

Review Article

A REVIEW : CORRELATION BETWEEN VAGINAL HYGIENE AND PATHOLOGIC LEUCORRHEA

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ABSTRACT

Leucorrhea is a vaginal discharge which can be white or yellowish with a liquid or sticky consistency. Leucorrhea occurs in women worldwide with 75% of incidence and 45% of them experience pathologic leucorrhea more than 2 times in their life. The most common cause of pathologic leucorrhea is candidiasis, infected 50% of the female population worldwide. Leucorrhea in Indonesia is a common problem, in which 70% of Indonesian women in 2004 and the number increasing every year. Pathological leucorrhea will have a difference in color from normal vaginal fluid, smells bad and the patients will have complaints of itching in the vagina or pain when urinating. Pathologic leucorrhea caused by infection is related to some unhealthy behavior, including vaginal hygiene, sexually transmitted diseases and malignancy in the form of cervical cancer. Vaginal hygiene are related to pathologic leucorrhea. Poor vaginal hygiene are washing the vagina with dirty water, wrong method of washing the vagina, infrequent vaginal hair cutting, and using towels together. The use of irritants to clean the is one of the behavioral factors that also can increase the risk of leucorrhea because it can kill the normal floral and increase the pathologic microorganism in genital area. The other risk factors related to leucorrhea is using tight pants. The wrong way to choose and using underwear can increase 38% incidents of pathologic leucorrhea.

Keywords: leucorrhea, pathologic leucorrhea, vaginal discharge, irritant usage, tight underwear.

INTRODUCTION

Leucorrhea or flour albus is a condition when there is some discharge coming out from the vagina. Leucorrhea is the most common problem experienced by women in their reproductive organs.^{1,2} Leucorrhea is a vaginal discharge which can be white or yellowish with a liquid or sticky consistency.^{2,3} Leucorrhea occurs in women worldwide with 75% of incidence. As many as 45% of women in the world are said to experience vaginal discharge more than twice in their life. Vaginal discharge that occurs by infection is called pathologic leucorrhea. The most common cause of pathologic leucorrhea is candidiasis, infected 50% of the female population worldwide.⁴ Leucorrhea or vaginal discharge is the second common cause of women problems in obstetric and gynecological clinics after menstruation complaints.⁵ The percentages of leucorrhea or vaginal discharge complaint in obstetrics and gynecology clinics is 25%.² The incidence of vaginal discharge can potentially affect all women in the world, including Indonesia. Leucorrhea in Indonesia is also a common problem, in which 70% of Indonesian women in 2004 experienced vaginal discharge at least once in their life. The number of women experiencing leucorrhea in Indonesia from 2002 to 2004 continues to increase. Leucorrhea could affect every phase of age, especially at the age of puberty. In women who entered puberty phase, female reproductive organs begin to develop, including the development of sexual organs that results in the occurrence of leucorrhea that is often in this phase.² The vaginal discharge or leucorrhea varies in its smell, color, consistency and amount of fluid. The variation of leucorrhea is related to its cause.¹ The vaginal discharge of leucorrhea can be physiological vaginal fluid or pathological vaginal fluid.^{1,2,3,5,6,7}

Physiological leucorrhea is a vaginal discharge that comes out normally under certain conditions, such as in early menarche, before the menstrual cycle, when getting sexual stimulation and sometimes in pregnancy.¹ Physiological leucorrhea is characterized by odorless, the color is clear or white, and no complaints of itching and soreness in the vagina.^{3,6} Meanwhile, pathological leucorrhea is associated with infection of the female reproductive tract. Pathological leucorrhea will have a difference in color from normal vaginal fluid, smells bad and the patients will have complaints of itching in the vagina or pain when urinating.^{1,2,3,6}

