methods, with some users reporting no periods. The progestins, drospirenone and desogestrel minimize the androgenic side effects but increase the risks of blood clots and are thus not first line. The perfect use first-year failure rate of the injectable progestin, Depo-Provera, is 0.2%; the typical use first failure rate is 6%.

2.3.2 Barrier

Barrier contraceptives are devices that attempt to prevent pregnancy by physically preventing sperm from entering the uterus. They include male condoms, female condoms, cervical caps, diaphragms, and contraceptive sponges with spermicide.

2.3.3 Intrauterine devices:

The current intrauterine devices (IUCD) are small devices, often 'T'-shaped, often containing either copper or levonorgestrel, which are inserted into the uterus. They are one form of long-acting reversible contraception which are the most effective types of reversible birth control. Failure rates with the copper IUCD is about 0.8% while the levonorgestrel IUCD has a failure rates of 0.2% in the first year of use. Among types of birth control, they along with birth control implants result in the greatest satisfaction among users. As of 2007, IUCDs are the most widely used form of reversible contraception, with more than 180 million users worldwide.

Evidence supports effectiveness and safety in adolescents and those who have and have not previously had children. IUCDs do not affect breastfeeding and can be inserted immediately after delivery. They may also be used immediately after an abortion. Once removed, even after long term use, fertility returns to normal immediately.
2.4 Pap stain:-

The Papanicolaou test (abbreviated as Pap test, known earlier as Pap smear, cervical smear, or smear test) is a method of cervical screening used to detect potentially precancerous and cancerous processes in the cervix (opening of the uterus or womb).

A Pap smear is performed by opening the vaginal canal with as specula, then collecting cells at the outer opening of the cervix at the transformation zone (where the outer squamous cervical cells meet the inner glandular endocervical cells). The collected cells are examined under a microscope to look for abnormalities. The test remains an effective, widely used method for early detection of pre-cancer and cervical cancer. While the test may also detect infections and abnormalities in the endocervix and endometrium, it is not designed to do so.

Pap smear screening is recommended starting around 21 years of age until the age of 65. Guidelines on frequency vary from every three to five years.

2.5 Previous studies:

In August 1984 Peddie BA assessed one thousand and two consecutive vaginal or cervical swabs from women attending a family planning centre in Christchurch, New Zealand by culture. Candida Albicans was isolated from 13% of women not using contraceptives, 16% using oral contraceptives, and from 9%, 19% and 18% of those using diaphragms, IUCDs and condoms respectively. Women using an IUCD had significantly more gram positive cocci cultured than women in any other group, while those using diaphragms had significantly more gram negative bacilli.

In 1989, Misra JS also evaluated the cytology of cervical swabs and endometrial aspirates out in women wearing IUCDs for periods ranging from 6 months to 15 years. No cases of cervical neoplasia or indometrial carcinoma were encountered, even after continues use of the devise for 15 years. Dysplastic cervical swabs were however, found in post-insertional smears, and endometrial hyperplasia was detected in some aspirates; in no cases was the dysplasia or hyperplasia higher than of
moderate degree. A number of the women with post-insertional dysplastic smears were followed for 3-4 years; in no case did the lesion progress to a higher grade or to frank malignancy, however persistence and recurrence of dysplasia were seen in some women (not all of the participants), necessitating removal of the IUCDs. The incidence of cervical dysplasia and endometrial hyperplasia was found to be much higher when the IUCDs had been changed than when the original devices were worn continuously.

In August 1990, Negrini BP and Schiffman MH, et al examined oral contraceptive (OC) use; as a risk factor for cytological abnormalities of the cervix among 1964 women receiving papanicolaou smears at three hospitals in the Washington DC area. A single pathologist classified cytological results from all women as normal (n=314), low grade squamous intraepithelial lesion (SIL; n=208) or high grade SIL (n=19). Women in each of the three groups were compared to women with normal cytological diagnosis. OC use was found to be unrelated to risk of atypia or low grade SIL but was associated with elevated risk of high grade SIL that increased with longer duration of use.

In October 1991 Roy S. at the medical centre women hospital in Los Angeles had reported that oral contraceptives use is associated with greater frequency of candidiasis, also intrauterine devices use is reported to be associated with an increased rate of bacterial vaginosis.

In 1994 Ceruti M et al in Italy examined 2387 patients attending for sexually transmitted diseases at the university of Parma with symptoms of genital infections. Over the 4 years period, among patients with vulvo-vaginitis, UD users had higher rate than oral contraceptive users in having bacterial vaginosis (24.9% vs 15.7%).

