



## Case Report

## Triplet pregnancy with severe preeclampsia: appropriate management

Linda Yanti <sup>1</sup>, Surtiningsih, Cicih Nurhayati

<sup>1</sup> Faculty of Health, Universitas Harapan Bangsa, Banyumas, Jawa Tengah, Indonesia

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### CORRESPONDENCE

Phone: +6281381145175

E-mail: surtiningsih@uhb.ac.id

### ABSTRACT

**Background:** The case of preeclampsia and triplet pregnancy is likely to cause hypertension in uncontrolled pregnant women if they are not managed properly, which may harm both the mother and the fetus. References for the treatment of similar cases are still uncommon. Therefore, this case study provides an overview of midwifery care management on cases of triplet pregnancy and severe preeclampsia.

**Case presentation:** A case of exacerbated triplet pregnancy with severe preeclampsia is described in a 36-year-old woman who was recently detected at the third-trimester visit at 31 weeks four days' pregnancy.

**Conclusion:** Management of patients with triplet pregnancies and severe preeclampsia is to perform standard antenatal care, ultrasound examinations in each trimester, hospital care, as well as psychological assistance.

### INTRODUCTION

Triplet pregnancies may lead to demise. There are 16 perinatal deaths (30.18%) out of 53 triplet pregnancies.<sup>1</sup> Besides, women with multiple / triplet pregnancies are at risk of 3 to 4 times undergoing preeclampsia and eclampsia.<sup>2,3</sup> Preeclampsia remains the leading cause of morbidity and mortality on mothers around the world.<sup>4,5</sup> In 2018, the cause of the highest maternal mortality rate in Central Java Province was preeclampsia/eclampsia totaled to 36.80% of 421 cases of death.<sup>6</sup> The risk of preeclampsia increases on women in their first pregnancy, aged over 35 years, having a history of hypertension, preeclampsia, diabetes mellitus, obesity, multiple pregnancies/triplets, kidney disease, lupus and also vascular or connective tissue disorders.<sup>7-10</sup>

There were no studies on the management of midwifery care for pregnant women with triplet pregnancy and severe preeclampsia. Previous research was concerned about pharmacological antihypertensive treatment in cases of preeclampsia,<sup>11-13</sup> the transabdominal potassium chloride (KCl) injection method, or the Multifetal Pregnancy Reduction (MPR) method as an effort to reduce triplet pregnancy<sup>1,14</sup>. Accurate diagnosis, comprehensive obstetric care,

and pregnancy assistance are needed to minimize pregnancy risk in triplet pregnancy and preeclampsia. Therefore, this study's main objective is to provide an overview of midwifery care management in the cases of triplet pregnancy and severe preeclampsia.

### CASE PRESENTATION

A 36-year-old pregnant mother in the third trimester (31 weeks four days) conducted her eighth pregnancy check-up at Puskesmas (Health Center) with complaints of heartburn, frequent dizziness, and swollen legs. Based on the results of the midwife's examination, the general condition was weak. Body mass index 31.27 kg/m<sup>2</sup>, 200/160 mmHg blood pressure, 38 cm symphysis-fundal height (SFH). Palpation of the uterus was palpable in 3 parts of the fetus with head presentation and has not yet entered the pelvis. The pulse of the first fetus was 136 / minute, the second fetus was 140 / minute, and the third fetus was 138 / minute. There was edema on the lower extremities.

The midwife decided to refer to the hospital for an ultrasound. The ultrasound results indicated a triplet pregnancy exacerbated by severe preeclampsia so that immediate termination was carried out by cesarean section (SC), and the three babies were born with Low Birth Weight (LBW).

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The patient's antenatal history recorded monthly routine check with the midwife. In the first trimester, the mother complained of nausea, and she was given vitamin B6 and counseled to eat little but often. In the second trimester, the mother said that she was exhausted and dizzy, the therapy is given by Ferrous Gluconate (FG) 250 mg taken once a day and multivitamins. At the third trimester visit, the midwife suspected multiple pregnancies and was indicated signs of severe preeclampsia, albeit the urine protein test results were negative. Standard therapy was supplemented with methyldopa 250 mg taken twice a day orally.

## DISCUSSION

### ***Why, in this case of triplet pregnancy and severe preeclampsia, can only be detected in the 3rd trimester?***

In this case, there was a delay in the diagnosis of triplet pregnancy and severe preeclampsia, which was recently detected in the third trimester of pregnancy. This condition should be detected earlier by paying attention to maternal complaints in the form of persistent headaches since the second trimester, swelling in the lower extremities, an increase in SFH higher than gestational age, and urine protein checking, and collaborating for an ultrasound examination.

