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## Severe systemic anaphylaxis caused by oral moxifloxacin: a case report in China

Xiaoyan Wang, Xueyan Wang

Allergy Department, Beijing Shijitan Hospital, Capital Medical University, China

**Description:** A 59-year-old woman, with no history of atopy or allergy, was treated with oral moxifloxacin for acute respiratory infection. Ten minutes after the ingestion of 400mg moxifloxacin, the patient developed pruritus and generalized urticaria with bilateral eyelid angioedema. She was then transferred to the ER in local hospital. While on the ambulance, she presented with dyspnea, lower and upper lips angioedema, wheezing and edema of larynx. Then the symptoms developed into general discomfort. She had confusion of consciousness and decreased blood pressure (70/40mmHg) half an hour after the moxifloxacin taken. After the admission, general treatment such as ECG monitoring, oxygen inhalation and intravenous infusion were given to support vital signs. Oral antihistamines (cetirizine) 10mg and systemic corticosteroids (dexamethasone 10mg) was given immediately. Muscle injection of epinephrine 5mg was performed simultaneously. The urticarial lesions and angioedema faded away 30 minutes after the application of medications with alleviating of dyspnea and larynx edema. But the patient presented with palpitation (heart rate 120 beats per minute) and hands trembling due to the side effect of epinephrine. The immediate ECG showed sinus tachycardia. Metoprolol 100mg was given to control the tachycardia. The patient was closely monitored and the blood pressure, heart rate and other vital signs became normal within half day. Blood test including biochemistry, gas analysis, and electrolyte showed no abnormality. She then was dismissed from ER the next day. Following up till today showed no relapse or other allergic reactions.

**Case Discussion:** Moxifloxacin is a new quinolone with a methoxy group on carbon 8 that differentiates it chemically from the other Fluor quinolones<sup>[1]</sup>. The quinolones are broadly applied in all kinds of infections and generally well tolerated. The spectrum of adverse reactions to quinolones ranges from gastrointestinal symptoms, which are the most frequent, to neuropsychiatric symptoms, hematologic abnormalities and hypersensitivity reactions. Urticaria, anaphylaxis, hypersensitivity syndrome, acute generalized exanthematous pustulosis, fixed drug eruption, toxic epidermal necrosis, photosensitivity and anaphylactic reaction have occasionally been reported with quinolones<sup>[2,3]</sup>.

In this clinical case, we report a patient presented with severe anaphylaxis or allergy shock which is relatively rare. But we still had query on this case. The patient had previously tolerated oral moxifloxacin with no history of allergy. So here comes the question: why did she develop severe anaphylaxis this time? The patient was on business trip in a suburb area during the onset of the disease. She was extremely exhausted few days before the event and suffered from acute respiratory infection. Before the ingestion of moxifloxacin, she had a shower with hot water. Fatigue and increasing of blood flow were regarded as the main triggers of the allergic reaction. Due to the limit of the medical conditions, the physicians didn't perform skin prick tests with moxifloxacin. Though without skin prick test or serum IgE test evidence of positive allergic reaction to moxifloxacin, the strong connection between the history and the symptoms, severe systemic anaphylaxis caused by moxifloxacin was diagnosed. Hypersensitivity IgE-mediated reactions to quinolones are not easy to diagnose, with skin testing inducing false positive results. Clinical history and manifestation should be first considered. When history is solid and substantial, anaphylaxis and allergic reaction to quinolones should be diagnosed, especially when skin prick test of quinolones is invalid in some area. In addition, we'd like to mention about the application of im. Epinephrine during the acute phase of anaphylaxis. Though this should be undoubtedly the first line choice of anaphylaxis according to the guideline of EAACI<sup>[4]</sup>.



The rate of epinephrine given to the anaphylaxis patient in China is extremely low due to two reasons:

- 1) No adrenaline automatic injector is on the medical market in China. Patient who needs this couldn't acquire from pharmacy or hospital.
- 2) The physicians are lack of the related knowledge of anaphylaxis and neglect the significance of adrenaline instead of systemic glucocorticoids. Besides, there is no guideline of anaphylaxis released by allergy committee, Chinese medical society.

The management of anaphylaxis should draw more attention in China and needs more effort of the national allergy society.

**References:**

- <sup>1</sup> Saravolatz LD, Leggett J. Gatifloxacin, gemifloxacin, and moxifloxacin: the role of 3 newer fluoroquinolones. *Clin Infect Dis.* 2003 Nov 1;37(9):1210-5.
- <sup>2</sup> Aranda A, Mayorga C, Ariza A, et al. In vitro evaluation of IgE-mediated hypersensitivity reactions to quinolones. *Allergy.* 2011 Feb;66(2):247-54.
- <sup>3</sup> Bozkurt B, Karakaya G, Kalyoncu AF. Tolerability of moxifloxacin in patients with antibiotic hypersensitivity. *Allergol Immunopathol (Madr).* 2005 ;33(1):38-41.
- <sup>4</sup> Muraro A, Roberts G, Worm M, et al; EAACI Food Allergy and Anaphylaxis Guidelines Group. Anaphylaxis: guidelines from the European Academy of Allergy and Clinical Immunology. *Allergy.* 2014 Aug;69(8):1026-45