



## An Important Side Effect of Pseudoefedrin used in Cold Flu Treatment: Fast Ventricular Responsive Atrial Fibrillation

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### Abstract

Symptomatic treatment for symptoms and signs of cold flu is often prescribed. Pseudoephedrine hydrochloride is one of them and we reported a serious side effect of it.

The patient with hypertension and coronary artery disease without known cardiac arrhythmia history was taking the drug containing pseudoephedrine hydrochloride due to cold flu. The patient applied due to palpitations, faintness, and chest pain. Rapid ventricular atrial fibrillation was detected in the ECG.

### Introduction

Cold flu is one of the most common infections in the community. Symptomatic treatment for symptoms and signs such as rhinitis, postnasal discharge, sore throat and headache seen in the course of the disease is arranged in the current treatment [1]. Pseudoephedrine Hydrochloride (PEH) is a sympathomimetic agent that stimulates Alfa and Beta-2 adrenergic receptors commonly used in upper respiratory tract infections. Alfa adrenergic effect causes vascular smooth muscle constriction and consequently decreases mucosal edema and inflammation findings; bronchodilator effect by induction of beta 2 adrenergic receptors in bronchial smooth muscle [2]. Due to its effects on the alpha adrenergic system of PEH, it is frequently used by physicians interested in the treatment of colds. In this case report, we aimed to draw attention to the serious cardiac side effects of PEH treatment.

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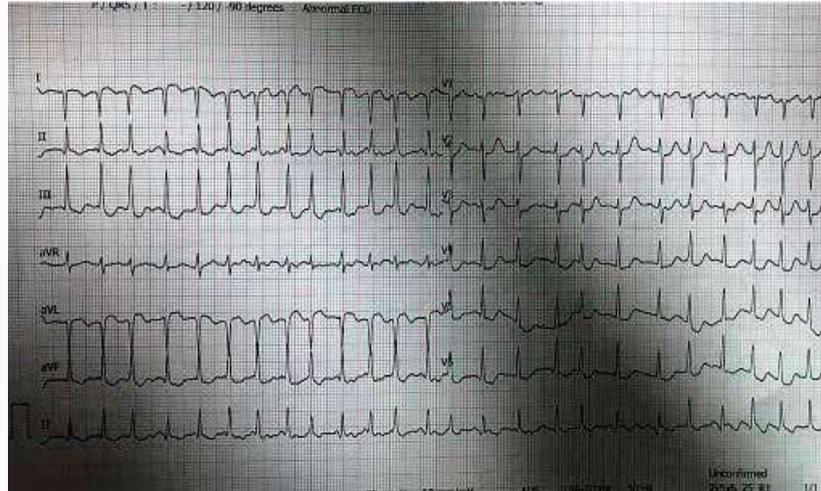
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### Case Presentation

A patient with known history of Hypertension (HT) and Coronary Artery Disease (CAD) without known cardiac arrhythmia history was taking the drug containing PEH 3 times a day for 2 days due to cold flu. The patient was referred to the emergency department due to palpitations, faintness, and chest pain. General condition was evaluated as good, anxious, conscious open, oriented, coopered. In vital signs; blood pressure: 170/110 mm Hg, pulse: 170/min. Rapid ventricular atrial fibrillation (velocity: 170-180/min) was detected in the ECG of the patient (Figure 1). The patient's medical story and hospital records showed that he had never had atrial fibrillation, palpitations, or any arrhythmia. This was evaluated as atrial fibrillation provoked by a drug containing PEH. The patient was given a 25 mg diltiazem slowly and then isotonic sodium hydration was added. The patient whose symptoms were improved and the sinus rhythm were obtained at ECG, and blood tests did not reveal any significant pathology was discharged with the recommendation of cardiology outpatient clinic.

### Discussion

Especially in spring and winter, many people use excessive or often over-the-top topical or systemic decongestants to get rid of allergic or infectious nasal congestion. Despite the symptomatic benefits of these drugs, it has been reported that it can cause serious adverse cardiac events in all users, especially those with known cardiac diseases. It has been reported in hypertensive patients that it may cause decompensation in patients with heart failure, which may cause myocardial infarction in people with elevated blood pressure, some that trigger many arrhythmias, such as ventricular tachycardia, known coronary artery disease, or normal coronary artery anatomy [3-5]. In addition, a manuscript published in 2009 reported a case of transient diffuse cardiac transmission due to



**Figure 1:** Atrial fibrillation with rapid ventricular response (Speed 180/min).

PEH [6]. There is also a case in which PEH triggers an epileptic event other than cardiac side effects [7]. Apart from all these side effects, PEH, nausea, vomiting, diarrhea, abdominal pain, delirium, urinary retention, dermatitis, toxic epidermal necrolysis, acute generalized exanthematous pustulosis [8-11].

## Conclusion

Despite side effects, PEH-containing preparations can be prescribed very frequently by physicians interested in treating colds for symptomatic treatment. In fact, some patients can obtain these medicines without prescription. Especially in patients with diabetes mellitus, hypertension, hyperthyroidism, epilepsy, coronary artery disease and cardiac disease, PEH-containing medicines can have serious side effects. For this reason, doctors should consider these serious side effects when prescribing PEH-containing medicines.

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