



Journal of the Endocrine Society

AN OPEN ACCESS PUBLICATION

ENDO 2019 ABSTRACTS

101ST ANNUAL MEETING AND EXPO OF THE ENDOCRINE SOCIETY



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MON-580 Diagnostic Accuracy of Different Thyroid Ultrasound Classification Systems and the Added Value of Operator Subjective Impression in Stratifying Nodule Risk

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Journal of the Endocrine Society, Volume 3, Issue Supplement_1, April-May 2019, MON-580, <https://doi.org/10.1210/js.2019-MON-580>

Published: 30 April 2019

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Abstract

Background and aim. Several ultrasound (US) classifications for thyroid nodules have been proposed. Since most of them are hardly applicable in clinical practice, we set up the Modena US Thyroid Classification (MUT) that stratifies the risk of malignancy based on knowledge derived from scientific literature and on clinician subjective impression. The aim of the present study was to test the diagnostic accuracy of different thyroid US classification systems, AACE/ACE-AME, American Thyroid Association (ATA), British Thyroid Association (BTA), and MUT, and to evaluate inter-classification agreement. **Methods.** We prospectively enrolled 111 patients (33M, 78F; age 19–75) with indeterminate, suspicious or malignant cytology. All the patients underwent neck US before surgery and a score according to MUT was assigned: 1 not certainly nodular; 2 not suspect; 3 indeterminate; 4 suspect; 5 very suspect. Then, we retrospectively classified nodules according to AACE/ACE-AME, ATA and BTA. US

pattern was related to histology. Sensitivity, specificity, diagnostic cut-off value and accuracy of each classification were calculated. The overall agreement between classifications was quantified by Bland-Altman test. The agreement between single nodule analysis by different classifications was evaluated considering Weighted Cohen's Kappa. **Results.** Fifteen patients had uninodular and 96 multinodular goiter, for a total of 457 nodules. MUT has the highest accuracy (AUC 0.808) and specificity (89%), followed by ATA and BTA, and finally by AACE/ACE-AME. ATA and BTA are highly interchangeable and MUT is comparable to both of them. AACE/ACE-AME is the least interchangeable with all the other classifications. Considering agreement between single nodule analysis by different classifications, ATA and BTA had the best ($k=0.723$); AACE/ACE-AME showed slight agreement with BTA ($k=0.177$) and MUT ($k=0.183$), and fair agreement with ATA ($k=0.282$); MUT had fair agreement with both ATA ($k=0.291$) and BTA ($k=0.271$). **Conclusions.** Our findings bring out the limit in specificity of the current reference classifications, which improves when the subjective impression of the clinician is considered.

Issue Section: [Thyroid and Thyroid Nodule Imaging and Cancer Risk Stratification](#)

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