

# Yasmin Induced Pulmonary Embolism: a Case Report

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## Abstract

We evaluate a case report of Yasmin induced pulmonary embolism in order to provide reference for safety use of oral contraceptives.

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## Introduction

Yasmin (Drospirenone ethinylestradiol tablets) is the latest generation of oral contraceptives which landed in China in 2009, and has been widely used in the Chinese market. The main components of Yasmin are drospirenone 3mg and ethinylestradiol 0.03mg. It not only has high contraceptive effect, but also can stabilize the hormone level in women. However, it can cause some general and serious adverse reactions in the process of use, among which the risk of thromboembolism has caused widespread controversy in the world<sup>1</sup>. In this paper, one case of adverse reaction of pulmonary embolism caused by the use of Yasmin after abortion was analyzed in order to provide reference for the safety research of oral contraceptives in China<sup>2</sup>.

## Case Report

A 31-year-old female patient occurred pulmonary embolism during pregnancy in 2017, followed by anticoagulant therapy for more than 1 year. She was treated with artificial abortion in a maternal and child health hospital on September 5, 2019. After the operation, she took drospirenone ethinylestradiol tablets (Yasmin) for contraception regularly for 17 days, 1 tablet / day. On September 22, she had chest tightness symptoms and stopped using Yasmin and came to local hospital for treatment.

The patient denied the history of hypertension, coronary heart disease, diabetes and other chronic diseases, denied the history of hepatitis, tuberculosis and other infectious diseases, denied a history of smoking and drinking, denied a history of other major surgical trauma. The patient had a history of cephalosporin allergy and denied a history of other drug and food allergies. The patient's vaccination history is the same as the social requirements.

There were no main positive signs except the slightly increased breath sounds of both lungs on admission. Chest computed tomography (CT) examination showed multiple branches of pulmonary artery embolism on both sides and a few fibrosis foci in right middle lung. Color Doppler ultrasound showed that the diameter of the femoral vein in the right lower limb was enlarged, dense and small light spots were seen inside, and no thrombosis was found in the arteries of

both lower limbs and deep veins of the left lower extremity. Admission diagnosis: pulmonary embolism. After admission, routine urine and blood test, blood type test, thyroid function test and coagulation function test were taken and the results were all in the normal range.

After admission, conventional therapies including anticoagulation, thrombolysis and other symptomatic support treatment were immediately given and imaging findings were improved gradually. Color Doppler Ultrasonic Cardiography showed that the size of each cardiac cavity and the diameter of large vessels were all in normal range with mild mitral and tricuspid regurgitation. On the fourth day after treatment, Plain and enhanced CT scan showed that the embolism of multiple branches of pulmonary artery was absorbed and improved on 2 weeks after treatment. Based on the stable condition, the patient has no obvious discomfort or abnormal signs and was permitted to discharge from hospital and requested regular follow-up continuously.

## Discussion

According to the international research data, the risk of thrombosis caused by drospirenone is 2-3 times higher than that of women using levonorgestrel contraceptives<sup>3</sup>. Compared with the use of COCs containing levonorgestrel, the risk of VTE in COCs containing drospirenone was significantly increased (combined risk ratio was 1.5-2.0)<sup>4</sup>. Some studies have shown that the contraceptives containing drospirenone have a similar risk increase compared with the third generation oral contraceptives<sup>5</sup>. Although there is no official conclusion, we should be alert to the risk of thromboembolism, especially in patients with previous history of thromboembolism. In particular, screening should be strengthened before use, and it should be used without drug contraindications. Although the incidence of severe adverse reactions of pulmonary embolism caused by Yasmin is very low and relatively rare, once it occurs, it must be actively rescued to avoid life-threatening. This case report will provide a reference for the safety research of oral contraceptives and improve the pharmacovigilance level of oral contraceptives in China.

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