ASSESSMENT OF *LACTOBACILLUS CRISPATUS'* ROLE IN VAGINAL INFECTIONS: FRIEND OR FOE?

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ABSTRACT

Lactobacillus spp. are the most prevalent microorganisms in the vaginal milleu. Several probiotic mechanisms have been associated with *Lactobacillus*, but the most relevant one is lactate production – resulting in a low pH value, typical of the healthy vagina. However, its pathogenic state is still unknown. We aim to elucidate the role of a commensal vaginal microorganism, *Lactobacillus crispatus*, in vaginal infections. Twenty-four vaginal washes have been collected from women attending a gynaecology consultation of a private clinic. The samples were categorized according with clinical diagnosis at the time of sampling. The distribution of bacterial species, and their prevalence was assessed by Next-Generation Sequencing of the 16S rRNA V4 region. In addition, L- and D-lactate concentration, and LDH enzymatic activity was quantified in all washes by a commercial kit. Detection of *Candida* spp. was performed by PCR. *L. crispatus* was dominant (>70%) in 11 out of 24 samples – diagnosed for vaginal atrophy (VA, 3), cytolytic vaginosis (CV, 2) and lactobacillosis (LB, 2). Lactate was increased in CV, LB and VA cases only. The remaining samples, diagnosed for vulvovaginal candidosis in its majority, had lower prevalence of *L. crispatus*; and lower to moderate lactate metabolite. There was not a direct relationship between LDH enzymatic activity and clinical diagnosis. *L. crispatus* dominance, associated with increased lactate production, was observed in CV, LB and VA cases. These results indicate that this microorganism might have a role in dysbiosis of the vagina associated with these specific pathologies.

Keywords: *Lactobacillus crispatus*, lactacte, vaginal infections, candidosis.

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