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Carta al Editor
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Hygienic vulvo-vaginal habits, contraceptive use, and bacterial vaginosis

Hábitos higiénicos vulvo-vaginales, uso de anticonceptivos y vaginosis bacteriana

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Dear Editor:

Bacterial vaginosis is a common health problem leading to millions of worldwide medical consultations yearly (Morales, 2015). It is characterized by the presence of abundant and malodorous vaginal discharge and in some cases, is accompanied by itching, dysuria, and dyspareunia (Hakakha *et al*., 2002). This condition is associated with an imbalance in the vaginal bacterial flora (reduction in Lactobacilli and predominance of *Gardnerella vaginalis* and other anaerobic bacteria). One concerning aspect of this condition is that approximately 75% of the patients who undergo gynecological consultations present some alterations in their vaginal flora, and between 10% and 31% of such patients are diagnosed with bacterial vaginosis (Gonzalez *et al*., 2006; Abreu *et al*., 2023). In healthy women, vaginal fluid has a pH of 4.5 (Spiegel *et al*, 1980) and is mainly composed of lactic acid in addition to volatile aliphatic acids (acetic, propanoic, methylpropanoic, butanoic, methyl butanoic, and methylpentanoic acids), which vary in percentages throughout the menstrual cycle (Michael *et al.*, 1974; Preti and Huggins, 1975). Acetic acid, along with lactic acid, is present in higher amounts. On the other hand, in women diagnosed with bacterial vaginosis, several amines produced by *G. vaginalis* are responsible for the foul odor associated with the problem have been identified. These amines include isobutylamine, 2-phenylethanamine, putrescine, cadaverine, and 4-(2-aminoethyl) phenol (Wolrath *et al*., 2001; Jokipii *et al*., 1986).

We wondered, what are the factors that influence the change in the chemical composition of vaginal fluids. Several articles describe the main factor affecting the composition of vaginal fluids, as a pH alteration, mainly a shift from slightly acidic to higher, more alkaline values. This pH change results mainly from compulsive vulvovaginal hygiene habits and, to a lesser extent, contraceptive use. Excessive washing of the genital area (more than 2 to 3 times a day) or the use of aggressive cleaning products (with neutral or alkaline pH) can remove the protective sebum layer from the vulvovaginal surface and lead to inflammatory processes and infections, which favor the incidence of bacterial vaginosis. Therefore, it is important to use a specific intimate care soap (preferably acidic) that suits each woman's needs to maintain good intimate health (González *et al*., 2006; Guashino *et al*., 2008; López *et al*., 2015). Regarding contraceptive use, it was first described in 1974 that a relationship exists between the chemical composition of vaginal discharge and the use of hormonal contraceptives. In this study, it was found that healthy women using hormonal contraceptives maintained a relatively constant level of volatile aliphatic acids throughout the menstrual cycle. On the other hand, women not using hormonal contraceptives showed higher levels of volatile acids in the late follicular phase, progressively decreasing during the luteal phase (Lebrun, 1993). Following this idea, another study found that among women under 40 years diagnosed with bacterial vaginosis, 70.5% reported not using any contraceptive method, 11.7% used contraceptive pills, 2.9% used an intrauterine device, and 14.7% had undergone surgical sterilization. Therefore, contraceptives seem to prevent bacterial vaginosis (Bastianelli *et al.,* 2021). Based on the presented background, it is necessary to recommend that contraceptive use is always supervised and recommended by a specialist, considering each patient's particularities. Furthermore, it is essential to educate the population about the importance of timely gynecological check-ups to detect alterations in vaginal flora. Proper self-examination can help differentiate temporary bad odor, usually normal, from persistent bad odor, which may be associated with bacterial vaginosis. This condition can be confirmed using the Nugent system (Nugent *et al.*, 1991). Lastly, when choosing intimate use soaps, preference should be given to brands that provide clear and precise information on frequency of use, pH, and have the authorization of the competent regulatory agency to guarantee the safety and well-being of users.

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