

## **THE INCREASED INCIDENCE OF NAUSEA AND VOMITING DUE TO ANXIETY IN PACLITAXEL CARBOPLATIN CHEMOTHERAPY IN A 48 YEARS OLD FEMALE PATIENT WITH CERVICAL CANCER: A Case Report**

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### **ABSTRACT**

Nausea and vomiting was the frequently side effects in chemotherapy. Uncontrolled nausea and vomiting can cause weakened body condition, reduced appetite and drinking, dehydration, electrolyte disturbances, reduced nutritional status so the patient refused to undergo further chemotherapy. Anxiety is one of the factors that increase the risk of nausea and vomiting. We reported the case of the woman 48 years old, height 150 cm, weight 51 kg, occupation housewife, diagnosed non-keratinizing squamous cell carcinoma cervical cancer stage-IIB and received paclitaxel carboplatin for three cycles of chemotherapy. She experienced anxiety, acute nausea vomiting on the third cycle of chemotherapy and delayed nausea and vomiting of the three cycles of chemotherapy.

**Key words: cervical cancer, chemotherapy, nausea, vomiting, anxiety**

### **INTRUDUCTION**

Cervical cancer is a cancer that occurs in the area of the cervix.<sup>1</sup> Chemotherapy is the treatment of cervical cancer stage IIB to stage IIIB using drugs either in the singular or combination.

Paclitaxel carboplatin is one of the drugs used for chemotherapy of cervical cancer.<sup>2</sup> Paclitaxel carboplatin resulted in a clinical response more than 80% with a lower level of toxicity.<sup>3</sup>

In addition to providing a therapeutic effect, paclitaxel carboplatin can also cause various side effects. Nausea and vomiting are common side effects of chemotherapy.<sup>4</sup> Uncontrolled nausea and vomiting can cause weakened body condition, reduced appetite and drinking, dehydration, electrolyte disturbances, reduced nutritional status so the patient refused to undergo further chemotherapy.<sup>5</sup> Of the few studies, anxiety is one of the factors can increase the risk of nausea and vomiting.

### **THE CASE**

A woman 48 years old, height 150 cm, weight of

51 kg, occupation housewife referred to polyclinic obstetrics and gynecology Sanglah Central Public Hospital Denpasar with complaints of abnormal bleeding, pain, weakness and lethargy.

Cervical biopsy results showed that patients diagnosed with cervical cancer non-keratinizing squamous cell carcinoma stage IIB. Based on hematological examination and judgment of physicians, patients received chemotherapy with paclitaxel carboplatin.

The first day, the patient was given combination of antiemetic such as dexamethasone 20 mg intravenously (iv), diphenhydramine 50 mg iv, ranitidine 50 mg iv were administered 30 minutes before paclitaxel 240 mg iv. After 24 hours of paclitaxel administered, patient rehydrated with dextrose 5% 500 cc for 5 hours. The second day, the patient was given combination of antiemetic: ondansetron 8 mg iv, vitamin B6 200 mg IV 30 were administered 30 minutes before carboplatin 600 mg iv. After 3 hours of paclitaxel administered, patient rehydrated with dextrose 5% 500 cc for 5 hours. On the third day, the patient is given medication to take home such as ondansetron 4 mg orally every 8 hours and ferrous sulfate 200 mg orally every 12 hours for 5 days. This therapy was given for each cycle of the chemotherapy until the third cycle of chemotherapy.

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Conditions and complaints of the patient monitored from the first cycle of chemotherapy until the third cycle.

In the first cycle of chemotherapy in hospital, no experienced of nausea and vomiting and only complained of pain in the lower abdomen. However, after arriving at her home, she experienced delayed nausea and vomiting for 4 days.

Three weeks after of the first cycle chemotherapy, the patient came to undergo a second cycle of chemotherapy and no experienced of nausea and vomiting. Same as the first cycle, she experienced delayed nausea and vomiting when she went home from the hospital for 3 days.

