

Carboplatin hypersensitivity: a 6-h 12-step protocol effective in 35 desensitizations in patients with gynecological malignancies and mast cell/IgE-mediated reactions

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Objectives

The incidence of hypersensitivity reactions (HR) is increased in patients treated with multiple courses of carboplatin. The purposes of this investigation were to evaluate the effectiveness of a 12-step desensitization protocol and to characterize the immune mechanism of carboplatin HR.

Methods

We analyzed 10 consecutive patients who had documented HR to carboplatin and in whom continued treatment with carboplatin was considered advantageous. The patients were treated with carboplatin using a 6-h, 12-step desensitization protocol with a 30-min premedication regimen. Skin tests were performed on five patients.

Results

Ten patients successfully completed 35 planned courses of desensitizations to carboplatin, 31 of which were without reactions. Four patients had symptoms during their first ($n = 3$) and third ($n = 1$) desensitizations but tolerated the re-administration of infusions without further reactions. For subsequent courses, the protocol was modified for two patients who had extracutaneous symptoms during desensitization and was unchanged for the patient who had mild urticaria. These three patients tolerated subsequent courses of desensitizations without reactions. The fourth patient with symptoms during desensitization no longer required carboplatin due to progressive disease. Of the five patients who were skin tested to carboplatin, four had positive wheal and flare reactions. In one patient, the skin test response to carboplatin became negative after desensitization.

Conclusion

The 6-h, 12-step desensitization protocol is safe and effective for treating patients with carboplatin HR. Positive skin tests to carboplatin suggest a mast cell/IgE-mediated mechanism. Conversion of the positive skin test to a negative response after desensitization supports antigen-specific mast cell desensitization.