

*Extended Abstract*

## **The effect of weight-based chemotherapy dosing in a cohort of gynecologic oncology patients**

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**Keywords:** chemotherapy, obesity, dosage

### **Objectives**

The American Society of Clinical Oncology recommends that full weight-based doses of chemotherapy be used to treat obese patients with cancer. However, many oncologists limit the dose of chemotherapy based on ideal body weight or a maximum body surface area (BSA) of m<sup>2</sup>. The objective of our study is to determine how weight-based chemotherapy dosing affects toxicity, treatment delays, and laboratory values in a cohort of obese gynecologic cancer patients at our institution. We hypothesize that full weight-based dosing in obese patients does not increase adverse chemotherapy outcomes.

### **Methods**

We performed a retrospective review of patients at our institution with a BSA  $\geq$  m<sup>2</sup> who received weight-based chemotherapy dosing for a gynecologic malignancy beginning in January 2013 (n=27). These subjects were matched with control patients (n=27) with BSA < m<sup>2</sup> who had similar co-morbidities and prior cancer treatment. Data regarding the patients' demographic characteristics, prior chemotherapy, laboratory values, and symptoms noted at the time of clinic visit, and medical co-morbidities were collected. Lab values were evaluated through two cycles of chemotherapy in order to evaluate toxicities. Chemotherapy agents analyzed were those dosed according to BSA, including paclitaxel, gemcitabine, and liposomal doxorubicin.

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Demographic and clinical information was compared between the two groups using Fisher's exact test for categorical variables and the Wilcoxon two sample test for continuous variables.

## **Results**

The two groups were similar in age and co-morbidities, but significantly different in terms of BSA, weight, and BMI. In the obese (BSA  $\geq$  m<sup>2</sup>) group, 3.7% of patients received a dose of chemotherapy 30% higher than they would have received with a BSA cap of m<sup>2</sup>, while 18.5% of patients received a 15% higher dose, and 44.4% of patients received a 10% higher dose. When comparing pre- and post-treatment laboratory values between obese and non-obese patients, there were no differences in overall WBC, ANC, platelets or creatinine (p>0.3). There was also no difference between the obese and non-obese groups with regards to treatment delays (p=NS), transfusions (p=NS), symptoms noted at follow up visit (p=NS) and hospital admissions (p=NS).

## **Conclusions**

At our institution, gynecologic cancer patients treated with full-dose chemotherapy using actual BSA had no increase in toxicities, treatment delays or excessive laboratory abnormalities when compared to patients with BSA < m<sup>2</sup>. We plan to increase our cohort to ensure these observations are valid. Based on our initial analysis, consideration should be given to using weight-based dosing in obese patients receiving chemotherapy for gynecologic malignancies. Further investigation is required to determine whether weight-based chemotherapy dosing leads to increased overall survival and progression-free survival in obese gynecologic cancer patients.

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