Ciprofloxacin-induced erythema multiforme

Shilpashree H. S., Shriprasad Sarapur[1]

Departments of Oral Medicine and Radiology, [1]Prosthodontics, RKDF Dental College and Research Center, Bhopal, Madhya Pradesh, India

ABSTRACT

Ciprofloxacin is one of the most commonly used antibacterial agents with relatively few side effects. Serious adverse reactions reported with ciprofloxacin are rare with an incidence of 0.6%. One of the side effects of ciprofloxacin is erythema multiforme (EM). EM is an acute, self -limiting mucocutaneous hypersensitivity syndrome. It exhibits a diverse etiology, often recurs, has unusual clinical features and is of uncertain etiopathogenesis. It usually exhibits a distinctive skin or mucosal lesions that are characterized by combination of bullae, papules, macules or ulcers. It is most probably an immunologically mediated process. With the use of ciprofloxacin becoming more and more widespread, fatal complications of ciprofloxacin should be borne in mind. In this article we present a case of ciprofloxacin induced erythema multiforme in 40 year old woman.

Key words: Ciprofloxacin, erythema multiforme, ulcer, hemorrhage

INTRODUCTION

Ciprofloxacin is a fluorinated quinolone having broad antimicrobial activity and is effective after oral or parenteral administration. It is used in urinary tract infection, sexually transmitted diseases, and infections of the gut, respiratory tract, bones and soft tissues. A few cases of ciprofloxacin-induced photosensitivity, hypersensitivity, anaphylaxis, vasculitis, erythema multiforme and Steven-Johnson syndrome or toxic epidermal necrolysis have been reported so far.[1] There are very few detailed case reports of erythema multiforme due to use of ciprofloxacin. In this report, we discuss the case of a 40-year-old female patient clinically diagnosed with ciprofloxacin-induced erythema multiforme.

Access this article online	
Quick Response Code:	Website: www.jpharmacol.com
	DOI: 10.4103/0976-500X.103696

CASE REPORT

A 40-year-old female patient reported to our clinic with complaints of painful ulcers, hemorrhagic crusts on the lips and fever. Patient also reported with conjunctival soreness and multiple, erythematous, discrete, confluent blanchable macules and papules all over the body since four days. Because patient had the history

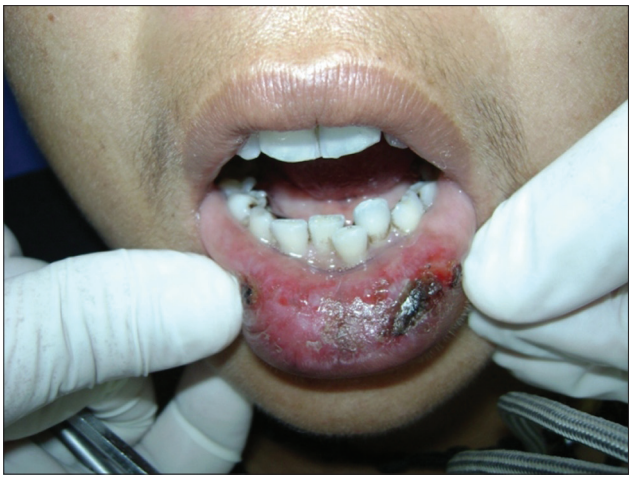

Figure 1: Swelling and crustations on the lips

Address for correspondence:
Shilpashree H. S., Department of Oral Medicine and Radiology, RKDF Dental College and Research Centre, N.H. - 12, Hoshangabad Road, Bhopal – 462 026, Madhya Pradesh, India. E-mail: shilpashree.sarapur@gmail.com

of urinary tract infection, she had been using ciprofloxacin. The presentations of the patient were strongly correlated with the intake of ciprofloxacin, as the signs and symptoms have started appearing four days after intake of ciprofloxacin. The patient was advised to discontinue ciprofloxacin. Two days after discontinuation of the drug, the patient developed bullous lesions and bullae on lips, which subsequently ruptured to leave large raw painful areas followed by crustations of lips [Figure 1]. The patient's family history was non-contributory. The hemoglobin estimation, total and differential WBC count, ESR, chest X-ray, and blood sugar were all within normal limits. The patient was advised tab. prednisone 20 mg two times daily and tab paracetamol 500 mg three times daily for 1 week. After 1 week steroid dose was tapered and patient was recalled. After 15 days of prescription, there was complete resolution of swelling and crustations on the lips [Figure 2]. The patient was kept under observation for 2 months; in this period there was no recurrence. Naranjo algorithm theory explains and scales the adverse drug reactions associated with the drugs. In this case, Naranjo score is 6 in association with the drug ciprofloxacin.[2]

DISCUSSION

Erythema multiforme is an acute mucocutaneous hypersensitivity reaction with variety of etiologies. It is characterized by a skin eruption, with or without oral or other mucous membrane lesions. It can be induced by drug intake or several infections [Table 1].[3,4]

