

# TOLERABILITY AND SAFETY OF CARBOPLATIN-BASED CHEMOTHERAPY IN A HEMODIALYZED PATIENT WITH BREAST CANCER

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## OBJECTIVE

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The oncology pharmacist was consulted on the neoadjuvant carboplatin-based chemotherapy regimen for a 59 yo. woman with triple negative stage IIA breast cancer and stage 4 of chronic kidney disease. She was undergoing hemodialysis three times a week, on a Tuesday-Thursday-Saturday schedule. Chemotherapy regimen was Docetaxel 75 mg/m<sup>2</sup> IV D1, Carboplatin AUC 5 IV D1, Q21D, 6 cycles.

The major dose-limiting toxicity of carboplatin is myelosuppression, especially thrombocytopenia. As carboplatin is eliminated mainly through the kidneys, dosage adjustment and timing is required for patients with impaired renal function to prevent severe hematologic toxicity. Carboplatin is removed by hemodialysis.

Our aim was to examine the tolerability and safety of carboplatin-based chemotherapy and the applicability of the Calvert formula in a hemodialyzed patient with localized breast cancer.



## METHODS

We reviewed the literature on the pharmacokinetics, efficacy, tolerability and dosage adjustment of carboplatin. In patients on chronic hemodialysis, the issue is how to evaluate the glomerular filtration rate (GFR) in the Calvert formula. We planned the administration of chemotherapy on a nondialysis day and the following hemodialysis session to occur 24 hours afterwards. The GFR value was assumed to be 0 mL/min and the carboplatin dose calculated was 125 mg.

## RESULTS

After the first cycle, absolute neutrophil nadir count was 5,51 10e-3/mcL and platelet nadir count was 238 10e-3/mcL. CTCAE grade 3 diarrhea was controlled with loperamide. Furthermore, a significant reduction in the tumor size was attained.

## DISCUSSION

The first two chemotherapy cycles were found to be safe and well tolerated. Neither neutropenia nor thrombocytopenia occurred. Neither allergic or hypersensitivity reactions nor delayed nausea or vomiting occurred.

## CONCLUSION

Dosage adjustment and timing of carboplatin-based chemotherapy can result in a safe and well tolerated preoperative treatment option in a hemodialyzed patient with localized breast cancer.