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# Acute pancreatitis induced by paclitaxel and carboplatin therapy in an ovarian cancer patient

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**Summary**

A 46-year-old female was treated with a regimen of paclitaxel and carboplatin (TC therapy) as adjuvant chemotherapy for Stage IC ovarian adenocarcinoma. There was no severe toxicity except for grade 3 neutropenia during the first four cycles of TC therapy. However, she developed acute pancreatitis at 14 days after fifth cycle. TC therapy is commonly associated with adverse effects such as myelosuppression, hypersensitivity, alopecia, and peripheral neuropathy, but acute pancreatitis has rarely been reported. Ovarian cancer patients often present with nausea and abdominal pain, which are the same symptoms of pancreatitis. It is very important to keep in mind that acute pancreatitis may be concealed in these common symptoms of ovarian cancer during and after TC therapy. Because acute pancreatitis is fatal complication and quitting the drug usually leads to complete cure. The authors report an uncommon case in which TC therapy may have caused acute pancreatitis.

*Key words:* Paclitaxel; Carboplatin; Acute pancreatitis; Ovarian cancer.

## Introduction

Ovarian cancer is known to have the worst prognosis among gynecological malignancies [1]. Since there is a lack of characteristic symptoms in the early stage and effective screening methods have not been established, about 60% of patients with ovarian cancer are diagnosed in the advanced stage [1]. Following cytoreductive surgery, treatment with a regimen of paclitaxel and carboplatin (TC therapy) has been recommended for initial chemotherapy [2]. TC therapy has characteristic adverse effect profiles. TC therapy is commonly associated with adverse effects such as myelosuppression, hypersensitivity, alopecia, and peripheral neuropathy. Acute pancreatitis is known to be one of the rare adverse effects of chemotherapeutic agents [3, 4]. However, acute pancreatitis associated with TC therapy has rarely been reported. The authors report here a case in which TC therapy may have caused acute pancreatitis.

## Case Report

A 46-year-old female was treated with TC therapy (paclitaxel: 175 mg/m$^2$ over three hours and carboplatin: AUC 6 over one hour) as adjuvant chemotherapy for Stage IC ovarian adenocarcinoma. TC therapy was given every three weeks. She was treated with dexamethasone, ranitidine, palonosetron, aprepitant, and chlorpheniramine as premedication. There was no severe toxicity except for grade 3 neutropenia during the first four cycles of TC therapy. However, 14 days after fifth cycle, she began to complain of nausea, vomiting, and abdominal pain radiating to the back. Abdominal tenderness and distension were found on palpation, but abdominal rebound tenderness was inapparent. Laboratory studies showed the following (normal laboratory ranges are shown in parentheses), amylase 609 U/L (18-53 U/L) and lactate dehydrogenase 241 U/L (106-211 U/L). Serum lipase level was not measured at this time. A computed tomography (CT) scan showed a large, edematous pancreas and peripancreatic inflammatory changes suggestive of acute pancreatitis (Figure 1A). No gallstones or biliary duct dilatation was noted. The authors made the diagnosis of pancreatitis based on clinical, laboratory, and radiographic studies. The patient was admitted to the hospital, and treated with intravenous fluids, H2 blocker, nafamostat, and analgesic agents. On the third day, her symptoms almost resolved, but amylase and lipase level still elevated: amylase 208 U/L and lipase 225 U/L (17-57 U/L). Six days later, amylase and lipase levels normalized and she had no symptoms. On the eighth day, follow-up CT scan was done and showed the development of a pseudocyst (Figure 1B).

She completely quitted drinking and smoking several months ago and CT scan revealed no gallstones or biliary duct dilatation. Therefore, it was strongly suggested that the pancreatitis was caused by TC therapy. The sixth cycle of TC therapy was discontinued because chemotherapeutic agents are the possible cause of pancreatitis and the patient refused further treatment.

## Discussion

TC therapy has been recommended for initial chemotherapy for ovarian cancer [2]. Characteristic adverse effects associated with TC therapy include myelosuppression, hypersensitivity, alopecia, and peripheral neuropathy. However, there are only a few reports available regarding acute pancreatitis associated with this regimen.

Acute pancreatitis is a medical emergency characterized by abdominal pain, nausea, and vomiting, accompanied with elevated serum amylase. Gallstones and alcohol are respon-

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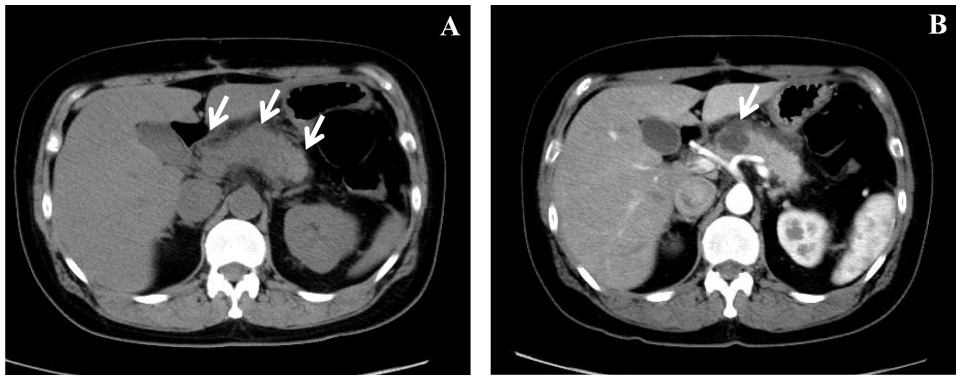


Figure 1. — (A) Transverse computed tomography (CT) scan reveals a large, edematous pancreas, and peripancreatic inflammatory changes (white arrows). (B) Transverse CT scan reveals a pseudocyst in pancreas (white arrow).

sible for over 80% of cases of this disease, on the other hand, drug-induced pancreatitis is very rare and overall incidence ranges from 0.1 to 2% [3, 4]. L-Asparaginase is commonly associated with acute pancreatitis and the incidence is reported to be between 2% and 18% [4]. Corticosteroid and ondansetron may be possible cause of pancreatitis [5, 6]. With regards to chemotherapeutic agents, cisplatin-associated acute pancreatitis is documented in the literature [4]. Kumar *et al*. have previously reported paclitaxel-associated acute pancreatitis [7]. Singh *et al*. reported docetaxel and carboplatin are also possible causes of drug-induced pancreatitis [8]. Furthermore, Garg *et al.* reported ifosfamide-related pancreatitis [9]. Although there are several reports regarding pancreatitis related to chemotherapy, pancreatitis is rare complication with most chemotherapeutic agents. With regards to TC therapy for ovarian cancer, there has been almost no report about pancreatitis associated with this regimen.

The present patient had no known risk factors (no alcohol and no smoking) and CT scan revealed no gallstones or biliary duct dilatation. Therefore, TC therapy was the likely cause of pancreatitis in this patient. Her medications associated with TC therapy were dexamethasone, ranitidine, palonosetron, aprepitant, chlorpheniramine, paclitaxel, and carboplatin. The identification of a causative agent is difficult, because repeated exposure may lead to acute pancreatitis again. Pancreatitis is severe and fatal complication, therefore it is not recommended to continue the same therapy.

This case reminds us that pancreatitis could be occur during TC therapy, which is the most common chemotherapy in the treatment of ovarian cancer. Especially, ovarian cancer patient often present with nausea and abdominal pain, which are the same symptoms of pancreatitis. Gynecologist should keep in mind that this fatal adverse effect may be concealed in these common symptoms of ovarian cancer.

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