



Utility of D-dimer, NLR, CA-125 in predicting the risk of malignancy in adnexal masses

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Introduction

- ❑ Ovarian cancer is the fifth leading cause of cancer deaths in women worldwide, it is detected in the advanced stage, due to non-specific symptoms, diagnostic challenges, and late referral, resulting in poor survival outcome
- ❑ As no single biomarker is highly accurate, there is a need for a composite biomarker or hematological panel to predict malignancy risk in adnexal masses

Women aged above 18 years
with adnexal mass
Sample size: 95

- History, physical examination, ultrasound of abdomen and pelvis – benign, malignant, inconclusive (simple rule of 10)
- serum D-dimer, CA-125, Neutrophil-to lymphocyte ratio (NLR) were assessed

Final histopathology from
Surgical intervention (major
and minor) were correlated
with serological and
haematological parameters

- Major- laparotomy/ laparoscopy based on clinical discretion and probable diagnosis
- Minor – if a suspected malignant case is found inoperable- FNAC/ Trucut/ Ascitic / pleural fluid cytology done to obtain a tissue diagnosis

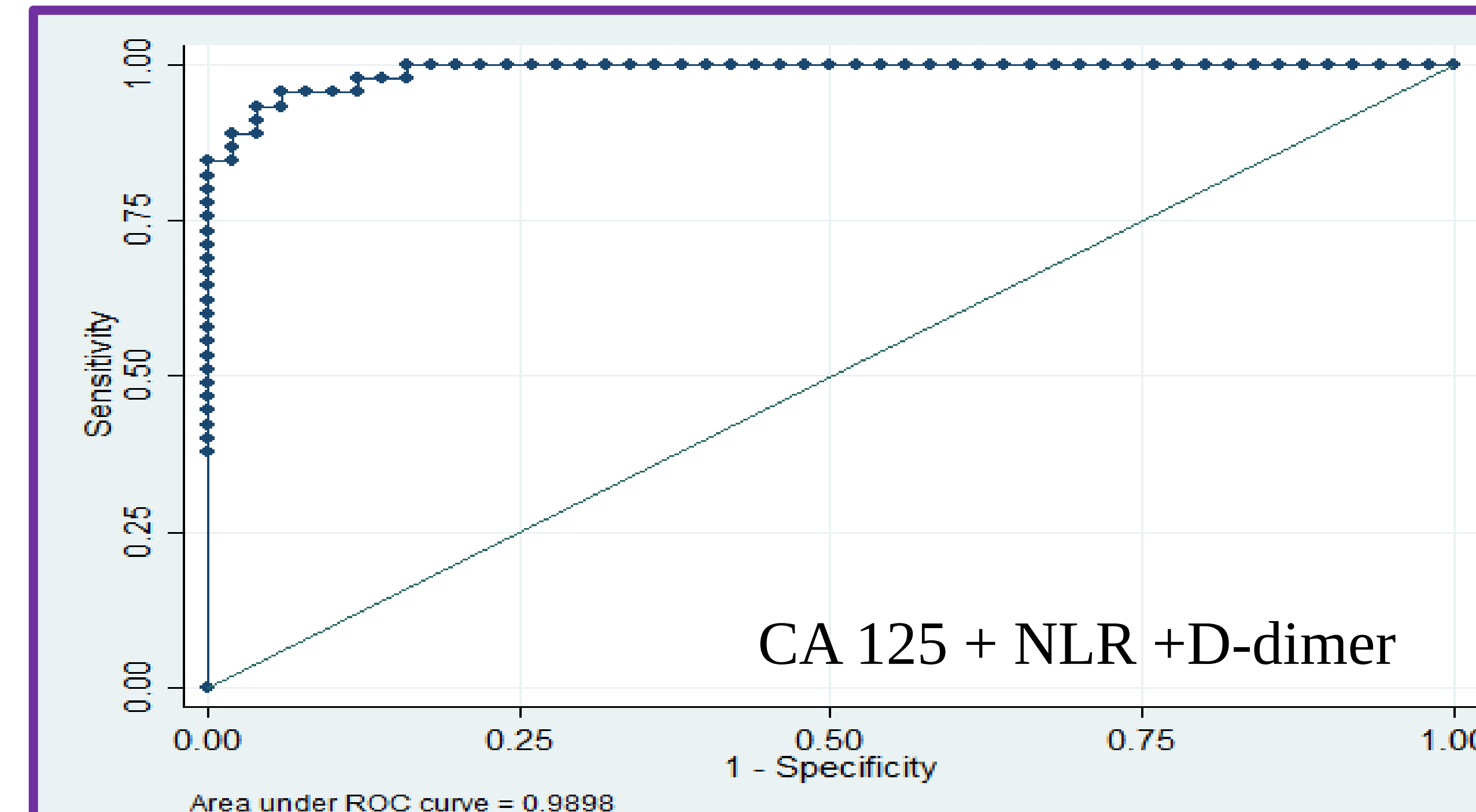
Objective: Diagnostic accuracy of a composite panel comprising of serum D-dimer, Neutrophil-to-Lymphocyte ratio (NLR) and CA 125 in predicting the risk of malignancy in women with adnexal masses

Study design : Cross-sectional study

Results

- ❑ At final histopathology, 45 women were identified to have malignant tumors, with 50 being non- malignant (benign-46, borderline-4). The mean age of study population, malignant and non malignant being 46.97±13.18, 53±10.08 and 41.56±13.37 years respectively.
- ❑ The median CA 125, NLR and D-dimer for malignant population was 13.7(IQR8.8-40.7) U/mL, 1.82(IQR0.88-3.47) µg/ml and 3.62(IQR 2.49-7.22) respectively. Whereas the above values for non-malignant population were 586.2(IQR209-2080.7) U/mL, 0.30(IQR 0.17-0.53) and 2.44 (IQR 1.69-5.02) respectively.
- ❑ On plotting ROC curve to derive the pertinent cutoff value of NLR, D-dimer, CA 125 and CEA for discriminating malignant from non-malignant tumor, the values observed were 2.41, 0.54 µg/ml, 186.75 U/mL and 1.55 ng/ml with AUC being 0.65, 0.85, 0.90 and 0.62, respectively.

- ❑ ROC curve for tumour marker panel CA 125 + NLR +D-dimer for discriminating malignant from non-malignant tumor has sensitivity and specificity of 93.3% and 96% respectively with AUC being 0.98.



Conclusion

- ❑ On analysis, the CA 125, NLR, D-dimer along with CEA had good utility in discriminating malignant from non-malignant adnexal masses.
- ❑ Serum D-dimer had higher sensitivity as compared to CA 125 and NLR, with CA 125 displaying higher specificity.