She came back to the hospital for followed the third cycle chemotherapy. In the third cycle of chemotherapy, she started uneasy, anxiety and depression during hospitalization. She experienced acute nausea and vomiting that causes a decreased in appetite, changes in eating habits. She also experienced delayed nausea and vomiting while at home for 4 days.

## DISCUSSION (478 words)

Nausea and vomiting is a common side effect in chemotherapy. Chemotherapy induced nausea and vomiting (CINV) classified into acute, delayed, anticipatory, breakthrough. Acute CINV occurs less than 24 hours after chemotherapy. Delayed CINV is defined as nausea and vomiting occurring 24 hours or more after chemotherapy. Anticipatory CINV is defined as nausea and vomiting occurring before the administration of chemotherapy. Breakthrough CINV is nausea and vomiting that occurs despite antiemetic therapy and requires rescue medication.<sup>6,7</sup>

In this case the patient no experienced nausea and vomiting during chemotherapy in a hospital in cycles 1 and 2. The combination of antiemetics such as diphenhydramine, ranitidine, dexamethasone, ondansetron, vitamin B6 given before chemotherapy to control the incidence of nausea and vomiting.<sup>8,9,10</sup> However, patient's experience delayed nausea and vomiting when at home and can be treated by oral ondansetron taken home. Ondansetron is an antiemetic class 5HT<sub>3</sub> receptor antagonist that is effective in treating nausea and vomiting.<sup>12</sup> The mechanism of action of ondansetron is selectively inhibit 5-hydroxytryptamine (5HT<sub>3</sub>) receptor in the CTZ (Chemoreceptor Trigger Zone) and in the gastrointestinal tract.

In the third cycle of chemotherapy, although patients given the combination antiemetic before chemotherapy, the patients continue to experienced acute nausea and vomiting. Several factors are known to increase the incidence of nausea and vomiting were age, anxiety, history of motion sickness, morning sickness history, consume less alcohol.<sup>11,12,13</sup>

Anxiety is one of the factors that are important to trigger nausea and vomiting. This can be explained by the following scheme:

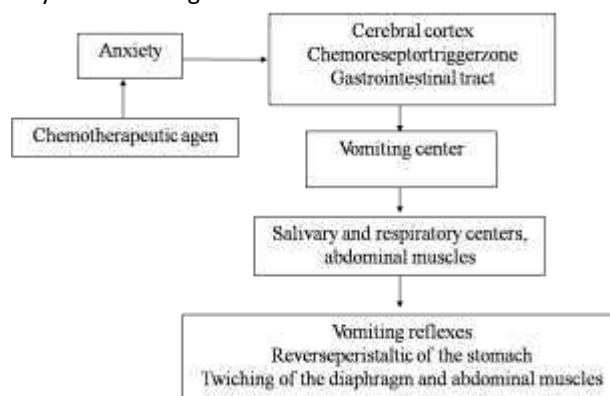


Figure 1

The cascade of anxiety induced nausea and vomiting<sup>11</sup>

Emotional distress symptom and multiple receptors in the cerebral cortex responsible the occurrence of nausea and vomiting (figure 1). Signals from the cerebral cortex then relayed to the vomiting center (nucleus tractus solitaries) and stimulate salivary and respiratory centers, reverseperistaltic of the stomach, twiching of the diaphragm and abdominal muscles so that the occurrence of vomiting.<sup>14,15</sup>

In this case, the patient experience anxiety when will undergoing the third cycle of chemotherapy thereby increasing the incidence of nausea and vomiting. Some triggers of anxiety in these patients such as the severity of disease experienced, the influence of other patients who experience nausea and vomiting, uncontrolled pain, chemotherapy agents. Several studies have reported that the severity of disease experienced, confidence in adapting from environmental influences, uncontrolled pain, chemotherapy agents is the trigger anxiety during chemotherapy.<sup>17,18</sup> Therefore, further anxiety treatments are needed to reduce the risk of nausea and vomiting during chemotherapy.

After the third cycle of chemotherapy in the hospital completed, the patient experienced delayed nausea and vomiting at her home. Ondansetron was

given at home and taken for 5 days to treat nausea and vomiting delayed.

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