Vaginal discharge or leucorrhea is a problem that is still taboo to discuss among women, especially in Asia. Vaginal discharge in women could affect their physiological condition, causing them to become anxious because they are worried from suffering any diseases and feel ashamed.^{1,2,7} The feeling of ashamed to have vaginal discharge are more often felt by girls in puberty phase because of their lack of knowledge about the reproductive organs and they feel different from their peers.⁴ Women who experience vaginal discharge often do their own treatment, so they get improper treatment and only come to the health service after their condition get severe.^{1,5} Vaginal discharge in Indonesia, especially abnormal vaginal discharge, is a serious problem because it is associated with infection.^{3,4} Abnormal vaginal discharge caused by infection is related to some unhealthy behavior, including vaginal hygiene, sexually transmitted diseases and malignancy in the form of cervical cancer.^{3,4,5,6,7} Vaginal hygiene is related to how to wash the vagina after urinating. The other behavior related to hygiene and pathological leucorrhea are the using of irritants to wash the vagina, shared towels and using tight underwear.^{3,4,5,6,7}

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Knowledge about risk factors and reproductive health to prevent pathological leucorrhea is still lacking in women in Indonesia. Prevention and knowledge about vaginal discharge or leucorrhea is important, because the risk of suffering more dangerous diseases

and psychological problems due to leucorrhoea can be avoided. The easiest way to prevent pathological leucorrhoea is practicing proper vaginal hygiene. But, the lack of knowledge about reproductive health in many Indonesian women made them practice improper vaginal hygiene resulting in the still high number of pathological leucorrhoea in Indonesia. The knowledge about correlation between vaginal hygiene and pathological leucorrhoea should be understandable. This study purpose is to review and discuss the correlation between vaginal hygiene and pathological leucorrhoea as a medium for education to increase the knowledge of reproductive health in order to prevent pathological leucorrhoea.

VAGINAL HYGIENE BEHAVIOUR

Pathological leucorrhoea is caused by infection or inflammation, which occurs due to unhealthy behaviours such as washing the vagina with dirty water, wrong method of washing the vagina, infrequent vaginal hair cutting, and often borrowing of items like towels that facilitate the easier transmission of leucorrhoea.^{4,8} Furthermore, several studies also have shown that there was a significant correlation between genital hygiene behaviour and the incidence of pathological leucorrhoea.⁹ Anatomically, the vagina is located between the urethra and the anus. Genital that is cleaned from the back to the front could increase the risk of bacteria or other germs for entering the vagina. The correct way to wipe or wash the genitals is from front to back so that the germs in the anus do not enter the vagina, to avoid infection. After washing the vagina, pat dry the genitals using toilet paper or dry towel, and avoid the use of baby wipes or scented toilet paper. Moreover, washing hands before touching genitals could prevent the transmission of germs that cause infection to the vagina, because hands can be the intermediary for germs.^{3,10,11} When using a public toilet, it is recommended to use water from a running tap rather than from a bucket or water reservoir to wash the vagina after voiding or defecation. According to studies, stagnant water in public toilets contains 70% of *Candida albicans*, a fungus that causes leucorrhoea, while tap water contains approximately only 10% to 20% of *Candida albicans*. Stagnant water in buckets or reservoirs becomes a breeding medium for *Candida albicans*, caused by not being able to flow elsewhere other than in the bucket. Besides that, the use of squat toilets are safer and could avoid the transmission of fungus, parasites, bacterias, and viruses due to the safer distance, which is far, compared to sitting toilets, where the skin is attached to the toilet seat.^{3,12} Exchanging towels could also trigger pathological leucorrhoea. Towels are a medium for the transmission of bacterias, fungus, and parasites. Towels that have been contaminated with germs can cause the germs to infect the user of the towel when it is used. It is really recommended to use one towel for one person.⁹

IRRITANTS USAGE

The use of irritants to clean the vagina such as antiseptic soap, perfume for the vagina, the use of panty liners or sprays of vaginal clean fluids is one of the behavioral factors that can increase the risk of leucorrhoea.^{13,14,16} The use of these irritants is still widely used by women, especially teenagers, where many teenagers often use these irritants without knowing the effects on their female organs, besides that teenagers are also often influenced by various advertisements marketed about these irritants to clean the vagina.¹⁵

