

Severe Asthma Attack in a Patient with Premenstrual Asthma: Hot Pepper Is the Possible Trigger

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Mild to severe deterioration of asthmatic symptoms during the premenstrual period has been reported in 30–40% of female asthmatics [1]. Although most of the authors suggest that alteration of hormonal status during the menstrual cycle has an important role, none has been able to demonstrate the exact mechanisms in the etiology of this entity [2]. We present a case who was admitted to the emergency room of Gaziantep University Hospital for a severe premenstrual asthma attack which had begun after handling fresh red hot pepper for several hours. After the addition of the leukotriene receptor antagonist (LRA) montelukast to her medication, her asthma has been better controlled even during the premenstrual periods for the last 16 months.

A 38-year-old asthmatic woman was brought to the emergency room for loss of consciousness following an acute dyspnea episode in July 1999. On physical examination, she had an irregular breathing pattern, cyanosis and markedly diminished breath sounds. Her blood pressure was 160/100 mm Hg and pulse rate was 140 per minute. Arterial blood gas analysis revealed acute hypercapnic respiratory failure (pH 7.08, PaO₂ 45 mm Hg, PaCO₂ 77 mm Hg, HCO₃⁻ 22.8 mmol/l). Chest X-ray showed no abnormality. Initial efforts to treat the acute attack with conventional medication failed and immediate intubation was performed for mechanical ventilation. Additionally, she was given 60 mg of methylprednisolone, 0.5 mg/kg/h aminophylline by continuous infusion and a mixture of 2.5 mg of salbutamol and 0.5 mg of ipratropium bromide via nebulizer every 4 h. Her condition stabilized the next day and she was then weaned from mechanical ventilation. Reviewing her medical records showed that she had been regularly followed at our asthma clinic with the diagnosis of premenstrual asthma for the last 10 years. However, she had never been admitted to the emergency room for an acute asthma attack until that day on which she chopped almost 20 kg of hot pepper with bear hands to make a traditional pepper sauce. She was discharged from the hospital 1 week later with LRA montelukast added to her medical regimen including metered-dose inhaler forms of salmeterol

(200 µg/day) and fluticasone (500 µg/day) plus oral prednisolone (30 mg/day) and oral theophylline (400 mg/day). Oral prednisolone was discontinued with tapering after 1 month. On her follow-up during the last 16 months, neither significant deterioration of her asthma nor marked drops in her PEFR measurements occurred even during her premenstrual periods.

To our knowledge, there is no report in the English medical literature that stresses the provocative effect of fresh hot pepper in asthmatic subjects. However, capsaicin, which is the irritant extract of hot pepper, is known as a potent bronchoconstrictor [3]. Therefore, we suggest that it was most likely her prolonged exposure to hot pepper that triggered off this acute severe asthmatic attack in our case.

To date, therapeutic strategies for premenstrual asthma (PMA) have been limited to some case studies. Besides theories on the hormonal alterations during the premenstrual period, Nakasato et al. [4] recently suggested that leukotrienes are partly involved in the pathogenesis of PMA, and that LRAs may be useful in patients with PMA. In the presenting case, similarly, asthmatic symptoms were adequately controlled with the addition of the LRA montelukast during the 16 months of follow-up.

In conclusion, we suggest that preparing pepper sauce at home or working in a hot pepper processing plant may be dangerous for asthmatic subjects because severe asthma attacks may be provoked by prolonged handling of hot pepper. We also suggest that LRAs may be considered in subjects with premenstrual asthma before hormonal therapy (gonadal releasing hormone analogs or progesterone) to avoid the side effects, related to these drugs, such as bone loss or cardiovascular complications.

References

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