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Pulmonary Embolism Associated with Clomiphene Citrate in a Young Woman

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PE is a common but difficult to diagnose disease with high morbidity and mortality.

The most common causes are immobilization, surgery, trauma, congestive heart failure, oral contraceptive use, inherited thrombophilia and autoimmune diseases. Clomiphene citrate treatment is a rare cause of pulmonary embolism. A 28 year old woman was admitted to the emergency department of our hospital for chest pain ongoing for one day. There was no feature of Pulmonary Embolism, in the patient's medical history. Treatment of ovulatory dysfunction with clomiphene citrate (50 mg once a day) had been initiated 20 days prior. In her physical examination, blood pressure was 100/60 mmHg, heart rate was 120 bpm. Other systemic and laboratory findings were normal. An electrocardiographic evaluation revealed sinus tachycardia, D-dimer level was determined to be 5,2 µg/ml. Hypoxia and hypocapnia were detected in an arterial blood gas test. Pulmonary embolism was considered and thorax computed tomography angiography showed filling defects at right lower lobe pulmonary artery and segment branch. To investigate the etiology, doppler ultrasonography of the lower and upper extremity deep veins revealed no thrombus. The ejection fraction was measured as 65% on a transthoracic echocardiography, and no thrombus was observed in the heart cavities. There was no significant finding in a hypercoagulability testing panel that included antinuclear antibodies, homocysteine, cardiolipin antibodies, anti-double stranded DNA, antineutrophil cytoplasmic antibodies, lupus anticoagulant, proteins C and S, antithrombin, and factor V Leiden. The patient was diagnosed with a pulmonary embolism related to clomiphene citrate use. Anticoagulation treatment with bempiparine sodium was initiated and the patient was discharged. Clomiphene citrate is used for ovulation induction and female infertility, considered a first-line treatment because it is low cost, easily applicable and has minimal side effects. The more common side effects include hot flashes, abdominal-pelvic discomfort, ovarian enlargement, and visual blurring. Thromboembolic complications of clomiphene citrate including myocardial infarction, pulmonary embolism, deep vein thrombosis, ischemic stroke, and central vein occlusion. The mechanism of pulmonary embolism while using clomiphene citrate is not clear. Overproduction of ovarian hormones and vasoactive substances are considered to be a cause of hypercoagulation. Clomiphene citrate is considered to be safe for ovulation induction and to have minimal side effects. However, acute pulmonary embolism might be an uncommon but lifethreatening complication. Physicians should follow the patients in terms of pulmonary embolism more carefully who use Clomiphene citrate.

Keywords: Pulmonary embolism, clomiphene citrate, ovulation induction