CONTRACEPTION METHODS AND TYPES OF VAGINAL MICROBIOTAS AND IN WOMEN REPRODUCTIVE AGE IN BANDUNG CITY

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ABSTRACT The balance of the vaginal microbiota has an important function in women's reproductive health, the balance can be disturbed by physiological and non-physiological changes mediated by hormonal status, sexual behavior, contraceptive use, vaginal bleeding, vaginal irrigation or use of foreign objects or drugs. With the use of contraceptive methods by women, it becomes important to observe various changes or vaginal dysfunction syndromes due to the periodic use of contraceptives, Intra Uterine Devices and condoms. This study aims to determine how the condition of the vaginal microbiota in women of childbearing age who use various contraceptive methods. Preparation before taking the test: the client empties the bladder before carrying out the test for comfort, the examiner confirms whether or not she is pregnant or may be pregnant, detects infections of reproductive or urinary tract problems with symptoms such as itching, sores, swelling, unusual odor, excessive vaginal discharge, confirms the device contraceptive use, history of surgery or other procedures related to the vagina, cervix, uterus, or vulva. The basic criteria for diagnosis use Numerical Values according to Nugent criteria
In this study, there were 34 samples of vaginal smear preparations, 9 samples were excluded. Consists of 23 contraceptive users: pills, injections, implants, IUDs. All women showed no symptoms or signs of vaginal dysfunction. Average sexual intercourse 2-3./week. Examination using gram stain. The cervical secretory mucosa protects the vaginal and cervical epithelium by forming physical and biochemical barriers or barriers. The use of oral contraceptives has an effect on bacterial vaginosis and the endocrine environment. This effect may have an effect on increasing glycogen from epithelial cells as a result of estrogens, favorable lactic acid production and lowering of vaginal pH very well for lactobacilli.

Introduction

Vaginal microbiota balance can be disturbed by physiological and non-physiological changes mediated by hormonal status, sexual behavior, contraceptive use, vaginal bleeding, vaginal irrigation or use of foreign objects or drugs. The vagina is an internal organ in women, where the

microbiota can live and play an important role in women's reproductive health. In some clinical conditions, vaginal dysfunction occurs due to dysfunction of the microbiota, such as in the case of vaginosis and vaginitis. Systemic factors are generally from the hormone-immune system, as well as the influence of psychological conditions that can affect the condition of the vaginal microbiota, external factors such as sexual activity, contraception, vaginal invasion such as habitual/exogenous (intestinal, oral) or environmental microbiota and sexual transmission, and hygienic habits.[1]

With the use of contraceptive methods by women, it becomes important to observe various changes or vaginal dysfunction syndromes due to the periodic use of contraceptives, Intra Uterine Devices and condoms.[2]

Secretion of the uterine cervix mucosa that lines the epithelium of the vagina and cervix, which forms a physical and biochemical protective barrier. The mucosa is composed of 2-5% mucus glycoprotein and 1% other secretory proteins, including antibodies, antibacterial proteins, and peptides. The mucus secretion is in the form of a gel formed by the mucosal component, the protein glycosides that form a viscoelastic jelly. Mucus and natural viscoelastic from jelly protect the epithelial surface by providing lubrication by forming an unstirred surface when pathogenic bacteria enter and become the body's defense against pathogenic bacteria.

In a study by Moncla, et al in 2016 explained that the use of Depo-Provera changed the formation of mucus jelly which resulted in an increase in changes from normal to intermediate to bacterial vaginosis. The rate of protein alteration is 3-9 times higher for bacterial vaginosis. Increased mucus is recognized as one element of the response to inflammation. [1]

This study aims to determine how the condition of the vaginal microbiota in women of childbearing age who use various contraceptive methods.

Methods

Vaginal secretion sampling is prepared through patient preparation at home, namely: in the form of information containing things that must be prepared before doing the first pap smear, namely: not menstruating, not cleaning the vagina with a douche at least three days before the examination, not having sex for two days before not using a tampon for the two days before the exam, not using any contraceptive methods, such as spermicide foam, cream, or jelly, and vaginal medications for the two days before the exam, as these can remove or obscure abnormal cells.

Preparation before taking the test: the client empties the bladder before carrying out the test for comfort, the examiner confirms whether or not she is pregnant or may be pregnant, detects infections of reproductive or urinary tract problems with symptoms such as itching, sores, swelling, unusual odor, excessive vaginal discharge, confirms the device contraceptive use, history of surgery or other procedures related to the vagina, cervix, uterus, or vulva.

The basic criteria for diagnosis use Numerical Values according to the Nugent criteria. And the vaginal inflammatory response, with a scale of 0-10, is the result of calculating the proportion of bacterial morphotypes: a value of 0-3 indicates normal microbiota (presence of lactobacilli); from 4-6 intermediate microbiota (decreased lactobacilli—increases habitual anaerobic microbiota), and from 7-10 changes in microbiota (absence of lactobacilli, anaerobic bacteria found).