In July 1995 Li X, Ran J, Rao H in second affiliated hospital of Shanxi medical college, Taiyan studied the influence of oral contraceptives on cervical epithelium of 101 women who had used oral contraceptives for over 6 months and found that the mean nuclear diameter of cervical epithelial cells was larger in the oral contraceptives group (28.7%). There was significant difference in the occurrence of cervical megaloblastic changes between the two groups.
In October 2002, Kazerooni T, Mosalaee A. investigated the effect of various types of contraceptives on morphological finding of Pap smear results. Pap smear results of 7753 fertile women whom presented to 15 family planning services in Fars Province (south of Iran) were analyzed according to three method of contraception, the population consisted of 2241 women who used intrauterine devices (IUCD) as a contraceptive method (group 1), 2521 who had oral contraceptives (group 2), and the control group, which consisted of women who used other methods of contraception, comparison between the Pap smear results showed a higher number of benign cellular changes among (group 1) (22.4%) than group 2 (19.3%). 80.6% of women using oral contraceptives showed cellular changes within normal limits. While it was 77.6% for intrauterine device users. Trichomonas vaginalis was higher in group 1 than other groups.

In February 2004, Darwish A, Labeeb S, Galal M, Rashad H, Hassan S at the department of obstetrics and Gynecology, Assiut university Egypt studied the cytological changes among women using progesterone—only contraceptives (POP) for more than 3 years as compared to non hormonal contraceptive methods in total of 325 current user of contraception. Cytological evaluation of the cervix was done for each case and it revealed positive cases of low and high grade squamous intraepithelial lesions (SIL) in 19% of test groups and 17% in the control group.

In August 2006, Veesey M, Painter R in the unit of health care epidemiology, department of public health, university of Oxford examined cancer incident in relation to oral contraceptive use in the Oxford family planning association, the study includes 17032 women, recruits at family planning clinics at ages 25-39 who were using oral contraceptives, diaphragm or intrauterine device and the follow up data were available until 2004. Oral contraceptives use was not significantly related to non productive cancer.

In January 2008 Vanakankovy, Faculty of medicine, king chulalongkorn memorial hospital, Bangkok, Thailand assessed the risk of oral contraceptives on the occurrence of cervical cancer. 60 women with invasive cervical cancer and 180 healthy controls were interviewed by the investigators. Patients who had ever used or currently using contraceptive had an increased risk of cervical cancer however the risk was not statistically significant.
In August 2008, Schmeink CE published a meta-analysis and a large cohort study showing independently that use of oral contraceptives leads to an increased relative risk (RR) of cervical cancer. This (RR) increased with the duration of oral contraceptive use and was 1.90 after 5 years or more (95%). The increased RR decreased after cessation of oral contraceptives use and was normal again 1 year later.
Chapter Three

Materials and Method

3.1 Study design:

Prospective case control study.

3.2 Study area:

Total Health Care Laboratory Khartoum, Sudan.

3.3 Study population:

Female using oral and intra-uterine device contraception methods were used as cases and females not using any type of contraception as controls.

3.4 Study period:

The study was carried out during the period March to August 2015

3.5 Sampling and sample size:

100 slides as cases and 100 control slides were taken retrospectively from total health care laboratory in Khartoum state.

3.6 Inclusion criteria:

- Patients using contraceptive pills or loop for 9 months or more

- Patients above 20 or below 40 years old

3.7 Exclusion criteria:

- Patients diagnosed with HBV

- Patients known to have past history of cervical diseases

- Known diabetic patients.
3.8 Materials and reagents:

- Glass slides.
- Ayres spatula.
- Papanicolaou stain.
- 95% and 70% alcohol.
- Harri’s haematoxilin.
- 0.5% aqueous HCL.
- EA50.
- Xylene.
- DPX
- OG6

3.9 Methods:

3.7.1 Samples collection:
The cervical swabs and smears were collected using Ayres spatula. These materials were directly smeared in clean glass slides and immediately fixed in 95% Ethanol. (11)

3.7.2 Samples processing:
The smears were stained using Papanicolaou stain as described below:
- The slides were hydrated in 95% alcohol for 2 min and 70% alcohol for 2 min.
- rinsed in water for 1 min.
- stained with Harri’s haematoxilin for 5 min.
- rinsed in water for 2 min.
- differentiated in 0.5% aqueous HCL for 10 min.
- rinsed in water for 2 min.
- bluing was done in running tap water for 2 min.
- rinsed in water for 2 min.
- the slides were dehydrated in (70% , 95% , and 95%) alcohol for 2 min each.
- stained with OG6 for 2 min.
- rinsed in 2 changed 95% alcohol for 2 min.
- stained in EA50 for 3 min.
- rinsed in 95% alcohol for 1 min.
- The slides were cleared in Xylene and mount in DPX.

