INPLASY

Diagnostic accuracy of T2Candida for deep-seated candidiasis candidiasis: a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202380045

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 August 2023 and was last updated on 21 January 2024.

INTRODUCTION

Review question / Objective What is the benefit in terms of diagnostic accuracy linked with the use of T2Candida for the diagnosis of deep-seated candidiasis, compared with reference standard?

Condition being studied T2Candida, based on T2 magnetic resonance technology, is a Food and Drug Administration (FDA) tool approved for the diagnosis of invasive candidiasis, including candidemia and deep-seated candidiasis, potentially rapidly detecting the five most commonly isolated Candida sp. in approximately 5 h directly from the whole blood. Invasive candidiasis has relevant attributable mortality and early appropriate antifungal treatment is associated with improved outcomes . Unfortunately, treatment of invasive candidiasis is frequently delayed, mainly since cultures of blood and specimens from deep-seated sites of infection present sensitivity of approximately 50% and slow turnaround times. T2Candida is a promising tool, a non-culture based diagnostic platform, that can increase sensitivity and improve turnaround times when it comes to invasive candidiasis, especially to deep-seated candidiasis.

METHODS

Search strategy An appropriate selection of keywords will consent to retrieve useful records from three medical databases.

Participant or population Patients affected by deep-seated candidiasis.

Intervention T2Candida (index text).

Comparator Traditional diagnostic methods for deep-seated candidiasis.

Study designs to be included Test accuracy studies having a cross-sectional design in which the index test result of each study participant is compared with the corresponding result, for the same participant, obtained with the reference

standard (the two tests need to be performed at the same time).

Eligibility criteria To be included, the diagnostic accuracy studies will have to report sufficient detail to extract or calculate the number of true positives, false positives, false negatives, true negatives; namely, sufficient data to create a 2 x 2 table.

Information sources MEDLINE, EMBASE, SCOPUS.

Main outcome(s) Outcomes evaluated for the clinical utility of T2Candida for the diagnosis of deep-seated candidiasis. will include the performance characteristics of sensitivity, specificity, diagnostic odds ratios, likelihood ratios, positive predictive values (PPVs), and negative predictive values (NPVs). Factors influencing test performance and heterogeneity among studies will also be assessed.

Quality assessment / Risk of bias analysis The QUADAS-2 will be used for the assessment of risk of bias and applicability of primary studies included.

Strategy of data synthesis In the primary metaanalysis, we will pool assay sensitivities and specificities from the studies selected. For each analysis, we will present sensitivity and specificity estimates as well as pooled sensitivity and specificity. We will also compute 95% confidence intervals (CIs) for each result. All analyses will be performed by using the MetaDisc 2.0 and MetaDTA ShinyApps in the R environment.

Subgroup analysis If feasible, analyses will be conducted according to variables such as adult vs pediatric patients, intensive care unit (ICU) versus non-ICU.

Sensitivity analysis As a sensitivity analysis, we will consider only study not prone to bias.

Language restriction English.

Country(ies) involved Italy.

Keywords Candida; T2Candida; diagnostic accuracy; meta-analysis; deep-seated candidiasis.

Contributions of each author

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