IDENTIFICATION OF CANDIDA ALBICANS ON MORPHOLOGICAL FEATURES

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Introduction. Fungi of the genus *Candida* are commensals on human mucosal surfaces, but can become one of the most important invasive pathogens causing a variety of superficial fungal lesions forms and severe invasive fungal infections, especially in immunocompromised patients and during antibiotic treatment. Therefore, the accurate identification of *Candida* species may provide important information for the effective treatment of patients.

In recent decades the incidence of diseases caused by *C. albicans* is steadily increasing, accounting for more than 15% of the inflammatory nosology total etiological structure. In the 40-60% of disease cases remains undiagnosed or diagnosed late.

For the identification of *C. albicans* cultural, microscopic, molecular-genetic and serological methods are commonly used.

Aim. The purpose of this work is to study the various methods of yeasts isolates morphological characteristics research for their primary species identification.

Materials and methods. In experiments the museum strain of *C. albicans* and two clinical isolates that were identified during vaginal and intestinal candidiasis were used.

When studying the cultural and morphological characteristics Sabouraud medium, potato, rice and corn agar and bovine serum were used.

For the *Candida* cultures microscopic examination the native (crushed drop) and painted (by methylene blue solution) smear preparations were examined.

Results and discussion. To study the yeasts cultural properties the inoculation into liquid and solid Sabouraud medium are used. In simple nutrient media under (25-27)°C *C. albicans* form yeast cells and pseudomycelium.

The colonies are convex, shiny, creamy, opaque. In tissue *Candida* grow as yeast cells and form pseudohyphae.

Candida species differ by filamentation type (Mycotoruloides and Mycotorula) when growth on glucose-potato and rice agar: glomeruli location - small rounded clusters of yeast cells around pseudomycelia.

To growth types diagnostics the inoculation on potato agar supplemented with 1% glucose, rice and corn agar was carried out.

The germ tubes formation is a *C. albicans* invasive properties manifestation. The germ tube growth was detected by cultivating in liquid protein media (bovine serum) at 37°C for 2-4 hours.

Blastospores are the asexual reproductive cells of fungi and yeast, which produced by budding. The yeasts blastospores capable to filamentation (i.e. elongate and form a pseudomycelia). Pseudomycelia differ from the true mycelium by lack of common coat.

Detection of pseudomycelia by pathological material microscopy is important for laboratory confirmation of the pathogen yeast-like nature.

Chlamydospores are the spores of vegetative propagation of fungi, with thick (often double) cell wall. They are generated by the hyphen decay into single cells. Chlamydospores can be terminal or intercalary (in the middle of mycelial filament). This type of yeast-like fungi reproduction may also be performed by mycelium or individual cells budding.

Chlamydospores include reserve nutrients necessary for cell activity, are involve in physiological processes and play a protective function.

For the chlamydospores detection the inoculation area on the rice agar was covered with a sterile coverslip and after incubation at 25 °C for 2-5 days the microscopy was carried out.

Conclusions. The experimental results confirm the importance of the *C. albicans* primary identification based on morphological characteristics by using of inexpensive routine microbiological tests available to most laboratories for the detection of fungus increased invasiveness and pathogenicity for more effective candidiasis diagnosis.