

## CJON WRITING MENTORSHIP PROGRAM PAPER

# Carboplatin Hypersensitivity Reactions

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Carboplatin is used widely to treat cancers such as lung, breast, and ovarian. Hypersensitivity reactions (HSRs) to carboplatin can occur, often after numerous doses. The reactions can range from mild to life threatening. Oncology nurses witness the reactions and are instrumental in providing interventions to assist patients. Symptoms include flushing, rashes, itchy palms, nausea, difficulty breathing, back pain, hypotension, and tachycardia. Interventions include support of patients with oxygen and IV hydration along with administration of certain medications to diffuse HSRs. Predictive measures may include skin testing on patients who have received more than seven total doses of carboplatin. Desensitization protocols may be useful for patients with positive skin tests. Ultimately, with the potential for life-threatening reactions, patients and physicians need to consider the risk-to-benefit ratio of using the drug.

**C**ase study: B.A. is a 62-year-old female who had a total abdominal hysterectomy and bilateral salpingo oophorectomy for stage III epithelial ovarian cancer two years ago. She received six cycles of paclitaxel and carboplatin. After her second-look exploratory surgery, all of her biopsies were negative. Now she has ascites, which, upon diagnostic paracentesis, shows recurrent ovarian cancer. She has received two cycles of paclitaxel and carboplatin and is due for her third dose (ninth total dose) of carboplatin. She received IV dexamethasone 20 mg, famotidine 20 mg, diphenhydramine 50 mg, and granisetron 1 mg as premedications prior to infusion of paclitaxel. After 10 minutes of the carboplatin infusion, she states, "I don't feel good." She reports itchy palms, tightness in her chest, difficulty catching her breath, back pain, and sudden nausea. Assessment of vital signs shows a heart rate of 115, blood pressure of 108/50, and oxygen saturation of 86% on room air. After the carboplatin is stopped, interventions include IV dexamethasone 20 mg and diphenhydramine 50 mg, administration of oxygen at 2 L by nasal cannula, and an IV bolus of 500 cc of normal saline. She recovers after one hour, with normalization of vital signs and oxygen levels. Her physician decides to discontinue carboplatin and continue with single-agent paclitaxel.

Nurses working with patients receiving carboplatin may not realize the potential for hypersensitivity reactions (HSRs). This article focuses on a review of carboplatin HSRs, including signs and symptoms and management strategies. Information about how to predict and prevent reactions will be discussed. Nurses can become instrumental in assessing for and implementing safety guidelines in their practice settings to address carboplatin HSRs.

## Review of Hypersensitivity Reactions

Nurses often administer chemotherapy drugs that have potential for HSRs. Drugs such as paclitaxel, rituximab, and bleomycin sulfate are known for their risks of HSRs. Newer agents such

### At a Glance

- ◆ Carboplatin hypersensitivity reactions (HSRs) often occur after numerous doses.
- ◆ HSRs often are unexpected and can be mild to life threatening.
- ◆ Ways to predict and prevent HSRs include skin testing, premedication, and dilution regimens.

as cetuximab and bevacizumab also have the potential. With this known hypersensitivity potential, nurses are aware of, plan for, and take action to decrease such risk. Action includes administering premedications such as diphenhydramine and dexamethasone, slowing initial rates of infusion, and monitoring patients closely for signs and symptoms of HSRs.

Unexpected HSRs often are frightening to nurses and patients when they occur. As seen in the case study, carboplatin HSRs can occur without warning after numerous doses. In fact, that is a defining characteristic of carboplatin HSRs. Because of the unpredictable nature of carboplatin HSRs, many nurses and patients are unprepared when they occur. When reactions occur days after infusion, nurses may miss

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