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Biofilms and vulvovaginal candidiasis

Carmen Rodríguez-Cerdeira [1], Miguel Carnero Gregorio [2], Alberto Molares-Vila [3], Adriana López-Barcenas [4], Gabriella Fabbrocini [5], Brunilda Bardhi [6], Ardiana Sinani [7], Elena Sánchez-Blanco [8], Roberto Arenas-Guzmán [9], Rigoberto Hernandez-Castro [10]

Affiliations

Affiliations

1 Efficiency, Quality and Costs in Health Services Research Group (EFISALUD), Galicia Sur Health Research Institute (IIS Galicia Sur), SERGAS-UVIGO, Spain; Dermatology Department, Hospital do Meixoeiro and University of Vigo, Vigo, Spain; European Women's Dermatologic and Venereologic Society (EWDVS), Vigo, Spain. Electronic address: carmencerderia33@gmail.com.
2 Efficiency, Quality and Costs in Health Services Research Group (EFISALUD), Galicia Sur Health Research Institute (IIS Galicia Sur), SERGAS-UVIGO, Spain; Department of Biochemistry, Genetics and Immunology, University of Vigo, Vigo, Spain.
3 Efficiency, Quality and Costs in Health Services Research Group (EFISALUD), Galicia Sur Health Research Institute (IIS Galicia Sur), SERGAS-UVIGO, Spain; Department of Department of Analytical & Food Chemistry, Universidade de Vigo (UVIGO), Spain.
4 Efficiency, Quality and Costs in Health Services Research Group (EFISALUD), Galicia Sur Health Research Institute (IIS Galicia Sur), SERGAS-UVIGO, Spain; Mycology Service, Hospital Manuel Gea González, Mexico City, Mexico.
5 Dermatology Service, University of Napoli Federico II, Naples, Italy.
6 Dermatology Service, Venus Clinic, Tirana, Albania.
7 Dermatology Service, Military Medical Unit, University Trauma Hospital, Tirana, Albania.
8 Galician Education Service, Vigo, Spain.
9 Mycology Service, Hospital Manuel Gea González, Mexico City, Mexico.
10 Department of Ecology of Pathogen Agents, Hospital Manuel Gea González, Mexico City, Mexico.

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Abstract

Candida species, including C. albicans, are part of the mucosal flora of most healthy women, and inhabit the gastrointestinal and genitourinary tracts. Under favourable conditions, they can colonize the vulvovaginal mucosa, giving rise to symptomatic vulvovaginal candidiasis (VVC). The mechanism by which Candida spp. produces inflammation is unknown. Both, the blastoconidia and the pseudohyphae are capable of destroying the vaginal epithelium by direct invasion. Although the symptoms are not always related to the fungal burden, in general, VVC is associated with a greater number of yeasts and pseudohyphae. Some years ago, C. albicans was the species most frequently

involved in the different forms of VVC. However, infections by different species have emerged during the last two decades producing an increase in causative species of VVC such as C. glabrata, C. parapsilosis, C. krusei and C. tropicalis. Candida species are pathogenic organisms that have two forms of development: planktonic and biofilm. A biofilm is defined as a community of microorganisms attached to a surface and encompassed by an extracellular matrix. This form of presentation gives microorganisms greater resistance to antifungal agents. This review, about Candia spp. with a special emphasis on Candida albicans discusses specific areas such as biofilm structure and development, cell morphology and biofilm formation, biofilm-associated gene expression, the cell surface and adherence, the extracellular matrix, biofilm metabolism, and biofilm drug resistance in vulvovaginitis biofilms as an important virulence factor in fungi.

Keywords: Antifungals; Biofilms; Candida albicans; Candida spp.; Probiotics; Vulvovaginal candidiasis.

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