The vaginal inflammatory response was determined by the number of leukocytes in the vaginal swab, measured at the same time as the Numerical value and by the cut off value for 5 leukocytes per field of view (using 1000× microscope magnification). The presence of fungi or Trichomonas and bacterial morphotypes as a predictive value using a qualitative assessment. The integration results of vaginal microbiota, vaginal inflammatory response, presence of yeast and Tri chomonas were assessed as the 5 basic vaginal microbes. The standard microscopic study of the balance of vaginal content (BAVACO) identified five vaginal states: I) Normal Microbiota (NM) and no Vaginal Inflammatory Response (VIR); II) normal microbiota with VIR (NM + VIR); III) intermediate microbiota without VIR (IM); IV) bacterial vaginosis (BV) (alteration of the vaginal microbiota without VIR); V) specific microbial vaginitis (NMV) (alteration of the vaginal microbiota with VIR).

Results and Discussion

Tabel 1. Distribusi of types of vaginal microbiotas based on the type of contraception equipment used by women of reproductive age

	Staphylococcus sp		***Enterobacter sp*,**		***Lactobacillus sp***		***Candida Alb***	
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Akseptor Suntik 3 bulan	4	26,7	4	36,4	3	18,75	6	35,3
Akseptor Suntik 1 bulan	2	13,3	1	9,1	2	12,5	1	5,9
Akseptor Pil Kombinasi	2	13,3	3	27,3	3	18,75	3	17,6
Akseptor IUD	5	33,3	2	18,2	6	37,5	6	35,3
Operative Wanita	2	13,3	1	9,1	2	12,5	1	5,9
	15	100	11	100	16	100	17	100

In this study, there were 34 samples of vaginal smear preparations, 9 samples were excluded. Consists of 23 contraceptive users: pills, injections, implants, IUDs. All women showed no symptoms or signs of vaginal dysfunction. Average sexual intercourse 2-3./week. Nobody is homosexual. All respondents had met the requirements for vaginal smear examination, namely not menstruating, not pregnant, 3 days before the examination did not have sexual intercourse, and did not use drugs that were inserted into the vagina. Examination using gram stain.

This descriptive study shows that women who use contraceptives experience abnormal levels of vaginal function. Analysis of various contraceptive methods and their effect on vaginal microbiota, there is a relationship between oral contraceptives and normal microbiota, and there is no relationship between normal microbiota and vaginal inflammatory responses and bacterial vaginosis, in the group using oral contraceptives, in other words that the use of oral contraceptives provides protection. The use of oral contraceptives has an effect on bacterial vaginosis and the endocrine environment. This effect may have an effect on increasing glycogen from epithelial cells as a result of estrogens, favorable lactic acid production and

lowering of vaginal pH very well for lactobacilli.

The relationship between oral contraceptives and fungal colonization is a predisposing factor associated with recurrent vulvovaginitis. Oral contraceptives cause anovulation, with the absence of peaks of estrogen and progesterone, usually present in the normal sexual cycle, but on the other hand, combined hormones add to the aggregates of hormones that contribute to changes in fungal growth. Physiologically and pharmacologically, hyperestrogenemia is associated with high fungal colonization in the vagina. Which can produce a direct mechanism mediated by estrogen, primarily increasing vaginal glycogen, lowering vaginal pH and facilitating epithelial cell attachment.

Many factors need to be added though the association of oral contraceptives with Trichomonas, and the different likelihood of IST may also have an effect. The relationship between IUD as a method of contraception and vaginal microenvironment, negative relationship with normal microbiota and positive relationship with bacterial vaginosis. Unlike women who use oral contraceptives, women who use IUDs do not have systemic hormonal factors that influence, but only the presence of a foreign body in the uterus. Therefore, the influence of sexual intercourse in this condition may affect the vaginal microbiota. MOW contraceptives do not have a complex analysis. The positive association of normal microbiota and vaginal inflammatory response are indicators of possible inflammation of the cervix or upper genital tract, urinary infection and potential fungal infection.

Vaginal microenvironment in abstinent women only occurs due to hormonal systemic effects due to the ovulation cycle, which facilitates the growth of lactobacilli, so that they are associated with normal microbiota. Naturally, the vaginal microenvironment is stable in maintaining balance but can be affected by permanent exposure which poses a risk of disruption to the reproductive organs. Depot-medroxyprogesterone acetate (DMPA) is a contraceptive hormone that is particularly popular in countries with a high prevalence of HIV and STIs. DMPA increases tissue mucosal permeability by promoting invasion. 3

Borgdorff, H, et al explained that the majority of the vaginal microbiota of women of reproductive age is dominated by lactobacilli. The dominance of non-lactobacilli is influenced by the causes of unfavorable reproductive health conditions such as HIV infection. In the study of Borgdorff, H, etc. in 2017 it was stated that the prevalence of VMBs was not dominated by lactobacilli by 38.5%, namely 32.2% of VMBs contained bacterial vaginosis and another 6.2% contained VMBs which were dominated by Bifidobacteriaceae (not including Gardnerella vaginalis).

Conclusion

The cervical secretory mucosa protects the vaginal and cervical epithelium by forming physical and biochemical barriers or barriers.
The use of oral contraceptives has an effect on bacterial vaginosis and the endocrine environment. This effect may have an effect on increasing glycogen from epithelial cells as a result of estrogens, favorable lactic acid production and lowering of vaginal pH very well for lactobacilli.

Competing Interest

The authors of this paper have no competing interest to report.

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