

Pulmonary Embolism Associated with Hyperemesis Gravidarum Two Case Reports

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ABSTRACT

Pulmonary embolism is a major cause of death during pregnancy or the puerperium. The hemostatic changes in pregnancy creates a prothrombotic milieu. Hyperemesis gravidarum is one of the recognised risk factors for venous thromboembolism. Two cases of maternal mortality were attributed to PE associated with severe hyperemesis gravidarum in 2014 in Turkey. These two cases have been reported and discussed in the literature review. We aimed to alert clinicians that thromboprophylaxis should be considered when a pregnant woman suffers vomiting leading to clinical evidence of dehydration.

Keywords: Maternal mortality, Pulmonary embolism, Risk factors, Hyperemesis gravidarum, Thromboprophylaxis

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Introduction

Pulmonary embolism (PE) is a life-threatening condition and is one of the leading causes of death in pregnant women. In developed countries about 15% of maternal deaths result from pulmonary embolism (1).

During pregnancy, the risk of venous thromboembolism (VTE) increases fourfold to fivefold. The overall incidence is 0.7 to 1.7 per 1000 deliveries (2). The highest risk of VTE is in the first 3 months postpartum when the risk is increased 20- to 80 - fold, and postpartum pulmonary embolism (PE) occurs in approximately 0.45 of 1000 deliveries (2,3).


Hyperemesis gravidarum is one of the recognised risk factors for venous thromboembolism. Two cases of maternal mortality in 2014 in Turkey attributed to PE associated with severe hyperemesis gravidarum have been reported

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Case 1

A 36-year-old woman with a history of rheumatoid arthritis and one previous cesarean section has presented to a tertiary care hospital at 6 weeks of gestation with a complain of vomiting for 5 days. Her body mass index was 32 kg/m². The pregnancy was achieved with in vitro fertilization. Urinary tract infection was diagnosed in her urinalysis. And oral antibiotic treatment was started and the patient was discharged from the hospital. After 10 days, women had shortness of breath and chest pain suddenly at home and she lost her consciousness. The patient developed cardiac arrest at the ambulance while transporting to the emergency department. After resuscitation, she did not improve and died.

Case 2

A 31 - year - old woman has been admitted to the emergency room with shortness of breath. In the chest examination, there were rales at the bilateral lungs and she was diagnosed as acute bronchitis and discharged after 3 hours of hospitalization. In her obstetric history, she was suffering from vomiting for about one month. Just half an hour after the discharge from hospital, she was readmitted to the emergency department as cyanotic, with loss of consciousness. After administering cardiopulmonary resuscitation, she did not respond and died.

Discussion

Hyperemesis gravidarum aggravates the prothrombotic risk in pregnancy. The likelihood of VTE is higher when additional risk factors are present and when multiple risk factors combine the risk increase substantially. Consideration of other risk factors like maternal age, infection, hospitalization, obe-

sity, pregnancies with assisted reproduction methods should alert the clinicians to the synergistic effects of these prothrombotic risk factors. Antithrombotic recommendations are based on an assessment of an individual patient's level of risk for thromboembolism. Thrombotic events occur throughout pregnancy, with more than half occurring before 20 weeks of gestation (4). The updated RCOG guideline also lists hyperemesis as a risk factor for thrombosis (5). PE is very difficult to diagnose in pregnancy and the postpartum period as clinical presentations of PE are atypical, subtle and obscured by pregnancy symptoms. So, it is very important for obstetricians to recognize the women with risk factors. All women should undergo a documented assessment of risk factors for venous thromboembolism (VTE) in early pregnancy or before pregnancy. This assessment should be repeated if the woman is admitted to hospital for any reason or develops other intercurrent problems.

Venous thromboembolism (VTE) in pregnancy and the postpartum is an uncommon but clinically important condition. Pulmonary embolism (PE) remains a major cause of direct maternal mortality, with many deaths associated with a failure to obtain objective diagnoses (often because of unfounded concerns such as radiation exposure for the fetus) and lack of adequate treatment.

Maternal Mortality Surveillance has been conducted by the Ministry of Health since 2007 in Turkey. Data related to pregnancy follow-up, medical hospital records, death certificates, autopsy reports, local and national registries, reports of involved health care providers and verbal autopsies are the tools scrutinized to evaluate each of maternal death and determine the cause of death, risk factors, pregnancy related conditions and management and preventability. Decreasing maternal mortality is a global priority. Although, MMR has decreased in Turkey, deaths attributed to pulmonary embolism (PE) has demonstrated a steady trend which was 7.8% in 2005 (6) and 7.58% in 2013. In 2013, cardiovascular system disorders (27.7%) accounted for the majority of the maternal deaths followed by hemorrhage (18.7%). Hypertensive disorders of pregnancy were 17.4%, infectious diseases were 12.8 % of the maternal deaths. Turkish Ministry of Health has recently published a national risk-based guideline for thromboprophylaxis for obstetricians and gynecologists in Turkey (7). Also a course of training of obstetricians and gynecologists for 3 days has been conducted by Ministry of Health to prevent maternal deaths since 2012. Till now 1300 obstetricians and gynecologists of government hospitals have attended to these courses.

Given the very low awareness and practice of thromboprophylaxis among obstetricians and gynecologists, it is reasonable to expect a substantial progress in decreasing mortality cases due to pulmonary embolism after the introduction of guideline for thromboprophylaxis and the courses.

Thromboprophylaxis should be considered when a pregnant woman of any gestation suffers vomiting leading to clinical evidence of dehydration especially in the presence of other associated risk factors.

In conclusion, earlier admission for rehydration and thromboprophylaxis might have prevented these deaths. Women admitted with hyperemesis should be considered for thromboprophylaxis with LMWH unless there is a specific contraindication such as risk of labour or active bleeding and can discontinue thromboprophylaxis when the hyperemesis resolves.

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