

INPLASY PROTOCOL

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None.

Role of Point-of-Care Ultrasound in the Dignosis of Abscess in Pediatric Skin and Soft Tissue Infections: A Protocol of Systematic Review and Meta-analysis

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Review question / Objective: To evaluate the effect of point-of-care ultrasound (POCUS) for the diagnosis of abscess and to compare the diagnostic accuracy of POCUS and physical examination (PE) in pediatric patients with skin and soft tissue infections (SSTI) in the emergency department.

Condition being studied: The diagnostic performance of point-of-care ultrasound for abscess in pediatric patients is variable in these studies. To our knowledge, no meta-analysis of the diagnostic value of POCUS in the differentiation of abscess and cellulitis in pediatric patients with SSTI has been reported. Thus, we thought it is necessary and timely to summarize the currently available data to provide valuable information for clinical practice.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 January 2021 and was last updated on 16 January 2021 (registration number INPLASY202110063).

INTRODUCTION

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pediatric patients with skin and soft tissue infections (SSTI) in the emergency department.

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METHODS

Participant or population: Pediatric patients suspected with skin and soft tissue infections.

Intervention: Point-of-care ultrasound in differentiating abscess from cellulitis in pediatric patients with SSTI.

Comparator: Reference standards were adopted to confirm abscess, such as incision and drainage or clinical follow-up.

Study designs to be included: Diagnostic studies were included.

Eligibility criteria: 1 Diagnostic studies were included. 2 Studies evaluating the diagnostic accuracy of POCUS in differentiating abscess from cellulitis in pediatric patients with SSTI were included. 3 Reference standards were adopted to confirm abscess, such as incision and drainage or clinical follow-up.

Information sources: Pubmed, EMBASE and Cochrane Library.

Main outcome(s): Sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and area under the curve.

Quality assessment / Risk of bias analysis: The methodological quality of each included study was assessed by the Quality Assessment of Diagnostic Accuracy Studies 2 tool.

Strategy of data synthesis: This meta-analysis was performed by StataSE 15 (Stata Corporation, College Station, Texas). All statistical analyses were performed by one author, who has experience in performing meta-analysis. The pooled

estimates of sensitivity, specificity, positive likelihood ratio (PLR), negative likelihood ratio (NLR) and diagnostic odds ratio (DOR) with corresponding 95% confidence intervals (CIs) were calculated by a bivariate random effect model.

Subgroup analysis: Subgroup analysis was performed according to variables like study design, year published, abscess prevalence, sample size.

Sensibility analysis: A sensibility analysis was performed to assess the influence of any one study on the pooled sensitivity and specificity, by omitting one individual study at one time.

Country(ies) involved: China.

Keywords: Pediatrics; Skin and soft tissue infections; Point-of-care ultrasound; Diagnosis; Meta-analysis.

Contributions of each author:

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