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Case Report

Mortality Prevention in Pregnancy with Pulmonary Arterial Hypertension; A Case Report

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ABSTRACT

Background : Pulmonary hypertension (PH) is a global disease that affects all age groups and progresses in later years. Pregnancy with PH has a poor prognosis, and it is because of delayed diagnosis or even undiagnosed. PH gives high-risk to the mother and fetus; therefore, arranging a multidisciplinary team for pregnancy and delivery management is required.
Objective : This case report was structured to emphasize mortality prevention in pregnancy with PH.
Case : A 23-year-old female was admitted to the hospital with a chief complaint of dyspnea at rest. She was 34-week pregnant pregnancy and previously had a history of abortion with similar symptoms. After conducting some examinations, the patient was diagnosed with pulmonary hypertension. We planned for lung maturation for the fetus, scheduled termination, delivery method, and post-delivery care. The fetus was dead intra-uterine on day 5 of care, and the mother passed away 24 hours later.
Conclusion : In summary, pregnancy was not advised in women with pulmonary hypertension. The collaboration and management by a multidisciplinary team are essential to improve outcomes if the pregnancy was still wanted.

1. Introduction

Pregnancy with pulmonary hypertension (PH) in women is rare and known to be associated with high morbidity and mortality. Consequently, PH is considered a contraindication for pregnancy; however, some women have known to be pregnant when they are newly diagnosed with PH. They are usually advised for pregnancy termination, although the termination itself has its own risks.[1-3]

The clinical symptoms of PH sometimes are nonspecific; therefore, a thorough examination and diagnostic are important. Otherwise, some cases are often missed. Echocardiography and imaging are necessary when managing pregnancy with PH. Current guidelines strongly advise to avoid pregnancy and share some recommendations on how to treat PH in pregnancy.[3]

This case illustration below shares the importance of prompt diagnosis and treatment to prevent pregnancy mortality with PH.

2. Case Illustration

A 23-year-old female was admitted to hospital with dyspnea at rest occurred in one month, persisted despite her activity or rest, was accompanied by fatigue and tired easily, and dry cough with no fever. She was 34-week pregnant. This was a second pregnancy, as the first one was aborted spontaneously in 2016, and she experienced similar symptoms. She did not go for a routine check-up. There was no history of contraception used or medication consumption during pregnancy.

When she arrived at the hospital, her peripheral oxygen saturation was 70% with NRBM 10 liters and increased JVP. There were heaves at the right ventricle, normal split with accentuated P2, diastolic murmur at the left upper sternal border, and systolic murmur at the lower left sternal border increased with inspiration. There were no rales or crackles. The ECG showed sinus rhythm with right axis deviation and right ventricle hypertrophy. Echocardiography examination revealed severe pulmonary hypertension (TR Vmax 5.84 m/s and pressure

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gradient 136 mmHg)), dilated RV, TAPSE 15 cm, and moderate pulmonary regurgitation, mitral and aortic insufficiency. There was no defect at intra-atrial and intra ventricular septum, nor PDA. LV systolic function was good (LVEF 58%). Mean pulmonary arterial pressure (mPAP) from the acceleration time of the RVOT VTI was 43 mmHg. The echocardiographic findings suggested pulmonary hypertension.

We collaborated with the Obstetric and Anesthesiology, Pediatric Cardiologist team for patient's management, including the plan for lung maturation for the fetus, scheduled termination, delivery method, and post-delivery care. Unfortunately, this was a lost case as the mother and fetus did not make it. The fetus was dead intra-uterine on day 5 of care, and the mother passed away 24 hours later.

