



Review

Limited efficacy of platinum-based adjuvant treatment on the outcome of borderline ovarian tumors



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ABSTRACT

Adjuvant treatment of borderline ovarian tumors (BOT) remains highly debatable. This article evaluates the benefits of platinum-based adjuvant treatment in patients with BOT. The PubMed and Cochrane Library databases were systematically searched for articles using the terms ((Borderline) OR (low malignant potential) AND (ovarian)) AND ((tumor) OR (cancer)) AND ((follow-up) OR (survival) OR (treatment) OR (chemotherapy) OR (adjuvant treatment)). We identified 31 articles including 4965 patients. Together, 592 patients presented non-invasive-, 244 invasive- and 77 unspecified implants. Central pathological examination was performed in 23 studies. Nine studies included more than 90% stage I patients, while 11 included only advanced stage patients. Nineteen studies reported patients undergoing complete cytoreduction, ten reported response rates and eight compared survival outcomes. All studies provided information regarding either mortality or recurrence rates. A meta-analysis of the 13 studies providing separate mortality data for both treatment groups, including 2206 women, favored surgical treatment only (OR = 7.44; 95% CI = 3.39–16.32; $p < 0.0005$) albeit with moderate heterogeneity of the studies ($I^2 = 35.0\%$) but no asymmetry (Egger's test $p = 0.44$). Regarding survival data, 4 studies reported no difference between groups. In the adjuvant setting, 4 reported worse outcome and 1 reported a nonsignificant trend to worse outcome. At present, there is no evidence to support the use of adjuvant treatment in patients with BOT.

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Introduction

Borderline ovarian tumors (BOT) were first described by Tailor in 1929, and account for 10–20% of ovarian epithelial tumors. Patients tend to be young (mean age 38 years), but the highest frequency of these tumors relative to invasive ovarian cancer occurs in the 15–29 year-old age group [1]. While the corrected survival for patients with disease confined to the ovary is 100% at 15 years [2], more than 30% of patients with ovarian serous BOT with invasive implants will develop persistent or recurrent tumor, most commonly low-grade serous carcinoma [3]. For this group of patients, some oncologists would support adjuvant treatment. However, the response of such tumors to systemic chemotherapy is sub-optimal. Here, we aim to understand the effect of platinum-based adjuvant treatment in women with BOT, compared to surgical treatment alone.

Methods

Protocol registration: The protocol was not registered

Study characteristics

Types of reports

Inclusion criteria: Peer-reviewed articles examining platinum-based chemotherapy for any variant BOT.

Exclusion criteria: We excluded reports that:

- Did not state outcomes for BOT patients separately from those of ovarian cancer patients
- Did not report the follow-up of patients who received adjuvant treatment separately from those receiving other treatments.
- Did not include an up-to-date histological diagnosis of BOT (according to Bell and Scully [4,5].

Types of participants

Inclusion criteria: Women of any age, with a histological diagnosis of primary BOT of any variant.

Exclusion criteria: Women with ovarian cancer or other malignant tumors of the ovary, and women with recurrent BOT.

Types of intervention and comparison

Articles where at least a minimum of 10 patients received adjuvant chemotherapy with platinum-based regimens, compared to at least one group of patients that did not receive any form of adjuvant treatment.

Outcome measures

Primary Outcome: disease-free survival

Secondary Outcome: response rate, overall survival.

Search strategy, identification and selection of studies

The PubMed database and Cochrane Library were searched using the search terms ((Borderline) OR (low malignant potential) AND (ovarian)) AND ((tumor) OR (cancer)) AND ((follow-up) OR (survival) OR (treatment) OR (chemotherapy) OR (adjuvant treatment)). The search was not limited to a specific time interval, and included studies written in English, German, Spanish and Portuguese.

Data collection process and data items

Each potentially relevant study was examined and the following characteristics were tabulated:

- Author, title, year of publication
- Inclusion and exclusion criteria
- Study design
- Study population
 - Total number of enrolled patients
 - Total number of patients receiving adjuvant chemotherapy, radiotherapy or combination therapy
 - Patients' ages
 - Histological subtype
 - FIGO stage
 - Presence and type of implants
 - Central pathological examination
- Surgery details
 - Type of initial surgery
 - Presence of residual disease
- Chemotherapy details
 - Regimen, dose and number of cycles
 - Used for primary or recurrent disease
- Duration of follow-up
- Outcome:
 - Events were recorded as recurrences, progression to carcinoma or death
 - When possible, patient status was recorded as: dead of disease, dead of other causes, alive with disease or alive with no evidence of disease
 - Type of response to treatment

Summary measures

Odds ratio (OR) of mortality reduction was the primary measure of treatment effect.

Planned methods of analysis

OR was either provided in the studies or imputed using the raw data included in the reports. OR and 95% confidence intervals (CI) for each side effect were calculated. The OR of mortality reduction

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