Accuracy of Transabdominal Sonography in Detecting Renal Parenchymal Disease at Cardinal Santos Medical Center From January 1, 2014 to December 31, 2017

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OBJECTIVES: The purpose of this study is not to classify a disease by its specific difference in echogenicity but rather to assess the accuracy of the operator in diagnosing diffuse renal parenchymal disease by ultrasound with the help of the gold standard in diagnosis through histopathology.

MATERIALS AND METHODS: All patients who underwent ultrasound-guided biopsy of the native kidneys in our institution from January 1, 2014 to December 31, 2017 were included in the study population. Patients' recent ultrasound reports were reviewed, recorded, tallied and arranged in categorical variables. Frequencies were then computed. Sensitivity, specificity, PPV, NPV and accuracy were determined using MedCalc with a CI=95%.

RESULTS: Out of 86 patients representing the study population, 58(67.4%) showed a finding of chronic renal parenchymal disease on ultrasound while 28(32.6%) revealed normal findings. Of the 58 with chronic parenchymal disease, 50(82.2%) were histopathologically positive for renal parenchymal disease. 8(13.8%) patients showed normal histopathology. Of the 28 with normal kidneys on ultrasound 18(64.3%) patients tested positive for chronic renal parenchymal disease while 10(35.7%) showed normal histopathology. Estimated computed values for diagnostic accuracy revealed as follows: sensitivity (74%), specificity (56%), PPV (86%), NPV (36%) and accuracy (70%).

CONCLUSION: This study revealed a statistically significant sensitivity, PPV and accuracy of ultrasonography in predicting presence of chronic renal parenchymal pathologies. However, a slightly lower rate of specificity and NPV were revealed. Overall, this study corresponds with the current available data regarding use of ultrasound as screening and diagnostic tool in assessing chronic renal parenchymal diseases.