

Can the value of the tumor biomarker CA-125 divided by the value of the tumor biomarker CEA help in the diagnosis of ovarian cancer in women with pelvic cancer?

Submission date 15/02/2024	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 16/02/2024	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 04/03/2025	Condition category Cancer	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Carbohydrate antigen 125 (CA-125) is a serum tumor marker useful in the follow-up and to detect the recurrence or even the presence of residual ovarian cancer when associated with imaging tests. However, its isolated use is limited for early diagnosis or differential diagnosis of ovarian cancer. Some studies suggest that in the presence of above-normal serum CA-125 levels in non-ovarian cancer patients, a serum CA-125/CEA ratio could confirm non-ovarian cancer. This study aims to find out whether their ratio (CA-125/CEA) can help in the differential diagnosis between ovarian cancer and other neoplasms in the lower abdomen and/or metastases.

Who can participate?

Women who have a mass in the lower part of the abdomen, or metastases in the peritoneum (a type of skin that surrounds most of the organs in the abdomen) and/or ascites (accumulation of fluid in the abdomen).

What does the study involve?

The study involves measuring two tumor biomarkers, CA-125 and CEA, and a tumor pathology exam.

What are the possible benefits and risks of participating?

This is a study with minimal risk for the participants, such as the possible breach of patient data confidentiality. Furthermore, this study does not assess oncological outcomes, but diagnoses. However, the researchers have undertaken not to disclose this data and to maintain total confidentiality. This study may not bring any immediate benefit to the research participant, but it may show possible future benefits for other patients.

Where is the study run from?

Barretos Cancer Hospital (Brazil)

When is the study starting and how long is it expected to run for?
October 2015 to September 2018

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
Jeferson Rodrigo Zanon, jeferson.zanon@hcancerjales.com.br, jrzanon@hotmail.com

Contact information

Type(s)

Public, Scientific, Principal investigator

Contact name

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Additional identifiers

Study information

Scientific Title

Can CA-125/CEA ratio be used for the differential diagnosis between ovarian and non-ovarian cancers? A diagnostic cross-sectional retrospective study

Study objectives

Is CA-125/CEA ratio a diagnostic tool for the differential diagnosis between ovarian cancer and other advanced intra-abdominal neoplasms?

Ethics approval required

Ethics approval required

Ethics approval(s)

approved 15/04/2016, Research Ethics Committee of the Pio XII Foundation - Barretos Cancer Hospital (Rua Antenor Duarte Vilela, 1331, Barretos, 14784-400, Brazil; +55 (0)17 3321 0347; cep@hcancerbarretos.com.br), ref: 54129515.8.0000.5437

Study design

Diagnostic cross-sectional retrospective study

Primary study design

Observational

Study type(s)

Diagnostic

Health condition(s) or problem(s) studied

Ovarian cancer, other intra-abdominal neoplasms

Interventions

A diagnostic cross-sectional retrospective study is performed in patients with pelvic mass, peritoneal carcinomatosis and/or ascites and initial suspicion of ovarian malignancy. All patients have serum CA-125, CEA and biopsy. CA-125/CEA cutoffs for ovarian/non-ovarian cancer are determined using ROC curves to determine the best sensitivity and specificity. Population adjustment is performed using propensity score matching (PSM).

Intervention Type

Other

Primary outcome(s)

Receiver operating characteristic (ROC) curves to determine the cut-off values for CA-125/CEA ratio in the participants, comparing ovarian cancer with non-ovarian cancer, gastrointestinal cancer, and colorectal cancer, followed by a performance characteristic test to determine sensitivity, specificity, positive predictive value, accuracy (all ovarian cancer positive cases divided by the participants), type I error, 1, and 2 (the power of the test), positive predictive value, negative predictive value, accuracy (all ovarian cancer positive cases divided by all participants), type I error, 1 minus type II error (the power of the test), positive and negative likelihood ratios with pathology findings as the gold standard (chi-squared test or Fisher's test). Measured at a single timepoint.

Key secondary outcome(s)

The same as the primary outcome measure but after propensity score matching analysis (PSM)

Completion date

23/09/2018

Eligibility

Key inclusion criteria

Patients with a pelvic mass, peritoneal carcinomatosis and/or ascites

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Upper age limit

80 years

Sex

Female

Total final enrolment

338

Key exclusion criteria

1. Previous surgery at another service
2. If the pathology results showed benign lesions
3. If the sample was insufficient for a definitive diagnosis
4. If no biopsy was performed

Date of first enrolment

21/04/2016

Date of final enrolment

20/08/2018

Locations

Countries of recruitment

Brazil

Study participating centre

Barretos Cancer Hospital

Rua Antenor Duarte Vilela, 1331

Barretos

Brazil

14784-400

Sponsor information

Organisation

Hospital de Câncer de Barretos

ROR

<https://ror.org/00f2kew86>

Funder(s)

Funder type

Other

Funder Name

Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study will be available upon request from Jeferson Rodrigo Zanon (jeferson.zanon@hcancerjales.com.br, jrzanon@hotmail.com).

The type of data that will be shared: SPSS data bank.

Dates of availability: Indefinitely

This study was approved by the local institutional review board (number 54129515.8.0000.5437), and a waiver of informed consent was granted.

The database consists of patient information with a personal identifier. This data is stored on the REDCap Platform, which is among the best data collection, management and storage platforms for research and multi-institutional studies. It complies with the American laws on the protection of patient data, the Health Insurance Portability and Accountability Act (HIPAA). In addition to secure data storage and management, research data is stored on the institution's own server.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		14/08/2024	04/03/2025	Yes	No