

INPLASY PROTOCOL

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Corresponding author:
Cong Wang

wc027214@163.com

Author Affiliation:
The First Affiliated Hospital of
Dalian Medical University

Support: Liaoning Natural
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**Review Stage at time of this
submission:** Preliminary
searches.

Conflicts of interest:
None.

The value of TI-RADS combined with superb microvascular imagine in distinguishing thyroid nodules: A protocol for systematic review and meta-analysis

Wang, C¹; Tian, C².

Review question / Objective: This meta-analysis aimed to evaluate the value of thyroid imaging report and data system (TI-RADS) combined with superb micro-vascular imagine technique(SMI) in distinguishing benign and malignant thyroid nodules.

Condition being studied: Previous studies have shown that SMI can detect the blood flow signals of neovascularization in tumor and increased the sensitivity for detecting thyroid cancer. However, the results of these studies have been contradictory and the sample sizes were not enough. Therefore, the present meta-analysis aimed at evaluating the value of TI-RADS combined with SMI in distinguishing benign and malignant thyroid nodules.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 July 2020 and was last updated on 26 July 2020 (registration number INPLASY202070113).

INTRODUCTION

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flow signals of neovascularization in tumor and increased the sensitivity for detecting thyroid cancer. However, the results of these studies have been contradictory and the sample sizes were not enough. Therefore, the present meta-analysis aimed at evaluating the value of TI-RADS combined with SMI in distinguishing benign and malignant thyroid nodules.

METHODS

Participant or population: Thyroid nodule.

Intervention: TI-RADS combined with superb microvascular.

Comparator: TI-RADS.

Study designs to be included: Clinical cohort or case control studies.

Eligibility criteria: The following 4 criteria were required for each study: (1) the study design must be a clinical cohort study or diagnostic test, (2) the study must relate to the accuracy of TI-RADS and SMI for the differential diagnosis of benign and malignant thyroid nodules, (3) all thyroid nodules were histologically confirmed after SMI, and (4) published data in the fourfold (2×2) tables must be sufficient. If the study did not meet all of these inclusion criteria, it was excluded.

Information sources: PubMed, Web of Science, Cochrane Library, and Chinese biomedical databases.

Main outcome(s): The areas under the SROC curve.

Additional outcome(s): Sensitivity(Sen), specificity(Spe).

Quality assessment / Risk of bias analysis: Methodological quality was independently assessed by two researchers based on the quality assessment of studies of diagnostic accuracy studies (QUADAS) tool.

Strategy of data synthesis: The STATA version 14.0 (Stata Corp, College Station, TX, USA), Meta-Disc version 1.4

(Universidad Complutense, Madrid, Spain), and MedCalc version 15.2.2 (MedCalc Software, Ostend, Belgium) softwares were used for meta-analysis. We calculated the pooled summary statistics for sensitivity (Sen), specificity (Spe) with their 95% confidence intervals (CIs). The summary receiver operating characteristic (SROC) curve and corresponding area under the curve (AUC) were obtained. We compared the two AUC areas of single TI-RADS and TI-RADS combined with SMI.

Subgroup analysis: Language, sample size, instrument.

Sensibility analysis: Sensitivity analysis will be performed to evaluate the influence of a single study on the overall estimate.

Country(ies) involved: China.

Keywords: TI-RADS classification, Superb Microvascular Imaging, Thyroid nodule, Ultrasonography.

Contributions of each author:

Author 1 - Cong Wang.

Author 2 - Congliang Tian.