O0267 **Value of beta-D-glucan and CAGTA biomarkers in diagnosing invasive candidiasis among medical and surgical patients**

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Background: Invasive Candidiasis (IC) is the most common Invasive Fungal Infection (IFI) among non-neutropenic patients and diagnosis is based on blood cultures, which sensitivity never exceeds 70%. For these reasons, attempts have been made to identify several biomarkers for early diagnosis. Use of two biomarkers (1-3) -β-D-Glucan (BDG) and CAGTA (*Candida albicans* Germ-Tube Antibody) was found useful among ICU patients. The aim of our retrospective study was to evaluate whether the association of BDG and CAGTA and lead to an earlier and more specific diagnosis of IC in medicine and surgery wards patients and therefore initiate a timely targeted therapy.

Materials/methods: We enrolled patients hospitalized in Departments of Medicine, Geriatric and Surgery from the Verona University Hospital. BDG test on serum for suspected IFI were performed and then CAGTA in CLIA using the ThunderBolt® instrument (Vircell microbiologists- Granada Spain) along with the Kit INVASIVE CANDIDIASIS (CAGTA) VIRCLIA® IgG MONOTEST. Results of blood culture performed in the same day (+/- 2 dd) of serum sample was also evaluated.
PPV, NPV, Sensitivity, and Specificity of the single tests and the association of BG and CAGTA were evaluated.

Results: 257 serum samples of 222 patients were examined: 100 with positive blood cultures for Candida and 157 with negative blood cultures. Isolated Candida species were: *C.albicans*, *C.parapsilosis*, *C.tropicalis*, *C.glabrata* e *C.lusitaniae*; among these, 153 were positive to CAGTA and 169 to BDG, 104 was negative to CAGTA and 88 to BDG. PPV was 61%, NPV was 96%, Sensitivity and Specificity was 96% and59% respectively (Tab.1).

Conclusions: The use of the two associated BDG and CAGTA biomarkers leads to an improvement in IC diagnosis, with an increase in PPV. Therefore CAGTA could be used as a second level test. In addition, *Candida albicans* germ tube antibodies, CAGTA, was also positive during positive blood cultures caused by the *C.albicans*, *C.parapsilosis*, *C.tropicalis*, *C.glabrata* e *C.lusitaniae*, which increases its utility in a wide range of candidiasis.

	Sensibility	Specificity	PPV	NPV

CAGTA and BDG/BC	96%	59%	61%	96%
CAGTA or BDG/BC	97%	54%	57%	96%
CAGTA/BC	94%	62%	61%	94%
BDG/BC	94%	54%	57%	93%

Tab.1