

## INPLASY

## Meta-analysis of the efficacy of hyperthermic intraperitoneal chemotherapy combined with bevacizumab in the treatment of ovarian cancer

INPLASY202360073

doi: 10.37766/inplasy2023.6.0073

Received: 25 June 2023

Published: 25 June 2023

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## ADMINISTRATIVE INFORMATION

**Support** - Jilin Province Health and Health Science and Technology Capacity Enhancement Project (2021JC064).**Review Stage at time of this submission** - Completed but not published.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202360073**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 June 2023 and was last updated on 25 June 2023.

## INTRODUCTION

**Review question / Objective** The aim of this study is to analyse the efficacy and prognosis of hyperthermic intraperitoneal chemotherapy combined with bevacizumab in the treatment of ovarian cancer.

**Rationale** Intraperitoneal thermoperfusion chemotherapy is a new chemotherapy modality for effective treatment and prevention of tumor recurrence and metastasis, combining mechanical flushing, thermotherapy and chemotherapy to achieve the purpose of removing free cancer cells and residual cancer foci in the abdominal cavity. Bevacizumab is the first FDA-approved recombinant humanized anti-VEGF monoclonal antibody that specifically binds to VEGF to curb its biological function and assists chemotherapeutic drugs to enter inside tumor tissues to enhance the effect of chemotherapy.

**Condition being studied** Patients with primary and recurrent ovarian cancer diagnosed by pathological examination.

## METHODS

**Search strategy** The search period ends in November 2022 and the pubmed search formula is as follows: (((("Carcinoma, Ovarian Epithelial"[Mesh]) OR ( (Carcinomas, Ovarian Epithelial[Title/Abstract]) OR (Epithelial Carcinoma, Ovarian[Title/Abstract]) OR (Epithelial Carcinomas, Ovarian[Title/Abstract]) OR (Ovarian Epithelial Carcinomas[Title/Abstract]) OR (Epithelial Ovarian Cancer[Title/Abstract]) OR (Ovarian Epithelial Cancer[Title/Abstract]) OR (Cancer, Ovarian Epithelial[Title/Abstract]) OR (Cancers, Ovarian Epithelial[Title/Abstract]) OR (Epithelial Cancer, Ovarian[Title/Abstract]) OR (Epithelial Cancers, Ovarian[Title/Abstract]) OR (Ovarian Epithelial Cancers[Title/

Abstract]) OR (Ovarian Cancer, Epithelial[Title/Abstract]) OR (Cancer, Epithelial Ovarian[Title/Abstract]) OR (Cancers, Epithelial Ovarian[Title/Abstract]) OR (Epithelial Ovarian Cancers[Title/Abstract]) OR (Ovarian Cancers, Epithelial[Title/Abstract]) OR (Ovarian Epithelial Carcinoma[Title/Abstract]) OR (Epithelial Ovarian Carcinoma[Title/Abstract]) OR (Carcinoma, Epithelial Ovarian[Title/Abstract]) OR (Carcinomas, Epithelial Ovarian[Title/Abstract]) OR (Epithelial Ovarian Carcinomas[Title/Abstract]) OR (Ovarian Carcinoma, Epithelial[Title/Abstract]) OR (Ovarian Carcinomas, Epithelial[Title/Abstract]) ) OR (("Ovarian Neoplasms"[Mesh]) OR ((Neoplasm, Ovarian[Title/Abstract]) OR (Ovarian Neoplasm[Title/Abstract]) OR (Ovary Neoplasms[Title/Abstract]) OR (Neoplasm, Ovary[Title/Abstract]) OR (Neoplasms, Ovary[Title/Abstract]) OR (Ovary Neoplasm[Title/Abstract]) OR (Neoplasms, Ovarian[Title/Abstract]) OR (Ovary Cancer[Title/Abstract]) OR (Cancer, Ovary[Title/Abstract]) OR (Cancers, Ovary[Title/Abstract]) OR (Ovary Cancers[Title/Abstract]) OR (Ovarian Cancer[Title/Abstract]) OR (Cancer, Ovarian[Title/Abstract]) OR (Cancers, Ovarian[Title/Abstract]) OR (Ovarian Cancers[Title/Abstract]) OR (Cancer of Ovary[Title/Abstract]) OR (Cancer of the Ovary[Title/Abstract]))) AND (("Hyperthermic Intraperitoneal Chemotherapy"[Mesh]) OR ((Chemotherapy, Hyperthermic Intraperitoneal[Title/Abstract]) OR (Intraperitoneal Chemotherapy, Hyperthermic[Title/Abstract]) OR (HIPEC[Title/Abstract]) OR (Hot Chemotherapy[Title/Abstract]) OR (Chemotherapy, Hot[Title/Abstract]) OR (Intraperitoneal Hyperthermic Chemotherapy[Title/Abstract]) OR (Chemotherapy, Intraperitoneal Hyperthermic[Title/Abstract]) OR (Hyperthermic Chemotherapy, Intraperitoneal[Title/Abstract]) OR (Intraperitoneal Hyperthermic Chemotherapies[Title/Abstract]))) AND (("Bevacizumab"[Mesh]) OR ( (Mvasi[Title/Abstract]) OR (Bevacizumab-awwb[Title/Abstract]) OR (Bevacizumab awwb[Title/Abstract]) OR (Avastin[Title/Abstract]) ))) AND (randomized controlled trial[Publication Type] OR randomized[Title/Abstract] OR placebo[Title/Abstract]).