3.10 Limitations of the study:

The sample size was not large enough to represent the study population.

3.11 Statistical analysis:

Data collected was analyzed by using the Statistical Package for the Social Science software (SPSS version 18).

3.12 Ethical consideration:

These following points were taken in consideration while conducting this study

1- permission from the total health lab

2- informed consent from each participant

3- cost

4- benefits of the participants
Chapter 4
Result and discussion

4.1 Results:

During the course of this study a total of 100 cervical swabs and smears were taken from females using contraceptives as the test group (cases) and 100 cervical swabs’ were taken from females not using contraceptives as the control group.

The ages of the test and control group participants were between 20—49 years as shown in table (1). 56% of the test group ages were between 30-39 years, 33% were between 20-29 years and the rest (11%) were between 40-49 years while 44% of the control group ages were between 30-39 years, 36% were between 20-29 years and the rest (20%) were between 40-49 years.

The distribution of type of contraception by age group six of the participants using IUCDs were between 20-29 years, 10 were between 30-39 years and 2 were between 40-49 years while 27 of the participants using oral contraceptives were between 20-29 years, 46 were between 30-39 years and 9 were between 40-49 years.

The distribution of cytological findings in test and control group is shown in figure (4.1). 52% and 64% of the test and control group participants respectively did not suffer from any cellular changes or infections. The majority (26%) of the test group and 16% of the control group suffered from bacterial infection, 10% of the test group and 12% of the control group had cellular changes such as cervical hyperplasia, 5% of the test group and 4% of the control group suffered from Candida, 2% of the test group and 4% of the control group suffered from Trichomonas Vaginalis (TV) while 4% of the test group suffered from Actinomycetes. The P value was found to be (P=0.053).

The distribution of cytological findings by the type of contraception used is shown in table (4.3) 38.9% and 54.9% of the participants using IUCDs and oral contraceptives respectively did not suffer from any cellular changes or infections. The majority 27.8% of the participants using IUCDs and 25.7% of the participants oral contraceptives suffered from bacterial infections, 16.6% of the participants using IUCDs and 1.2% of the participants oral contraceptive suffered from Actinomycetes, 5.6% of the
participants using IUCDs and 10.9 % of the participants using oral contraceptives had cellular changes, 5.6 % of the participants using IUCDs and 4.9 % of the participants using oral contraceptives suffered from Candidiasis. 5.5 % of the participants using IUCDs suffered from Human Papilloma Virus (HPV) while none of the participants using oral contraceptives did. None of the participants using IUCDs suffered from Trichomonas Vaginalis (TV) but 2.4 % of the participants using oral contraceptives did. The P value was found to be (P= 0.008).

Table (4.1): Distribution of age group among study population:

<table>
<thead>
<tr>
<th>Age group</th>
<th>Cases No</th>
<th>Control No</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>33</td>
<td>36</td>
</tr>
<tr>
<td>30-39</td>
<td>56</td>
<td>44</td>
</tr>
<tr>
<td>40-49</td>
<td>11</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Table (4.2): Distribution of participants among study age group

<table>
<thead>
<tr>
<th>Age group</th>
<th>IUCD</th>
<th>Oral Contraceptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>30-39</td>
<td>10</td>
<td>46</td>
</tr>
<tr>
<td>40-49</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>18(100)</td>
<td>82(100)</td>
</tr>
</tbody>
</table>

Figure (4.1): Distribution of participant’s cervical findings (p=0.053).
Table (4.3): Distribution of cytology findings by type of contraception (p=0.008)

<table>
<thead>
<tr>
<th>Cytology Result</th>
<th>IUCD No (%)</th>
<th>Oral contraceptive No (%)</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>7 (38.9%)</td>
<td>45 (54.9%)</td>
<td></td>
</tr>
<tr>
<td>Cellular changes</td>
<td>1 (5.6%)</td>
<td>9 (10.9%)</td>
<td></td>
</tr>
<tr>
<td>Candida</td>
<td>1 (5.6%)</td>
<td>4 (4.9%)</td>
<td></td>
</tr>
<tr>
<td>Bacterial infection</td>
<td>5 (27.8%)</td>
<td>21 (25.7%)</td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td>0 (0%)</td>
<td>2 (2.4%)</td>
<td></td>
</tr>
<tr>
<td>Actinomycetes</td>
<td>3 (16.6%)</td>
<td>1 (1.2%)</td>
<td></td>
</tr>
<tr>
<td>HPV</td>
<td>1 (5.5%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>82</td>
<td></td>
</tr>
</tbody>
</table>
**Figure (4.2):** Distribution of cases that developed any side effects:

