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[Intervention Review]

Intraperitoneal chemotherapy for the initial management of primary epithelial ovarian cancer

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ABSTRACT

Background

Ovarian cancer tends to be chemosensitive and confine itself to the surface of the peritoneal cavity for much of its natural history. These features have made it an obvious target for intraperitoneal (IP) chemotherapy. Chemotherapy for ovarian cancer is usually given as an intravenous (IV) infusion repeatedly over five to eight cycles. Intraperitoneal chemotherapy is given by infusion of the chemotherapeutic agent directly into the peritoneal cavity. There are biological reasons why this might increase the anticancer effect and reduce some systemic adverse effects in comparison to IV therapy.

Objectives

To determine if adding a component of the chemotherapy regime into the peritoneal cavity affects overall survival, progression-free survival, quality of life (QOL) and toxicity in the primary treatment of epithelial ovarian cancer.

Search methods

We searched the Gynaecological Cancer Review Group's Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL) Issue 2, 2011, MEDLINE (1951 to May 2011) and EMBASE (1974 to May 2011). We updated these searches in February 2007, August 2010, May 2011 and September 2015. In addition, we handsearched and cascade searched the major gynaecological oncology journals up to May 2011.

Selection criteria

The analysis was restricted to randomised controlled trials (RCTs) assessing women with a new diagnosis of primary epithelial ovarian cancer, of any FIGO stage, following primary cytoreductive surgery. Standard IV chemotherapy was compared with chemotherapy that included a component of IP administration.

Data collection and analysis

We extracted data on overall survival, disease-free survival, adverse events and QOL and performed meta-analyses of hazard ratios (HR) for time-to-event variables and relative risks (RR) for dichotomous outcomes using RevMan software.

Main results

Nine randomised trials studied 2119 women receiving primary treatment for ovarian cancer. We considered six trials to be of high quality. Women were less likely to die if they received an IP component to chemotherapy (eight studies, 2026 women; HR = 0.81; 95% confidence

interval (CI): 0.72 to 0.90). Intraperitoneal component chemotherapy prolonged the disease-free interval (five studies, 1311 women; HR = 0.78; 95% CI: 0.70 to 0.86). There was greater serious toxicity with regard to gastrointestinal effects, pain, fever and infection but less ototoxicity with the IP than the IV route.

Authors' conclusions

Intraperitoneal chemotherapy increases overall survival and progression-free survival from advanced ovarian cancer. The results of this meta-analysis provide the most reliable estimates of the relative survival benefits of IP over IV therapy and should be used as part of the decision making process. However, the potential for catheter related complications and toxicity needs to be considered when deciding on the most appropriate treatment for each individual woman. The optimal dose, timing and mechanism of administration cannot be addressed from this meta-analysis. This needs to be addressed in the next phase of clinical trials.

PLAIN LANGUAGE SUMMARY

Intraperitoneal chemotherapy (administered into the peritoneal cavity) for advanced ovarian cancer improves both overall and disease-free survival

Ovarian cancer commonly spreads through the peritoneal cavity and usually responds to intravenous (IV) chemotherapy. This review compared the effectiveness of IV chemotherapy to chemotherapy administered directly into the peritoneal cavity (intraperitoneal, or IP). The evidence suggests an improvement in survival if some of the chemotherapy is administered via the intraperitoneal route. The disadvantage is an increase in adverse effects principally relating to the presence of a peritoneal catheter, including pain, catheter blockage, gastrointestinal effects and infection.