



Accuracy of **Ovarian-Adnexal Reporting and Data System (O- RADS)** scoring system in the diagnosis of malignant adnexal masses among cases seen at a tertiary medical center

Dhanielle E. Garcia-Ramos, MD, FPOGS, FPSUOG; Abigail Elsie DG. Castro, MD, MaEd, FPOGS, FPSUOG;
Lylah D. Reyes, MD, FPOGS, MSc; Cherry Go-Palomar, MD, MAEd, FPOGS, FPSUOG

INTRODUCTION

Adnexal masses pose diagnostic challenges due to varied etiologies. Prompt recognition is vital for optimal patient outcomes. The Ovarian-Adnexal Reporting and Data System (O-RADS) offers a standardized approach categorizing risk based on structured analysis of imaging features.

OBJECTIVE

Determine the accuracy of the O-RADS scoring system in diagnosing malignant adnexal masses among patients seen at a tertiary medical center.

METHODS

This is a cross-sectional study which included women with adnexal masses assessed by a two-dimensional ultrasonography with O-RADS scoring system and later underwent surgery. Sensitivity, specificity, positive and negative predictive values and likelihood ratios were computed for O-RADS with histopathology as the reference standard. Prevalence of the adnexal mass according to menopausal status and ultrasound features were the secondary outcomes.

RESULTS

Eighty-six women were enrolled in the study, with 29.07% (95% CI: 19.28%, 38.86%) diagnosed with malignant adnexal mass. Based on O-RADS scoring, 31.4% (95% CI: 21.39%, 41.4%) of adnexal masses were classified to be malignant. Overall accuracy was 90.70% (95% CI: 82.49%, 95.9%).

Table 1. Prevalence of malignant adnexal mass according to menopausal status and ultrasound features (N=86)

Variables	Number of participants	Malignant n(%)	p-value
Menopausal status			0.001*
Pre-menopause	29 (33.72%)	15 (51.72%)	
Menopause	57 (66.28%)	10 (17.54%)	
Characteristics of the mass			
Physiologic	0 (0%)	-	
Lesion category	86 (100%)	86% (100%)	
Size of the mass			0.185 †
≤3 cm	6 (6.98%)	0 (0%)	
>3 cm to 10 cm	48 (55.81%)	13 (27.08%)	
>10 cm	32 (37.21%)	12 (37.5%)	
Vascularity			<0.001* †
No flow	61 (70.93%)	7 (11.48%)	
Minimal flow	15 (17.44%)	9 (60%)	
Moderate flow	6 (6.98%)	6 (100%)	
Very strong color flow	4 (4.65%)	3 (75%)	
Solid component of the mass			<0.001*
Absent	61 (70.93%)	7 (11.48%)	
Present	25 (29.07%)	18 (72%)	
Fluid collection in the mass			0.057 †
Absent	76 (88.37%)	19 (25%)	
Present	10 (11.63%)	6 (60%)	
Peritoneal thickening or nodules			0.499 †
Absent	84 (97.67%)	24 (24.4%)	
Present	2 (2.33%)	1 (50%)	

† Fisher's exact test was used instead of the chi-square test
* Statistically significant p-value <0.05

Table 2. Measure of accuracy of ORADS in detecting malignant adnexal mass (N=86)

Parameters	% (95% Confidence Interval)
Sensitivity	88.00% (81.13 to 94.87%)
Specificity	91.80% (86.01 to 97.00%)
Negative predictive value	81.48% (73.27 to 89.69%)
Positive predictive value	94.92% (90.27 to 99.56%)
Positive likelihood ratio	10.74 (4.58 to 25.17)
Negative likelihood ratio	0.13 (0.05 to 0.38)

CONCLUSION

Ovarian-Adnexal Reporting and Data System (O-RADS) is a highly sensitive and specific tool with a favorable positive and negative predictive value. It generates a moderate to large shift in diagnosing malignant adnexal masses which may be often conclusive.

The O-RADS is reasonably proficient in detecting malignant adnexal masses. Aside from diagnosis, it may aid in the decision-making for the management of ovarian pathology