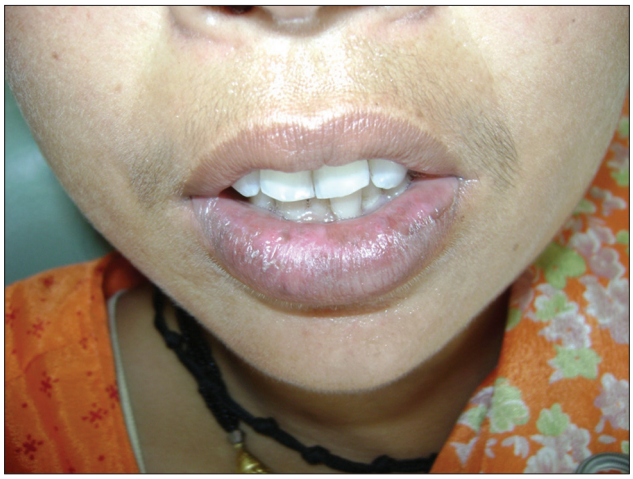

Figure 2: Swelling and crustations on the lips resolved after 15 days

Table 1: Drugs and infectious agents most commonly associated with erythema multiforme and related disorders[3]

Drugs:
Antibacterial: Sulfonamides, Penicillins, Cephalosporins, Quinolones; Anticonvulsants; analgesics; nonsteroidal anti-inflammatory drugs; antifungals.
Infectious agents:
Herpes-Simplex virus; Epstein-Barr-virus; Cytomegalovirus; Varicella zoster virus; Mycoplasma Pneumoniae; hepatitis virus; Mycobacterium; Streptococci; fungal agents; parasites.

EM is an immune-mediated disease that may be initiated either by deposition of immune complexes in the superficial microvasculature of skin and mucosa, or cell-mediated immunity. Kazmierowski and Wuepper studied specimens of lesions, less than 24 hours old from 17 patients with EM; 13 of the 17 had deposition of immunoglobulin M (IgM) and compliment (C) 3 in the superficial vessels. Other healthcare workers have detected elevated levels of immunocomplexes and decreased compliment in fluid samples taken from vesicles.[5]

Erythema multiforme typically affects teenagers and young adults (20–40 years). The disease is more common in males than in females in a ratio of 3:2.[3] Erythema multiforme has been classified as minor and major (Steven-Johnson syndrome or toxic epidermal necrolysis). The erythema multiforme minor is the mildest type of lesion and toxic epidermal necrolysis is the most severe.[3,4]

Erythema multiforme is associated with mild or no prodromal symptoms. Fever, lymphadenopathy, malaise, headache, cough, sore throat and polyarthralgia may be noticed as much as 1 week before the onset of surface erythema or blisters. Lesions may appear as irregular red macules, papules and vesicles that collapse and gradually enlarge to form plaques on the skin. Crusting and blistering sometimes occur in the center of the skin lesions, resulting in concentric rings resembling a "bull's eye" (target lesion). On the other hand, oral lesions are usually erythematosus macules on the lips and buccal mucosa, followed by epithelial necrosis, bullae and ulcerations with an irregular outline and a strong inflammatory halo. Bloody encrustations can also be seen on the lips.[3,4]

Although the histopathology is not specific, two major histologic patterns have been described: An epidermal pattern characterized by lichenoid vasculitis and intraepidermal vesicles, and a dermal pattern characterized by lymphocytic vasculitis and subepidermal vesiculation.[5] Although our patient's history and clinical features were very supportive of EM, biopsy could not be performed.

Treatment of EM is symptomatic and involves treating the underlying causes. Mild cases of oral EM may be treated with supportive measures only, including topical anesthetic mouthwashes and a soft or liquid diet. Moderate-to-severe oral EM may be treated with a short course of systemic steroids. Patients with severe cases of recurrent EM have been treated with dapsone, azathioprine, levamisole or thalidomide. Antiherpes drugs such as acyclovir or valacyclovir can be

effective in preventing susceptible patients from developing herpes-associated EM, if the drug is administered at the onset of recurrent HSV lesion.[5]

CONCLUSION

Ciprofloxacin is one of the widely used antibiotics in infections of oral cavity and other systemic diseases. The ciprofloxacin triggers the immunologic derangement and causes erythema multiforme. Care should be taken while prescribing, and patient should be counseled about the possible side effects. Patient should be advised to discontinue the medicine and consult the physician immediately after development of any itch, redness or rash.

REFERENCES

1. Santhoshkumar R, Jeevanagi, Manjunath S, Wali VK. A case of ciprofloxacin-induced erythema multiforme. Indian J Pharmacol 2008;40:45-6.
2. Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz I, Roberts EA, *et al*. A method for estimating the probability of adverse drug reactions. Clin Pharmacol Ther 1981;30:239-45.
3. Osterne RL, Matos Brito RG, Pacheco IA, Alves AP, Sousa FB. Management of erythema multiforme associated with recurrent herpes infection –A case report. J Can Dent Assoc 2009;75:597-601.
4. Al-Johani KA, Fedele S, Porter SR. Erythema multiforme and related disorders. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2007;103:642-54.
5. Greenberg SM, Glick M. Burkit's Oral Medicine. Diagnosis and treatment. 11th ed. Hamilton, Ontario: BC Decker Inc.; 2009.

How to cite this article: Shilpashree HS, Shriprasad S. Ciprofloxacin-induced erythema multiforme. J Pharmacol Pharmacother 2012;3:339-41.
Source of Support: Nil, **Conflict of Interest:** None declared.