**Participant or population** Patients with ovarian cancer who do not have important organ dysfunction such as heart, lung, liver and kidney and who are not contraindicated to use bevacizumab.

**Intervention** Intervention was intraperitoneal bevacizumab combined with hot infusion chemotherapy.

**Comparator** The test group was given intraperitoneal bevacizumab combined with thermal perfusion chemotherapy, while the control group was given thermal perfusion chemotherapy alone.

**Study designs to be included** Outcome indicators: at least one of the following was included: clinical efficiency, quality of life improvement rate, VEGF expression level, incidence of adverse effects (leukocyte, platelet and hemoglobin reduction rate; nausea and vomiting, fatigue, pain incidence).

**Eligibility criteria** Inclusion criteria: randomized controlled trials on intraperitoneal thermoperfusion chemotherapy in combination with bevacizumab for ovarian cancer, with outcome indicators to be pooled in a meta-analysis. Exclusion criteria: lack of observational indicators or incomplete reporting of observational indicator data; review, duplication of literature, animal experiments; interventions that are inconsistent with this study or accompanied by other treatment regimens in addition to this intervention; unavailability of full text or complete data.

**Information sources** Electronic Database: The Cochrane Library, Web of Science, PubMed, CBM, CNKI, VIP, WanFang.

**Main outcome(s)** Clinical efficiency, quality of life improvement rate, VEGF expression level, incidence of adverse effects (leukocyte, platelet and hemoglobin reduction rate; nausea and vomiting, fatigue, pain incidence).

**Additional outcome(s)** None.

**Data management** We use Endnote software to manage documents.

**Quality assessment / Risk of bias analysis** Evaluation using the Cochrane Collaboration Network Quality Manual.

**Strategy of data synthesis** Dichotomous variables were used as effect indicators using ratio (OR) and continuous variables using standardized mean difference (SMD) and their 95% confidence intervals (CI), and forest plots and funnel plots were drawn. Heterogeneity between studies was assessed using the X<sup>2</sup> test, and if there was no heterogeneity, i.e.,  $I^2 \leq 50\%$  and  $P \geq 0.05$ , a fixed-

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effects model was applied for analysis; if heterogeneity was significant, i.e.,  $I^2 > 50\%$  and  $P < 0.05$ , a random-effects model was selected for analysis or to find the source of heterogeneity for subgroup analysis.

**Subgroup analysis** None.

**Sensitivity analysis** Sensitivity analysis was performed by excluding the included literature one by one.

**Language restriction** No.

**Country(ies) involved** China.

**Other relevant information** None.

**Keywords** Ovarian cancer; bevacizumab; hyperthermic intraperitoneal chemotherapy; Meta-analysis.

**Contributions of each author**

Author 1 - Jing Meiling - Author 1 conducted a literature search search, data compilation and paper writing.

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Author 2 - Yu Xing - Author 2 is responsible for reviewing the final draft.

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