2022-RA-695-ESGO COMPARISON OF ADNEX MODEL WITH GI-RADS ULTRASONIC SCORING SYSTEM IN EVALUATION OF ADNEXAL MASS

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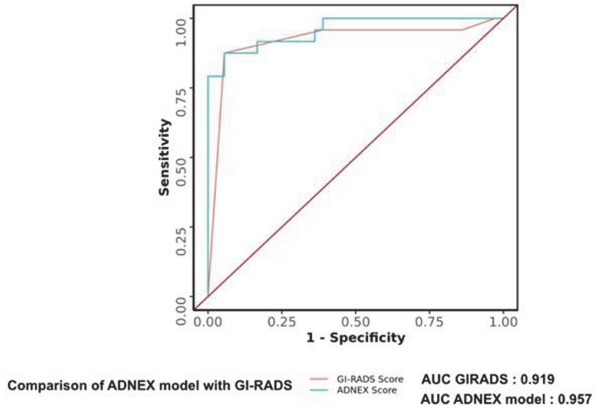
Introduction/Background Accurate preoperative diagnosis of adnexal mass helps to estimate the risk of malignancy and enables one to choose the best management approach. Prediction models have been developed to assist clinicians to triage patients to appropriate treatment pathways; and both ADNEX and GI-RADS have shown good accuracy; no study has been done comparing the two systems. The main objective was to evaluate and compare the diagnostic accuracy of Assessment of Different Neoplasias in the Adnexa (ADNEX) Model and Gynecology Imaging Reporting and Data System (GI-RADS) in preoperative assessment of adnexal masses taking histopathology as gold standard.

Methodology In this analytical study, sixty patients more than 14 years of age undergoing surgery for adnexal masses were assessed with transabdominal and transvaginal ultrasound 2–3 days prior to surgery. In cases were surgery was not possible, biopsy was performed to confirm histology. Pregnant women, women with previously established ovarian pathology were excluded. Score probability of the Assessment of Different Neoplasias in the Adnexa (ADNEX) model and Gynaecology Imaging Reporting and Data System (GI-RADS) category was calculated based on the ultrasound parameters of adnexal mass.

Results For ADNEX model sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and accuracy was 87.50%, 91.7%, 87.50%, 91.7% and 90.0% respectively. The diagnostic performance of GI-RADS category in terms of sensitivity, specificity, PPV, NPV and accuracy was 95.8%, 61.1%, 62.2%, 95.7% and 75.0% respectively. Overall the diagnostic performance of ADNEX model was better compared to GI-RADS in terms of specificity and positive predictive value with significant difference ($p<0.05$). The Area under curve (AUC) was 0.957 and 0.919 for ADNEX and GIRADS respectively ($p=0.252$).



Abstract 2022-RA-695-ESGO Figure 1

Conclusion To conclude, both ADNEX and GI-RADS system had satisfactory diagnostic performances and high negative predictive values. However, the ADNEX model showed better specificity and positive predictive value compared to GI-RADS.

2022-RA-727-ESGO PERFORMANCE OF THE IOTA ADNEX MODEL IN DIFFERENTIATING BETWEEN BENIGN AND MALIGNANT ADNEXAL LESIONS IN A PORTUGUESE POPULATION

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Introduction/Background The Assessment of Different NEoplasias in the adneXa (ADNEX) risk model was developed by clinicians and statisticians from the International Ovarian Tumor Analysis (IOTA) group to assist the diagnosis of ovarian cancer in patients who have at least one persistent adnexal tumor and are considered to require surgery. This study aimed to evaluate the diagnostic accuracy of the ADNEX model in 3 Portuguese tertiary referral centers.

Methodology The study was conducted between January 2016 and December 2020 and included consecutive non-pregnant ≥18-year-old patients with adnexal masses diagnosed at our units and submitted to surgery within 6 months after the ultrasound diagnosis. All scans were performed by IOTA-certified sonologists. The lesions were prospectively classified using the ADNEX model malignancy risk threshold set at ≥ 10%. By using the histological classification as the main outcome measure, the ADNEX sensitivity, specificity and accuracy were determined for malignant adnexa pathology and its subtypes.

Results This multicenter analysis involved 449 patients – 345 with benign and 104 with malignant lesions (35 borderline ovarian tumors [BOT], 25 stage I, 37 stage II – IV primary ovarian cancer and 7 secondary metastatic cancer to the ovary). Sensitivity, specificity and accuracy of the ADNEX model (with known CA-125 level in all cases) are shown in the accompanying table for global adnexal malignancy and specific subtypes. Regarding the frequent misclassified lesions, cystadenoma and cystadenofibroma were the most common histological entities misinterpreted as BOT (39/56), while 5/10 misinterpreted BOTs were considered invasive malignancies and another 5/10 benign lesions. Only 2/8 metastatic lesions were correctly classified.

