

A fatal anaphylactic reaction to paclitaxel is described, which was preceded by a possible delayed reaction to the initial infusion

A 37-year-old woman was hospitalized with a pruritic rash of 1-day duration. Diagnosed with breast cancer 3 months earlier, she had received four cycles of doxorubicin and cyclophosphamide with the last dose given 1 month earlier. Ten days before admission, the first dose of paclitaxel, 175 mg/mm², was administered after a previous evening 20-mg dexamethasone dose, with i.v. dexamethasone, diphenhydramine, and ranitidine administration immediately before infusion. Pegfilgrastim was administered the day after the chemotherapy. She was taking carvediol (a combined nonselective α - and β -blocker) regularly for mitral valve prolapse. She had no history of asthma, allergic rhinitis, or food/drug allergies.

On admission, there were urticarial plaques and papules involving the face, torso, and extremities with associated erythema and lip swelling. The heart rate was 115, temperature was 38.6°C, white blood cell count was 55,000, the sedimentation rate was 83, and the saO₂ was 93%. Diphenhydramine and prednisone were administered. The next day, the saO₂ was 96% and the heart rate and temperature were normal. The rash was still present. On the 4th hospital day, the rash had resolved and the patient was discharged. Continued treatments with the same dose of paclitaxel without pegfilgrastim were planned. The day after discharge the patient returned to the infusion center for her second dose of paclitaxel. The same pretreatment regimen was administered except for the previous evening oral dexamethasone dose. After infusion of 4 mL of paclitaxel solution, the patient described dysphoria and dyspnea. The heart rate was 145 and the saO₂ was 96%. Felt to have a bronchospastic response, diphenhydramine, 50 mg, and dexamethasone, 10 mg, were administered i.v. but the patient deteriorated and emergency medical services arrived soon after. After subcutaneous epinephrine, no pulse could be obtained. The patient then underwent cardiopulmonary resuscitation including intubation, chest compression, i.v. fluid administration, and repeated doses of parenteral epinephrine and atropine. Asystole, laryngeal/facial edema and tongue swelling were noted. After transportation to the hospital, the patient expired despite resuscitation efforts. The cause of death was stated to be paclitaxel-induced anaphylaxis. The family declined an autopsy. Serum tryptase was not determined.

This patient had a multisystem illness 10 days after paclitaxel administration. Cutaneous manifestation (urticaria

and angioedema) consistent with an allergic diathesis were accompanied by fever, leukocytosis, an increased sedimentation rate, and nonbronchospastic hypoxemia. The patient's clinical sequela was reminiscent of the findings reported for venom hypersensitivity, in which venom-associated serum sickness reactions were associated with an increased risk of anaphylaxis on reexposure.^{1,2} Because of the slow release of pegfilgrastim, antigen stimulation was felt to be more likely with this drug. Although it has been stated that most reactions to paclitaxel occur within 10 minutes of the start of infusion,³ the sequence of events in this case would suggest that any systemic reaction syndrome after paclitaxel initiation should be regarded seriously as a possible harbinger of a more serious hypersensitivity reaction subsequently on reexposure. Furthermore, the use of typical prophylactic medication can not be relied on to prevent serious allergic reactions to paclitaxel^{4,5} and are no substitute for formal desensitization⁵⁻⁷ in sensitized patients. This case report also shows that epinephrine is not always used promptly in the recommended manner (intramuscular administration is preferred) as the first-line treatment of anaphylaxis.⁸

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