The use of irritants that are most often used is soap, the use of cleansing soap (antiseptic) is widely used among women to be free from bacteria that can cause leucorrhoea, the use of antiseptic soap or feminine hygiene continuously can increase the occurrence of vaginal discharge and cause infection, This is caused by soap that can kill *Lactobacillus* which is a normal flora is useful for maintaining the

acidity in the vagina, so that continuous use of soap will make it easier for pathogenic bacteria to enter the vaginal canal due to natural bacteria in the vaginal area dying and disrupting the pH balance in the vagina.^{3,15,16}

Another use of irritant is in the form of a panty liner which is said to increase the number of *Eubacterium* species and reduce the number of *Lactobacillus*, besides that it can also transfer intestinal flora such as *Escherichia coli* to the vagina. This is because the use of panty liners can increase the temperature by 1.5°C, increase humidity and increase the pH of 0.6 in the vulva and perineal areas. Thus, the use of panty liners needs to be limited. Panty liners should be used only when experiencing excessive vaginal discharge, using unscented panty liners so as not to cause irritation and frequently changing panty liners when experiencing vaginal discharge.^{3,17}

TIGHT UNDERWEAR

Leucorrhoea incidents are high in women who use tight underwear.^{4,18,8} The high number of women using tight underwear is influenced by today's style and fashion especially among the teenager.¹ There are a lot of women who prioritize style and fashion over their convenience and health to keep up with the recent mode.^{4,19} Some other women still have less knowledge to choose the right underwear for avoiding leucorrhoea.^{4,8,12,19} The wrong use of underwear have correlation with the incidents of pathologic leucorrhoea. The frequency of pathologic leucorrhoea are 38% higher in women who do not practice personal hygiene including using tight underwear.^{4,12} Study that conducted in 2018 shows that among 29 responden using tight underwear, 22 of them experienced pathologic leucorrhoea or the incidents of pathologic leucorrhoea are 81% related to the use of tight underwear.¹⁹ The other study also showed that incident of the use of tight underwear resulting leucorrhoea are high (69%).¹² Choosing the right underwear and avoiding negative underwear behaviour could be effective to prevent the pathologic leucorrhoea.^{3,4,10,11,18} The use of tight underwear physically make discomfort for someone to move freely.⁴ Tight underwear potentially causing pathologic leucorrhoea due to the changing of vaginal humidity.^{3,18,19} The use of tight underwear will increase the humidity and temperature of the vagina then this situation contribute to the increasing of bacteria, fungus and parasite colonisation because humidity is suitable place for the microorganism to develop.^{3,18,19} The other important things to consider in choosing underwear to avoid pathologic leucorrhoea are, the fabric type of underwear, the frequency of changing underwear, and the behaviour of exchanging underwear. Underwear made from cotton are recommended better than underwear made from nylon or other synthetic fabrics.^{8,11,12,18,19} The number of women using synthetics fabric such as nylon, experienced pathologic leucorrhoea 1.8 times higher than they are who using cotton underwear.⁸ Nylon are the type of fabrics that does not absorbing the sweat, which makes the sweat and the natural vaginal discharge mixing then accumulate in the groin so that the environment get warmer and moist. This environment will be suitable for microorganisms, such as fungus to proliferate then contribute to infect the genitals.¹⁹ The synthetics fabrics also cause the allergic reaction and local hypersensitivity then makes the environment of the vagina changing.¹⁸

The rare frequency for changing underwear would increasing the incidents of pathologic leucorrhoea.^{3,8,10,12,19} The recommendation of changing underwear is ≥ 2 times a day. The frequency of changing underwear less than 2 times a day increases the risk of pathologic leucorrhoea 8 times higher.^{8,12,19} The underwear should be changing at least 2 times a day or when it's getting wet.^{12,19} This is in order to avoid the microorganism growing in the genitals area.⁸ Other bad behaviour related to underwear is exchanging the underwear. This

behaviour could increase the risk of pathologic leucorrhoea 3 times higher.⁸The use of exchanging underwear can transfer the causative agent of leucorrhoea from one person to another.⁸

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