

A CASE STUDY ON LIFE-THREATENING PREGNANCY-INDUCED HYPERTENSION IN PRETERM PREGNANCY AND MANAGEMENT CHALLENGES

AREEFA ALKASSEH^{1*}, MARYAM SHAATH²

¹Department of Midwifery, Faculty of Nursing College, Islamic University of Gaza, Gaza, Palestine. ²Department of Midwifery, Palestine College of Nursing, Ministry of Health, Gaza, Palestine. Email: abahri@iugaza.edu.ps

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ABSTRACT

Pregnancy-induced hypertension (PIH) is life threatening for the mother and her baby. Pre-eclampsia in pregnancy is a multisystem, disorder associated with significant maternal and neonatal morbidity and mortality. The current case study was done to clarify the consequences of PIH as a life-threatening condition at one of the governmental hospitals. A follow-up with observation recording was done since the first admission until the end of treatment duration. The patient presented with life-threatening PIH at 32 weeks of gestation. She was very tired and irritable and stayed in the hospital for several days; the case condition was progressed toward worse, lack of high-risk cases management team, the treatment plan, and decision-making were delayed until the 2nd day in the presence of the senior doctors. The final consequence for the present case was delivered by complicated cesarean section, the uterine repair was done due to placenta accrete and the baby was transferred to the neonatal intensive care unit with low Apgar scoring. The study concluded that early detection and proper intervention with the presence of collaborative team are required to reduce the maternal complications in low resources countries.

Keywords: Pregnancy-induced hypertension, Collaborative team, Effective decision-making.

INTRODUCTION

Pregnancy-induced hypertension (PIH) is defined as hypertension that exists during pregnancy after 20 weeks' gestation with no protein in the urine or any other clinical signs of pre-eclampsia (PE) [1]. PE during pregnancy complicates approximately 3–5% of pregnancies until now it considers one of the most leading causes of maternal and neonatal mortality. Severe PE is a life-threatening condition, and once it occurs, pregnancy termination is needed. Reducing maternal mortality and morbidity require obstetricians' critical decision of whether to perform termination of pregnancy delivery according to the clinical deterioration [2]. It is well known that cardiac, renal, endocrine systems will be affected during pregnancy and could result in maternal life deterioration [3,4]. To have an accurate diagnosis of three types of PE, the problem should be developed after 20 weeks of gestation based on series of certain criteria [4]. The difference between mild and severe PE determined by the level of diastolic blood pressure (BP) and percentage of protein in the blood [3]. The best way to classify disease severity in PE could be related to an incomplete understanding of the underlying pathophysiology of the disorder, with the clinical and laboratory manifestations of PE phenomena. One of the acknowledged definitive treatments for PE with less complication present in three categories; first prevention of PE, second early detection, and third treatment is the early detection and the delivery of the fetus before reaching the advance pregnancy weeks to decrease maternal risk [5-9]. It was agreed that premature fetal delivery should be characterized by lung maturation and fetus ability of extrauterine adaptation with less intensive care requirement [10]. PE during pregnancy until now considers one of the most leading causes of maternal and neonatal mortality.

CASE REPORT

D. A is a 28 years old, lives in Khanyounis, admitted to the obstetric emergency department at Al-Tahreer Hospital in January 02, 2018, referred from Khanyounis Martyrs clinic, "antenatal care department," she is a known case of high-risk pregnancy, previously admitted to the obstetrics department with the mild lower abdomen, pain, and headache; gestational age was 17 weeks and discharged after 3 days. In the first admission "January 02, 2018" at 9:00 AM, she was

presented with edema in the face and upper and lower extremities along with a severe headache and severe lower abdominal pain, absence of fetal movement. Regarding the previous obstetric history of the D. A it was reported that past she had two miscarriages, one was at 8 weeks and the other was ectopic pregnancy a year and a half ago at 10 weeks of her previous pregnancy. The D. A reported past obstetric history of remarkable recurrent miscarriages. She had two miscarriages, one was at 8 weeks and the other was ectopic pregnancy a year and a half ago at 10 weeks. Vital signs were measured and recorded as follows: BP was elevated at 180/120 mmHg. Her pulse was 100 (bpm), respiratory rate was 21 breaths per minute, and the temperature was 37.8°C. Her urine sample showed ++ 2 proteinuria (more than 200 mg in the blood). There was observable edema in her face and upper and lower extremities hyperreflexia, and mild vaginal bleeding. She looked pallor and fatigue. Abdominal examination was done by U/S showed that, the present case had single fetus, transverse position, oligohydramnios and low lying placenta (suspected placenta accrete) insertion. On briefly reviewing medical history of D. A, she has a history of a chronic episode of asthma, in which she uses salbutamol inhaler to relieve her symptoms. Related to psychological history, D. A has a history of depression. Regarding her family history, she reported that her father suffers from chronic hypertension as well as liver cirrhosis and her mother has a medical history of hypertension, angina, and transient ischemic attack. Both her maternal grandparents had a history of Type II diabetes mellitus. With regard to her social history, D. A works as a teacher and has a limited relationship with others. D. A is demonstrating key cardinal symptoms of severe PE including hypertension, proteinuria, edema, severe headache, increased reflexes, epigastric pain, and blurred vision, but she was conscious, oriented. The final diagnosis was severe PE. D. A was admitted to the obstetric ward, intravenous (IV) cannula was inserted. The initial laboratory investigations were done, blood group and Rh: B⁺, complete blood count: hemoglobin (Hb): 9.4 mg/dl, white blood cells: 8800, platelets: 328, chemistry: liver enzymes: alanine aminotransferase: 14, aspartate aminotransferase: 20, glucose: 66, urea: 17, and creatinine: 0.7; however, the protein:creatinine ratio was (0.8 mg/mmol); levels were elevated, normal range up to 0.3. As management in the labor room, the goal of treatment is to:

