Foscarnet-induced penile ulceration

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KEY WORDS

foscarnet, penile ulcers, irritant dermatitis, side effect

SUMMARY

Foscarnet is used to treat infections with herpes viruses, including drug-resistant cytomegalovirus (CMV) and infections with herpes viruses 1 and 2 (HSV-1 and HSV-2). There are some reports of intravenous foscarnet-induced penile and vulvar ulceration. The authors report a case of severe penile ulcers after the initiation of intravenous foscarnet therapy.

Foscarnet is a pyrophosphate analogue that inhibits viral DNA polymerases including reverse trancriptase of human immnunodeficiency virus type 1. It is used to treat infections with herpes viruses, including drug-resistant cytomegalovirus (CMV), particularly in CMV retinitis, and infections with 1 and 2 (HSV-1 and HSV-2). There are some reports of intravenous foscarnet-induced penile and vulvar ulcerations (1, 2).

The authors report a case of a 32-year-old man with acquired immune deficiency syndrome who started intravenous foscarnet (90 mg/kg/bid) for ganciclovir-resistant cytomegalovirus hepatitis. Ten days after initiating foscarnet, he developed multiple, painful penile ulcers (Fig. 1). Physical examination revealed an uncircumcised man with multiple irregular, tender, nonindurated ulcerations with serous exudate, located on the periurethral area, glans, and penile shaft. The surrounding skin was normal. Inguinal lymphadenopathy was absent. Screening for syphilis (serology), fungi (*potassium hydroxide* preparation test), and viruses (Tzanck preparation and polymerase chain reaction test for herpes simplex virus) were all negative. A cutaneous biopsy was refused. Penile catheterization was performed and foscarnet was discontinued after hepatic improvement. Improvement in the ulceration was noted after one week (Fig. 2) and significant healing one month later.

Foscarnet is used to treat herpes viruses, including drug-resistant cytomegalovirus (CMV), particularly CMV retinitis, and infections with 1 and 2 (HSV-1 and HSV-2). Foscarnet can also be used to treat HIV patients as part of salvage therapy. Nephrotoxicity is a major side effect associated with foscarnet therapy. Additional adverse effects include hypocalcemia, anemia, thrombophlebitis of the peripheral veins, and mild elevation of liver function tests.

There are some reports of intravenous foscarnet-induced penile and vulvar ulcerations (1, 2). The cause of the ulcerations is unknown. Although clinically the ulcers can resemble a fixed drug eruption, the biopsy

Figure 1. Irregular, tender, nonindurated ulceration, located on the periurethral area, gland, and penile shaft.

Figure 2. Ulceration improvement after penile catheterization and discontinuation of foscarnet.

findings do not support this diagnosis and tend to support an acute dermatitis (3). Topical preparations of 3% foscarnet cream have been found to induce severe irritant dermatitis, particularly in the subpreputial space in uncircumcised men, while topical preparations of 0.3 to 1.0% have been better tolerated (4, 5). Approximately 94% of the drug is excreted unchanged in the urine and may be retained in the subpreputial space after urination. An irritant dermatitis secondary to cutaneous contact with foscarnet in the urine seems plausible, mainly because all reports of ulceration have occurred early on in treatment when high dose regimens are used. Moreover, because of foscarnet nephrotoxicity, good hydration during therapy is recommended, increasing the frequency of urination and thus increasing the chance of genital ulceration. Good personal hygiene, including washing the genitals after urination, is recommended to reduce the occurrence of this side effect (5).

Although the patient refused a biopsy, the development of the ulcers after starting foscarnet and the improvement with the cessation of the antiviral therapy allows us to assume that this is another case of foscarnet-induced genital ulcers.

With the increasing number of patients with resistant herpes virus infections being treated with foscarnet, it is essential to be aware of this potential complication.

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