Universidad de Navarra

Facultad de Ciencias

MÁSTER EN INVESTIGACIÓN BIOMÉDICA

Research Project Proposal

Academic year 2025-2026

Project Nº 26
Title: Advanced ovarian cancer: preoperative prediction of complete resectability through integration of clinical and metabolic parameters from ^{18}F-FDG PET/CT
Department/ Laboratory Clínica Universidad de Navarra, Madrid headquarters – Nuclear Medicine Department.
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Summary

Complete cytoreduction is the most important prognostic factor in advanced ovarian cancer, significantly improving overall survival. However, identifying patients who are suitable candidates for optimal debulking surgery remains a clinical challenge. This project aims to assess the utility of preoperative ^{18}F-FDG PET/CT in predicting complete resectability by integrating metabolic parameters with clinical and laboratory data.

The study will include a retrospective and/or prospective cohort of patients with histologically confirmed advanced-stage epithelial ovarian cancer treated at Clínica Universidad de Navarra. Inclusion criteria will comprise availability of a baseline ^{18}F-FDG PET/CT performed prior to cytoreductive surgery and complete clinical data. Key metabolic parameters—such as maximum standardized uptake value (SUVmax), metabolic tumor volume (MTV), and total lesion glycolysis (TLG)—will be extracted using dedicated quantitative imaging software.

Clinical variables including CA-125 levels, ECOG performance status, FIGO stage, and ascites volume will also be analyzed. The student will be involved in anonymized data collection, imaging post-processing, and statistical analysis using multivariate logistic regression, ROC curve modeling, and decision curve analysis to identify predictors of surgical outcome. In addition, machine-learning approaches may be explored to enhance predictive accuracy.

If feasible, a clinical-metabolic scoring system will be proposed to stratify patients preoperatively.

This project offers hands-on research experience at the interface of oncology, nuclear medicine, and biomedical imaging, with the potential to inform patient selection, support surgical planning, and improve personalized treatment strategies in advanced ovarian cancer.

yes	
no	X

Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?