1. Prevent seizures
2. Lowering BP
3. Establishing an adequate renal function
4. Protect the mother and the fetus from complications.

Later after hours definitely at 1:00 PM, BP became 170/120 mmHg, urine analysis showed +++3 albumin with a severe headache and blurred vision, the specialized doctor was notified by the midwife, but there medical decision and intervention started after 2 h. At that time, the BP became 180/120 mmHg, with severe hyperreflexia and severe epigastric pain Mg sulfate 5 g IV in 100 cc normal saline was given as a loading dose in 20 min, then maintenance dose: 1.5 g IV/hour until, 24 h post-delivery, hydralazine 5 mg/15 min IV bolus, for 3 doses, "total 15 mg," Adalat: 10 mg once, catheter was inserted for calculating UOP. Due to low Hb level, 2 units of packed red blood cells (RBCs) were given.

In the 2nd day, January 03, 2018, BP became 130/80 mmHg, UOP: 800 cc/24 h; D.A was prepared for CS at 10:00 AM; consent form and checklist were completed, routine laboratory. Investigations were prepared before the operation, CS started at 10:15 AM and finished at 11:45 AM. Due to placenta accreta, uterine repair was done, another two packed RBCs were given, the delivery outcome was a female baby, gestational age: 32 weeks., wt. 1700 g, Apgar score assessment at the 1st min recorded 5 of 10 and in the second 5 min recorded 7 of 10, the newborn was referred to the neonatal intensive care unit due to respiratory distress.

Post op condition After CS showed that the first BP reading was 160/100mmHg so initial management was as follow:

1. Ceftriaxone 1 g/12 h
2. Metronidazole 500 mg/8 h
3. Heparin 5000 IU/12 h
4. IV fluids normal saline 500 cc/8 h
5. Mg sulfate 6 mg IV in 100 cc N.S over 20 min, then 6 mg/5 h then 1.5 mg/h until 24 h post-delivery
6. Adalat 10 mg/12 h
7. Continuous observation for the level of consciousness
8. Continuous monitoring for BP every 15 min for 1 h, then every 1/2 h for an hour, then continuous monitoring every 4 h
9. Monitor and calculation intake and output
10. Check Mg toxicity.

In the 4th day, January 05, 2018, general condition was good, stable, no vaginal bleeding, conscious, oriented, and active; BP was 140/85 mmHg, mild headache, edema started to release, urine output: 1200 cc/24 h, normal renal and liver function test, urine free from proteinuria; instructions were provided about: Incisional dressing and hygiene, frequent follow-up for BP in the primary clinics, lifestyle modification for diet, exercise and stress avoidance, and drug compliance; psychological support was provided by the doctors and midwives.

DISCUSSION

Where maternal mortality is high, most of the deaths are attributable to eclampsia, rather than PE. According to the World Health Organization, hypertensive disorders account for 16% of all maternal deaths in developed countries, 9% of maternal deaths in Africa and Asia, and as high as 26% in Latin America and the Caribbean [11-13]. It was reported that PE during admission for labor and delivery increased by 25% from 1987 to 2004, while the rate of eclampsia decreased by 22%, albeit not statistically significant [13]. Severe morbidity associated with PE and eclampsia includes renal failure, stroke, cardiac dysfunction

or arrest, respiratory compromise, coagulopathy, and liver failure. In a study of hospitals managed by Health Care America Corporation, PE was the second leading cause of pregnancy-related intensive care unit admissions after obstetric hemorrhage [14]. In recent study, it was suggested that calcium supplement during pregnancy may reduce the incidence of PE and preterm delivery [15]. In the present case, the risk was at a higher degree for the following reasons, the late doctor arrival, provoked development of signs and symptoms, the absence of psychological support, and finally, there was not a collaborative team and prompt decision-making for management of the case; this has resulted in CS delivery and preterm baby with severe respiratory distress. In addition to these things, the mother's room was not isolated and there was no emergency trolley in the room of the pregnant women to save the mother from complications and the room is far away from the nursing station. In the other side, the mother was negligent to frequent follow-up as antenatal visits were inadequate. Finally, we need for multitteam work to deal with such cases as PE is considered as multisystem disorder and sometimes need for high professional and medical care.

CONCLUSION

The study concluded that early detection and proper intervention with the presence of collaborative team can reduce the maternal complications. The study recommended that high-risk pregnant mother should be closely monitored, and the decision to terminate the pregnancy should be made without delay when the maternal or fetal condition worsens.

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