Abstract 2022-RA-727-ESGO Table 1 Performance of the IOTA ADNEX model in a Portuguese population

ADNEX measure of validity	All malignancies	BOT	Stage I	Stage II – IV	Metastases
Sensitivity,% (95%CI)	94.2 (87.9 – 97.9)	65.7 (47.8 – 80.9)	32.0 (14.9 – 53.5)	89.2 (74.6 – 97.0)	28.6 (3.7 – 71.0)
Specificity,% (95%CI)	77.4 (72.6 – 81.7)	86.4 (82.8 – 89.5)	95.3 (92.8 – 97.1)	93.7 (90.9 – 95.8)	98.6 (97.1 – 99.5)
Accuracy,% (95% CI)	81.3 (77.4 – 84.8)	84.8 (81.2 – 88.0)	91.8 (88.9 – 94.1)	93.3 (90.6 – 95.5)	97.6 (95.7 – 98.8)

Conclusion According to our data, the ADNEX performance in the Portuguese population is similar to that in previously studied populations. It discriminates well between benign and malignant tumors and offers fair to good discrimination between four subtypes of ovarian malignancy.

2022-RA-752-ESGO THE EFFICACY OF HPV TEST FOR CERVICAL CANCER SCREENING

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Introduction/Background About 3,218 new cervical cancer cases are diagnosed annually (estimations for 2020) and the third most common female cancer in women aged 15 to 44 years in Korea. For more than a half century, cervical cytology testing has been the foundation for screening for cervical cancer and the burden of this disease. Cervical cancer is now recognized to be caused by persistent infection of HPV which develop primarily as precancerous lesions and then progress to invasive cancer.

Methodology The patients were selected in Korean HPV Cohort study and followed-up at every 6-month intervals. Only patients who had been tissue biopsy were included this study. We evaluated the results of cytology, HPV DNA test, and pathologic result of the included patients were compared with each other to check up efficacy of diagnosis between cytology and HPV DNA testing. This abstract was preliminary result.

Results The patients were selected in Korean HPV Cohort study and followed-up at every 6-month intervals. Only patients who had been tissue biopsy were included this study. We evaluated the results of cytology, HPV DNA test, and pathologic result of the included patients were compared with each other to check up efficacy of diagnosis between cytology and HPV DNA testing. This abstract was preliminary result.

Conclusion The use of HPV testing improved sensitivity better than liquid-based cytology with or without colposcopy-based biopsy. It recommends an HPV DNA based test as the preferred method, rather than cytology, currently the most commonly used methods to detect pre-cancer lesions.

2022-RA-757-ESGO BIOIMPEDANCE SCREENING FOR CERVICAL CANCER

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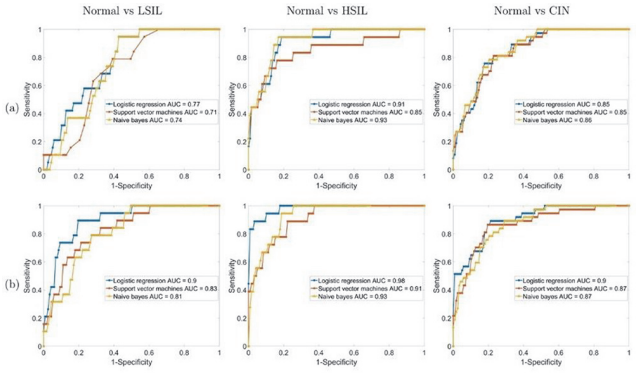
Introduction/Background The pathological changes at different severity stages of cervical intraepithelial neoplasia (CIN) can give rise to the differences in electrical properties of the cervical tissues, which lay the foundation for screening of CIN using the non-invasive and cost-effective technique of electrical bioimpedance as well as paves the way of easy availability of CIN screening, especially in developing countries and thereby the reduction of the occurrence of cervical cancer.

Methodology The complex impedance measurements collected by a multi-electrode probe from the clinically diagnosed 117 normal subjects, 18 subjects with the low-grade squamous intraepithelial lesion (LSIL), and 19 subjects with the high-grade squamous intraepithelial lesion (HSIL) have been fitted to a Cole-Cole model, which is used to characterize the electrical properties of biological tissues. The geometrical and electrical features have been extracted from the model and later exploited to classify the pathological conditions of cervical tissues using the receiver operating characteristic (ROC) curve based on three algorithms: logistic regression, support vector machine, and Naive Bayes.

Results Regardless of the algorithms being used, the area under curve (AUC) obtained from the features of complex impedance is apparently higher than that of using the real part of impedance only, and the ROC areas between normal and LSIL are much more improved when complex features are exploited, as shown in figure 2. Furthermore, due to the significant discrepancy between the electrical properties of normal and HSIL cervix, greater AUC can be observed in the separation of normal and HSIL cervix, irrespective of the features and algorithms being used.



Abstract 2022-RA-757-ESGO Figure 1

Abstract 2022-RA-757-ESGO Table 1

Pathology	Number of subjects	Age			Parity	Menopause	BMI (Kg/m²)	
		min	median	max			mean	SD
Normal	117	32	47	71	98	38	24.4	4.0
LSIL	19	29	53	62	17	12	23.5	2.7
HSIL	18	18	37	71	10	6	24.3	4.3
Total	154	18	48	71	125	56	24.3	3.9

Conclusion Compared with the utilization of only the real part of impedance measurements, our results present superior performance when using the combination of geometrical and electrical features from complex impedance in improving the effectiveness of classification during the screening of CIN according to the ROC analysis.