

**Tumor volumetry as predictive and prognostic factor in the management of ovarian cancer.**

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**Source**

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**Abstract**

**BACKGROUND:**

The usefulness of tumor volumetry in ovarian epithelial cancer has never been intensively investigated. The aim of the present study was to determine the value of quantitative analysis of tumor volume as a predictive method for response to treatment and as a prognostic method for disease outcome.

**MATERIALS AND METHODS:**

Seventy-five women with advanced ovarian cancer who presented with measurable disease on CT scan prior to chemotherapy were retrospectively studied. The patients were treated with platinum-based chemotherapy. The median follow-up was 113.36 weeks. An independent radiologist identified and delineated tumor contours in each slice of sequential CT scans before and after therapy. Volumetry was measured with a three-dimensional approach by utilizing a digitizer and a specific algorithm on a software computed program.

**RESULTS:**

Data were analyzed according to initial and to residual tumor volumes. Patients with low initial volume of <52 cm<sup>3</sup> exhibited higher responses ( $p < 0.01$ ), while patients with medium (52-165 cm<sup>3</sup>) or high (>165 cm<sup>3</sup>) initial tumor volume had a shorter time to progression ( $p < 0.01$ ). Patients without or with low residual volume of <35 cm<sup>3</sup> were found to have a longer time to progression ( $p < 0.05$ ) and longer survival ( $p < 0.01$  and  $p < 0.05$ ). In addition, serum CA 125 levels followed precisely tumor volumetry for both initial and residual disease.

**CONCLUSION:**

Tumor volumetry in advanced ovarian cancer was found to have predictive value for response to platinum-based chemotherapy. Initial tumor volume has prognostic significance only for the time to progression, whereas residual tumor volume has for both time to progression and survival.