<table>
<thead>
<tr>
<th>Side Effect</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal discharge</td>
<td>8%</td>
</tr>
<tr>
<td>Heavy cycles</td>
<td>4%</td>
</tr>
<tr>
<td>Vulval itching</td>
<td>2%</td>
</tr>
<tr>
<td>Non</td>
<td>86%</td>
</tr>
</tbody>
</table>
4.2 Discussion:

This prospective case-control study aimed to evaluate the cytological changes in cervical swabs and smears and infections in ladies using different contraceptives (oral and IUCD). One hundred females (case group) and One hundred females (control group) were studied. More than 50% of population studied was in the age ranged between 30 to 39 years old for control and case groups.

Most of the participants in this study were using oral contraceptives (82%) while the rest were using intrauterine devices. This may point out that pills are the preferable contraceptives in this studied group.

Cytological findings in the studied population revealed that more than half of the population did not show any cytological changes (52%). The rest showed different aspects like epithelial cells changes (10%), Candida albicans infection (5%), bacterial infection (26%), TV infection (2%), Aactinomyces (4%). The P value of this suggestion was (0.05) which was significant.

These findings agree with the study done by Peddie BA et al in nAugust 1984, who assessed one thousand and tow consecutive vaginal or cervical swabs of women attending a family planning centre in Christchurch, New Zealand. by culture. Candida albicans was isolated from 13% of women using no contraception, 16% using oral contraceptives, and from 9%, 19% AND 18% from women using diaphragms, intrauterine devices and condoms respectively. Women using an IUCD had significally more gram positive cocci cultured than women in any other group, while those using diaphragms had significally more gram negative bacilli.

Also a comparison between the cytological findings in participant using oral contraception and intrauterine devices revealed that the cellular changes were found more in women using oral contraception, while the Actinomyces found to be much more in participant using intrauterine devices and the other changes observed in both groups were approximiatly the same and the P value was significant (0.008).

These findings goes well with a study done by Roy S in october 1991 at the medical centre women hospital in Los Angelees, and he reported that the oral contraceptives
use versus other methods of contraception is associated with greater or similar frequency of Candidiasis, increased number of anerobic organisms, an increased similar frequency of bacterial vaginosis and trichomoniasis. Patients using vaginal rings were found to have the same number and type of vaginal organisms as oral contraceptive users.

Also it agrees with Ceruti M et al study in 1994 in Italy, who examined 2387 patients attending the centre for sexually transmitted disease (STDs) at the University of Parma with symptoms of genital infections. Over the 4 years period, among patients with vulvo-vaginitis, IUCD users had a higher rate than oral contraceptives (OC) users of bacterial vaginosis (BV) (24.9% vs 15.7%; P = 0.05) of trichomoniasis (1.7% vs 1.3%), and of other infections (31.6% vs 20%); P = 0.05. OC users had a higher rate of candidiasis and BV and lower negative rate of BV and a lower negative rate than the nonusers (19.6% vs 14.8% and 15.7% vs 11%; P = 0.05 and 43.4% vs 52.9%; P = 0.001, respectively). IUCD users had a higher rate of BV and vulvo-vaginitis from her bacteria and a lower negative rate than nonusers.

This study agreed with Kazerooni A. study in October 2002 and investigated the effect of various types of contraceptives on morphological finding of Pap smear results. Pap smear results of 7753 fertile women who presented to 15 different family planning services in Fars Province (south of Iran) were analyzed according to their methods of contraception. The population consisted of 2521 women who used intrauterine devices (IUCD) as a contraceptive method (group 1) and 2521 women who were oral contraceptive users (group 2), and the control group. Which consisted of women who used other method of contraception. Comparison between the Pap smear results showed a higher number of benign cellular changes among group 1 (22.4%) than group 2 (19.3%), and the differences were statistically significant (P = 0.009). In addition, 80.6% of women who used oral contraceptive pills (OCP) as contraceptive showed cellular changes within normal limits, while it was 77.6% for intrauterine devices (IUCD) users. Trichomonas vaginalis was higher in GI than the other groups (P < 0.005), but the difference was not statistically significant for Candidiasis.
Chapter Five

Conclusion and Recommendation

Conclusion:-

This study concluded that there are changes in cervical swabs and swabs up to 45% related to pills and IUCDs. These changes were more frequent in IUCDs users than pills users.

The highest effect was bacterial infection with 26% of the oral contraceptive users.

Recommendation:-

Carry out more studies involving larger number of participants so as to explore more evidently the effects of contraception methods on women genital tract.
References:


