

An Overview of Weight Changes Before and After Chemotherapy for Ovarian Cancer at Dr. Soetomo Hospital Surabaya in the Period 2021-2023

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ABSTRACT

Objectives: This study aims to determine body weight changes in ovarian cancer patients before and after receiving first-line chemotherapy treatment. **Materials and Methods:** This research is a retrospective descriptive study. The study population consisted of ovarian cancer patients who received chemotherapy at Dr. Soetomo General Academic Hospital, Surabaya. The sample included all ovarian cancer patients who received chemotherapy during the period 2021-2023. Data collected included the type of chemotherapy, weight, ovarian cancer stage, duration of chemotherapy, age, and comorbidities. The chemotherapy regimen used was paclitaxel 175 mg/m² and carboplatin AUC5. **Results:** A total of 206 ovarian cancer patients were analyzed. Most patients who received neoadjuvant chemotherapy experienced weight gain. Specifically, patients who received neoadjuvant chemotherapy mostly experienced weight gain. Weight loss was more common in patients receiving 3 cycles of adjuvant chemotherapy, while weight gain was frequent in those undergoing 4–6 cycles. Of patients who received 6 cycles of adjuvant chemotherapy, 64.52% experienced weight gain, 9.68% maintained their weight, and 25.81% experienced weight loss. The majority of ovarian cancer patients who received chemotherapy were in stage III. The predominant age group was 50-59 years. Additionally, age-specific analysis showed that the highest percentage of weight gain occurred in the 40-49 age group, while the highest percentage of weight loss occurred in the same age group. **Conclusion:** Significant changes in body weight among ovarian cancer patients undergoing chemotherapy at Dr. Soetomo Hospital, Surabaya during 2021-2023. Monitoring and managing weight changes is crucial for improving treatment outcomes and quality of life.

Keywords: ovarian cancer; chemotherapy; weight changes; paclitaxel; carboplatin.

INTRODUCTION

In Indonesia, ovarian cancer is a major health problem in women. Ovarian cancer has long been known as the “Silent Killer” because early-stage symptoms are difficult to detect. Most ovarian cancer patients experience symptoms and come to the doctor when it is already at an advanced stage. In 2020, ovarian cancer ranked third as the most common gynecologic cancer after cervical cancer and uterine cancer. Due to the difficulties in diagnosing ovarian cancer at an early stage, ovarian cancer patients are generally diagnosed at stages III and IV, which can lead to low treatment outcomes.[1]

Cancer patients often lose their appetites and have trouble eating, which in turn reduces the intake of nutrients and thus leads to weight loss. Cancers interfere with metabolic processes, increase energy expenditure, and cause metabolic dysfunction, especially in the advanced stage.

This dysfunction manifests itself as weight loss, skeletal muscle atrophy, and reduction in adipose tissue—altogether called cancer-associated cachexia (CAC), a major cause of morbidity and mortality. In addition, tumor cells require more energy in order to maintain growth and thereby further increase weight loss. Some cancer treatments, like chemotherapy or hormone therapy, can cause changes in weight due to water retention or side effects related to nausea, appetite, or the sense of taste.[2,3]

According to the results of several studies conducted previously, there are differences regarding changes in body weight that occur in cancer patients who receive chemotherapy treatment. However, there is no research that compares the weight of patients before and after chemotherapy. Based on the above, it is necessary to conduct a study to find out how the change in body weight of ovarian cancer patients before and after receiving chemotherapy treatment

at RSUD Dr. Soetomo Surabaya. This study aims to determine the overview of changes in body weight in ovarian cancer patients before and after receiving cancer treatment using first-line chemotherapy treatment at RSUD Dr. Soetomo Surabaya for the period 2021-2023.

MATERIALS AND METHODS

This research is a descriptive retrospective study using the total sampling method. The research instrument used was the medical records of ovarian cancer patients in Merak and Merpati wards of Obstetrics and Gynecology Inpatient Installation Dr. Soetomo General Academic Hospital, Surabaya, from January 1, 2021 to December 31, 2023. The variables of this study consisted of chemotherapy, weight changes, ovarian cancer stage, duration of chemotherapy, age, and patient's comorbidities. The inclusion criteria of this study were patients ovarian cancer patients who received first-line chemotherapy treatment (paclitaxel 175 mg/m² and carboplatin AUC5) and underwent the first series of chemotherapy. The exclusion criteria for this study were ovarian cancer patients who experienced recurrence and patients who experienced ascites so as to affect changes in body weight. The total number of ovarian cancer patients who received chemotherapy at RSUD Dr. Soetomo Surabaya from January 2021 to December 2023 was 393 patients, but only 165 patients met the inclusion criteria.

