ABSTRACT

*CT scan requires accurate slice thickness to produce high-quality medical images. The American college of radiologi 464 phantom is commonly used as a standard for CT image quality testing to ensure measurement accuracy. This study aims to evaluate the effect of threshold variations (*0.25; 0.30; 0.35; 0.40; 0.50 *on slice thickness measurements using the automatic IndoQCT method, compared to the manual wire ramp-based method on the ACR 464 phantom. A total of 52 images from 6 scanner vendors with a slice thickness of 10 mm were analyzed in this study. The results indicate that the 0.35 threshold yields the best accuracy, with a difference of +0.064 mm and a deviation of 0.515 mm, and 88.5% of the data fell within the ACR tolerance range (9.5–10.5 mm). Comparison between the automatic and manual methods shows that IndoQCT has high accuracy, althogh differences were observed with certain scanner vendors, especially with devices that have high noise or specific image configurations. These results support the use of IndoQCT as a consistent and accurate tool for evaluating slice thickness, with an optimal threshold recommendation of 0.35.*

Keywords**:** *slice thickness, IndoQCT, CT scan, threshold, American college of radiologi 464 phantom*