

## Title: Comparison of diagnostic accuracy of K-TIRADS and EU-TIRADS guidelines in detection of thyroid malignancy from ultrasound

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**Background:** This retrospective study compared the diagnostic accuracy of histopathologically proven thyroid nodules between the Korean Thyroid Imaging Reporting and Data System (K-TIRADS) and the European Thyroid Imaging Reporting and Data System (EU-TIRADS) guidelines for the management of thyroid nodules characterized by ultrasonography. For thyroid nodules resected from 2018 to 2021 at our institution, static ultrasound images of each nodule were reviewed and stratified into both systems. Agreement between above two classifications was compared based on histopathological results.

**Results:** A total 403 thyroid nodules from 213 patients were evaluated. Each nodule was characterized by ultrasonography and stratified into K-TIRADS and EU-TIRADS classifications. The diagnostic accuracy was as follows: K-TIRADS sensitivity 85.3% (95% CI: 78.7–91.9) specificity 76.8% (95% CI: 72.1–81.7), positive predictive value 57.8% (95% CI: 50.1–65.4) negative predictive value 93.4% (95% CI: 90.3–96.5); EU-TIRADS sensitivity 86.2% (95% CI: 79.7–92.7), specificity 75.5% (95% CI: 70.6–80.4), positive predictive value 56.6% (95% CI: 49.1–64.2), negative predictive value 93.7% (95% CI: 90.6–96.8). Excellent agreement in risk stratifications between both systems was found (kappa 0.86).

**Conclusions:** Ultrasound thyroid nodules categorized by either by K-TIRADS or EU-TIRADS are useful to predicting malignancy and perform risk stratification with similar results. This study confirmed that both K-TIRADS and EU-TIRADS have high diagnostic accuracy and both guidelines may be used as an effective tool for management planning of patients with thyroid nodules in daily clinical practice.

### Biography

Naruporn Marukatat is diagnostic radiologist at Faculty of Medicine, Vajira hospital, Navamindradhiraj University for over 25 years. She was a visiting fellow in the Breast Health Center, Mallinckrodt Institute of Radiology, Washington School of Medicine, St. Louis, U.S.A., 2001. She is an instructor of radiology and was director of diagnostic radiology, department of radiology at Vajira hospital during 2011-2020. Her research interest is focused on ultrasound head and neck, superficial organ and breast imaging. She is an expert in breast and superficial organ intervention.