RESULTS AND DISCUSSION

This study obtained patients who underwent neoadjuvant (NAC) and adjuvant chemotherapy. A total of 13 ovarian cancer patients who did not have ascites underwent NAC. The other 136 ovarian cancer patients who did not have ascites underwent adjuvant chemotherapy. This study only took data from patients who received 3 cycles of NAC. Among the total NAC patients, 8 patients (61.54%) experienced weight gain and the remaining 5 patients (38.46%) experienced weight loss. Most patients experienced weight gain with a total of 8 patients (61.54%). Weight changes, specifically weight gain are common in patients undergoing NAC who are taking taxane class drugs. In addition, patients will lose 7% Fat-Free Mass (FFM), gain an average of 12% Fat Mass (FM), and have a reduced Body Mass Index (BMI) of only 2%.

Modifications in body composition consisting of increased fat and FFM may result from the administration of NAC to patients. Weight loss results due to several related factors, such as poor patient tolerance to treatment, decreased muscle function, and/or hormonal changes.[4,5]

Other results were obtained in ovarian cancer patients undergoing 3 cycles of adjuvant chemotherapy. Of the 43 total patients, weight loss was found to be the most frequent with 18 patients (41.86%). However, there was no significant difference in the number of patients between patients who experienced weight gain and loss, with the number of patients who experienced a decrease of 16 patients (37.21%). There were significant weight changes in 4 patients who experienced weight loss and 3 patients who experienced weight gain by ≥ 10 kg. The other nine patients had no weight change. The chemotherapy given may have side effects on energy metabolism in patients both directly and indirectly, potentially reducing food intake in patients. Direct effects can impact intracellular protein synthesis, as well as the metabolism of carbohydrates and lipids. Indirect effects are caused by nausea, vomiting, dysgeusia, or mucositis. These may affect the amount of food intake and nutrients that enter the patient's body, even though the nutritional needs during surgery and chemotherapy in patients are increasing.[6,7] In addition, weight loss can be caused by the difficult economic conditions of patients, making it difficult for patients to afford foods with high nutrition. Therefore, the nutritional diet received by patients during the chemotherapy cycle is less than optimal.

The number of patients receiving 6 cycles of adjuvant chemotherapy was more than the group of patients undergoing NAC and 3 cycles of adjuvant chemotherapy. A total of 93 patients received 6 cycles of adjuvant chemotherapy, with 60 patients (64.52%) experienced weight gain. A total of 24 patients (25.81%) experienced weight loss and the other 9 patients (9.68%) had no weight change. Among the 60 patients who experienced weight gain, 6 patients had significant weight gain of ≥ 10 kg. Furthermore, among the 24 patients who experienced weight loss, only 3 patients experienced a significant weight loss of ≥ 10 kg.

TABLE 1: Weight change in ovarian cancer patients undergoing NAC.

Weight changes	n	%
Increase	8	61,54%
Maintain	0	0,00%
Decrease	5	38,46%
Total	13	100,00%

TABLE 2: Weight change in ovarian cancer patients undergoing 3 cycles of adjuvant chemotherapy.

Weight changes	n	%
Increase	16	37,21%
Maintain	9	20,93%
Decrease	18	41,86%
Total	43	100,00%

TABLE 3: Weight change in ovarian cancer patients undergoing 6 cycles of adjuvant chemotherapy.

Weight changes	n	%
Increase	60	64,52%
Maintain	9	9,68%
Decrease	24	25,81%
Total	93	100,00%

CONCLUSION

This study demonstrated different weight change patterns in ovarian cancer patients treated with chemotherapy. The majority of patients (61.54%) with 3 cycles of neoadjuvant chemotherapy showed weight gain, probably because of metabolic changes that increased fat mass. On the other hand, among the patients receiving 3 cycles of adjuvant chemotherapy, weight loss (41.86%) was slightly higher compared to weight gain (37.21%), as this was influenced by treatment side effects and nutritional challenges. Among those receiving 6 cycles of adjuvant chemotherapy, weight gain was predominant, at 64.52%. These findings emphasize the importance of tailored nutritional support in managing weight changes and improving outcomes during chemotherapy.

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