

UTERINE CAVITY ASSESSMENT IN INFERTILITY: COMPARISON OF TRANSVAGINAL ULTRASOUND SCAN WITH HYSTEROSCOPY

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Background: Accurate diagnosis of uterine cavity abnormality is important in determining the outcome of infertility treatment. The trans-vaginal ultrasound scan (TVS) is an accessible, affordable and non-invasive tool preponderantly adopted in uterine cavity assessment for women with infertility and has remained a first line tool.

However, hysteroscopy which is the gold standard for the assessment of the uterine cavity is more invasive and less available in low resource population. If the TVS is compared with hysteroscopy in detecting uterine cavity pathology, its diagnostic accuracy could influence clinical practice to reduce the frequency of diagnostic hysteroscopy and save cost during investigation and treatment of infertility.

Objective: The objective of this study is to determine the diagnostic accuracy and predictive ability of trans-vaginal ultrasound scan in uterine cavity assessment during infertility evaluation compared with hysteroscopy as the gold standard.

Design: This was a hospital based prospective cross-sectional study in 2 tertiary centres in Abuja Nigeria.

Methods: We recruited 103 consecutive patients who attended the gynaecology /IVF clinic for fertility work-up, and were subjected to both TVS and diagnostic hysteroscopy; performed during the late follicular phase of their menstrual cycle. The data was analysed using SPSS software (version 23, Chicago, Illinois, USA).

Results: The mean age of the population was 38.1 years and the 31-40 age bracket constituted 45%, being the highest. Most women had secondary infertility (70%). Uterine adhesion was most prevalent (39.7%), followed by submucuous fibroids (27.6%). The sensitivity, specificity, PPV and NPV for uterine adhesions; were 73.9%, 90.0%, 68.0% and 92.3% respectively. The sensitivity, specificity, PPV and NPV for submucuous fibroids; were 81.3%, 98.1%, 92.9% and 96.6% respectively. The overall sensitivity, specificity, PPV and NPV for TVS in this study; were 82.7%, 84.3%, 84.3% and 82.7% respectively. The ROC - Area under the Curve. AUC = 0.835, P value < 0.0001 (95CI .725 - .918) plotted from this study was considered significant. This study also showed that previous uterine surgery was associated with increased TVS detection of uterine adhesions.

Conclusion: The overall accuracy for detection of uterine cavity pathology by TVS compared with hysteroscopy was high. Although it varied with pathology assessed, the predictive values showed that TVS is a reliable tool for uterine cavity assessment.

Key words: Uterine Cavity abnormalities, infertility, TVS, hysteroscopy