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P2177 Real-life diagnostic performance of T2Candida among ICU patients with risk factors for invasive candidiasis

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Background: Invasive candidiasis (IC) comprises candidaemia and deep-seated candidiasis. Blood culture (BC) is the gold standard but sensitivity is low. T2Candida has recently been CE marked and FDA cleared. We investigated the performance of T2Candida, BC and *Candida* mannan antigen (MAg) detection in a high-risk ICU population.

Materials/methods: One-hundred-twenty-six ICU patients at high risk of IC with sepsis despite three days of broad-spectrum antibiotics were included. Paired BC, T2Candida and MAg were obtained twice weekly (334 sets). Patients were classified into proven, likely, possible or unlikely IC based on patient record review.

Results: At enrolment, 92 (77%) patients were receiving antifungal therapy (fluconazole 66%). Fifteen (11.9%) patients were positive by BC (n=4), T2Candida (n=11) or MAg (n=10). The T2Candida species at inclusion (*C. albicans/tropicalis*: 8/11 (72.3%) and *C. glabrata/krusei*: 3/11 (27.3%)) was confirmed by BC or colonising isolates in 10/11 cases (no ID for the colonising *Candida* for one case). T2Candida stayed positive longer (mean 3.2 days, range 0-5 days,) than BC. Fewer patients with positive compared to negative BCs received antifungal therapy at the time of inclusion (2/5 (40%) versus 90/115 (78%), P=0.008). A similar trend was observed for the T2Candida test (7/11 (64%) versus 80/103 (78%), P=0.287), but not for the MAg test (9/10 (90%) versus 78/103 (76%), P=0.449).

Patients were classified with proven (11), likely (6), possible (11) and unlikely (98) IC. The sensitivity for proven/proven+likely IC versus other was higher for T2Candida (55%/59%) compared to BC (45%/29%) and MAg (36%/41%). The sensitivity was 64-65% for test-combinations including T2Candida compared to 53-55% for BC+MAg for proven and proven/likely vs others. The specificity was >90% for all tests and test combinations except triple-testing. The PPV was highest for T2Candida (50%/83% for proven/proven+likely). The NPV was similar across tests (94-96% (proven) and 90-95% (proven+likely)).

Conclusions: The diagnostic performance was modest for all the tests, and lower for T2Candida than reported for candidaemia in the FDA-clearance study which included laboratory-spiked samples. Yet T2Candida was the test contributing the most to improving the diagnostic sensitivity and NPV yet retaining a good specificity and thus may improve the diagnosis of IC.