Superficial Thrombophlebitis From Intravenous Pentamidine in Hematopoietic Cell Transplantation Recipient

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A 47-year-old man with acute myeloid leukemia, who underwent allogeneic hematopoietic cell transplantation (HCT), remains on maintenance guadecitabine chemotherapy and tacrolimus 0.5 mg for primary prophylaxis of chronic graft-versus-host disease. Following HCT, the patient was receiving intravenous (IV) pentamidine 300 mg through a central venous catheter (CVC) every 3 weeks for prophylaxis of Pneumocystis jirovecii (PJP) for 6 months without any adverse events. After removal of the CVC, he presented to the outpatient infusion center and received pentamidine infusion through a peripheral vein for the first time. The dose was given concurrently with dextrose 5%; however, the patient acutely developed itching, redness, and an intensely painful erythematous streak along the right cephalic vein (Figure). The patient denied fever, chills, dizziness, systemic skin rash, and he remained hemodynamically stable. Decrease of the infusion rate and administration of diphenhydramine 25 mg resulted in reversal of the acute event. The same adverse reaction occurred again 3 weeks later when the IV pentamidine was administered via peripheral line. His PJP prophylaxis was therefore transitioned to oral atovaquone 1500 mg once daily. Although systemic reactions such as severe hypoglycemia, nephrotoxicity, pancreatitis, and hypotension are known effects of IV pentamidine, local irritation, such as sterile abscesses and phlebitis, can be seen rarely, especially if the drug is administered through a peripheral catheter. Other differential diagnoses to consider are extravasation of the infused solution, cellulitis, and septic phlebitis.1-3

The exact mechanism of local infusion reactions or thrombophlebitis caused by IV pentamidine, a known irritant with vesicant-like properties, is not known. Some case reports suggested increasing infusion volume and lengthening duration of infusion for prevention.2,3 In contrast to reported local reaction or thrombophlebitis when IV pentamidine is administered via
peripheral catheter, such reactions have not been reported when the drug is given via central venous catheter. In a prospective study of the safety and efficacy of monthly IV pentamidine (4 mg/kg, given through a CVC) for prophylaxis of PJP in 50 adult patients undergoing HCT or intensive chemotherapy, Sweiss and colleagues reported no such reactions.\(^4\)

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