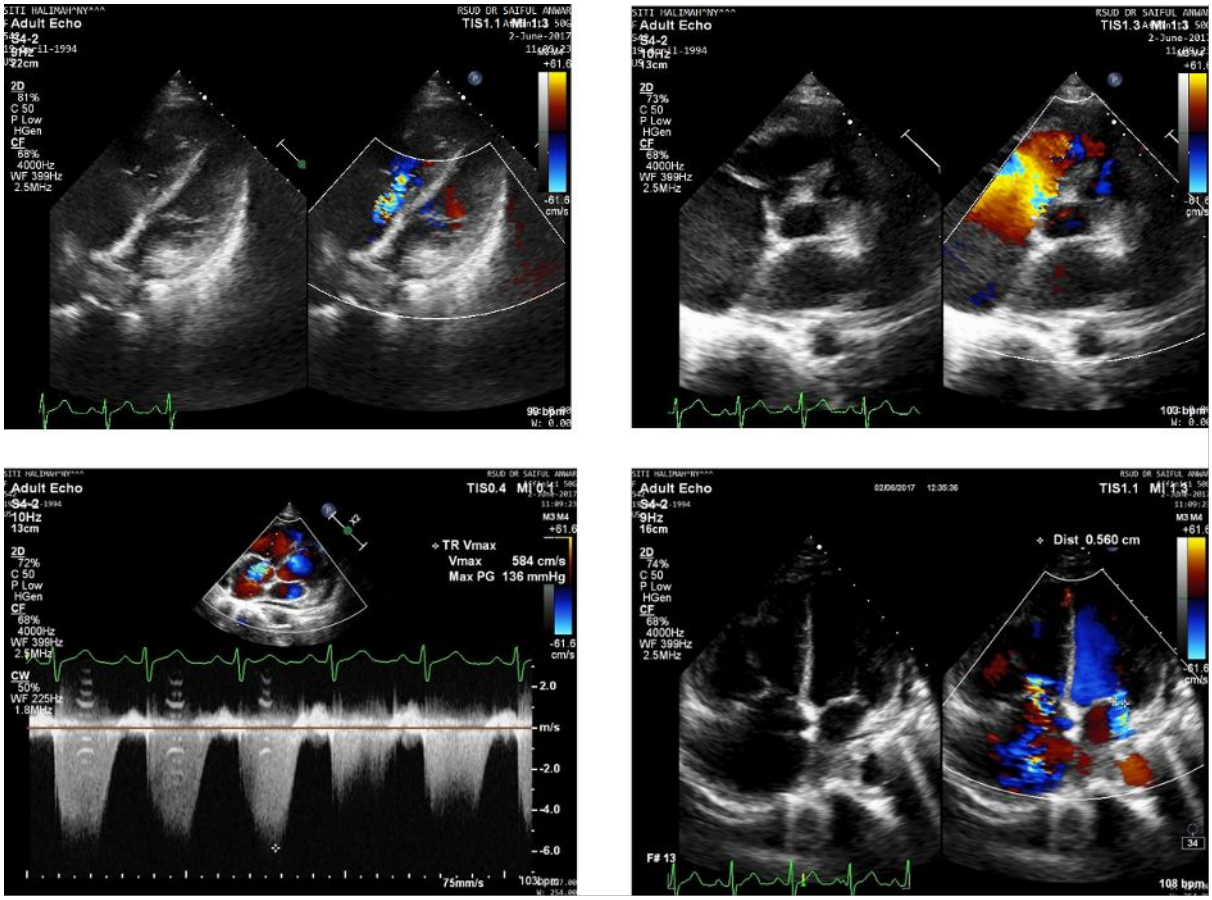

Figure 1. Echocardiography showed intact IAS, moderate pulmonary regurgitation, severe tricuspid regurgitation, dilated RV, mitral and aortic insufficiency.

3. Discussion

Pulmonary hypertension in pregnancy is one of the major morbidity, which in turn, causing maternal death eventually. According to the WHO classification of maternal cardiovascular risk, it is classified as class IV, an extremely high-risk of maternal mortality or severe morbidity. It also holds poor outcomes for the fetus. Women are advised not to be pregnant, and if pregnancy occurs, terminations should be discussed. Therefore, we did close monitoring and had arranged termination as soon as possible while trying to preserve both mother and fetus, with antenatal, Durante, and post-natal management by a multidisciplinary team. The prevention, including by giving a safe anti-pulmonary hypertension medication from a Cardiologist and lung maturation from an Obstetrician. Unfortunately, in this case, both mother and the fetus did not receive prompt treatment as she came at 34-week pregnant.

During pregnancy, there were dynamic changes in physiology, and it can be more deteriorating with the occurrence of PH. Worsening PH associates with worsening RV failure results in hypotension, hypoxia, and decreases cardiac output. Furthermore, it leads to shock and respiratory failure.[1,5-7] The literature stated that PH mortality was about 50% in pregnancy before PH treatment developed, mostly in congenital heart disease or idiopathic PH.[5] Another data revealed nine mortality out of 23 pregnant women with PAH, and 6 of them was reached the third trimester.[7]

The most essential key for managing PH in pregnancy is education and counseling, even preconception. Women with the condition should be educated for contraception, regular check-up, and treatment.

4. Conclusion

Pregnancy was not advised in women with pulmonary hypertension. However, if the pregnancy was still wanted, it requires aggressive treatment to avoid clinical and hemodynamic deterioration. Unfortunately, in most cases, mortality cannot still be avoided. Collaboration and management by a multidisciplinary team are essential to improve outcomes.

5. Declarations

5.1. Ethics Approval and Consent to participate
Patient has provided informed consent prior to involve in the study.

5.2. Consent for publication
Not applicable.

5.3. Availability of data and materials
Data used in our study were presented in the main text.

5.4. Competing interests
Not applicable.

5.5. Funding source
Not applicable.

5.6. Authors contributions
Idea/concept: OH. Design: OH. Control/supervision: MSR, AR, SA Data collection/processing: OH, MSR. Extraction/Analysis/interpretation: OH, MSR. Literature review: OH, MSR. Writing the article: OH, MSR. Critical review: OH, MSR. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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