Suppose the midwife is more careful in monitoring the increase in SFH that is unfitting to pregnancy age. In that case, the midwife should be able to collaborate with a gynecologist for an ultrasound so that triplet pregnancies can be detected early. Based on the results of the international standard SFH study at 31 weeks of pregnancy, the minimum is 27 cm and 34 cm.<sup>15</sup> Other studies demonstrate that the average height of the uterus in a single pregnancy ranges from 30-31 cm.<sup>16</sup> In comparison, in this patient, the SFH examination results reached 38 cm at the pregnancy age of 31 weeks four days, which means that the SFH is much higher than the pregnancy age.

Triplet pregnancy is a pregnancy that occurred from at least one to three fertilized ovum.<sup>17</sup> Moreover, the age of the mother who is 36 years old is a high-risk pregnancy age, and the mother's BMI is also in the category of obesity level 2 (31.27 kg/m<sup>2</sup>). According to the results, obese women with triplet pregnancy have a 3 to 4 times risk of experiencing preeclampsia than women of healthy weight.<sup>18</sup> Other research results demonstrated that the obesity body mass index is associated with increased blood pressure,<sup>19</sup> and there is a significant relationship between maternal weight gain during pregnancy with the birth weight of the baby.<sup>20</sup> Previous research has revealed that triplet pregnancy can be detected at 7-8 weeks of

pregnancy through an ultrasound examination.<sup>21</sup> Meanwhile, severe preeclampsia can be detected in the first trimester based on medical history, blood pressure, arterial stiffness, Doppler examination of maternal blood vessels, and examination of placental dysfunction.<sup>22</sup>

### ***Is the midwife's decision to refer to the hospital correct?***

The midwife's decision to make a referral to the hospital is correct because multiple/triplet pregnancy cases accompanied by severe preeclampsia is not under the authority of midwives. However, there were delays in referrals made by midwives because they should have been done earlier. The patient was collaborated and referred to on her eighth visit after finding multiple pregnancies and signs of severe preeclampsia, including raising blood pressure, edema, persistent headaches, and heartburn. This is under the standard of maternal health care in primary health facilities. In cases of pregnant women with preeclampsia, she must be referred to the hospital quickly and precisely to minimize the risk of complications that may cause the mother and infant mortality.<sup>23,24</sup>

### ***Is termination at the Pregnancy age of 31 weeks four days by SC correct?***

Termination of pregnancy is the most effective way to treat preeclampsia.<sup>25</sup> In triplet pregnancies and preeclampsia, the majority of pregnancy terminations (90%) are performed by SC at 34 weeks of pregnancy or <34 weeks if the fetal condition has no life expectancy or compromises the mother's safety. The decision to terminate pregnancy still has to consider several factors, including gestational age, fetal condition, cervical status, and presence of emergency conditions.<sup>26-28</sup> In this case, termination of pregnancy performed at 31 weeks four days by SC was appropriate. It can be concluded that based on these risk factors, midwives should be more alert and critical in providing midwifery care so that severe preeclampsia can be prevented and controlled as early as possible, and delivery can be better planned.

### ***What is the proper midwifery management in the case of triplet pregnancy with severe preeclampsia?***

Early detection of triplet pregnancy cases can be conducted by monitoring SFH, abdominal palpation, checking fetal heart rate, and ultrasound in the first trimester. Meanwhile, detection of preeclampsia can be done by monitoring vital signs, screening for maternal risk factors, including obesity, age <20 years or > 35 years, history of hypertension, diabetes mellitus, multiple pregnancy/triplet and observing somatic symptoms that can be felt by the mother, including persistent headache, blurred vision, heartburn, nausea and vomiting, swelling of the extremities and face. Arterial stiffness checks can also be performed, Doppler examinations of maternal blood vessels

and examination of placental dysfunction, and urine protein monitoring.<sup>11,12,29,30</sup>

Referring to the Regulation of the Ministry of Health of the Republic of Indonesia in 2019 recommends antenatal care at least four times and ultrasound examination if indicated. While the World Health Organization (WHO) is eight times, and ultrasound examination is recommended for less than 24 weeks to estimate pregnancy age, detection of fetal anomalies, and multiple pregnancies and termination by SC. Other standard care are SFH examination, Leopold palpation, heart rate monitoring, fetal movement, nutrition monitoring during pregnancy, administration of iron, folic acid, vitamin A, calcium is recommended 1.5-2 grams per day orally to reduce the risk of preeclampsia, reduce caffeine intake, avoid smoking and alcohol, administer zinc supplementation, monitor blood sugar, hemoglobin, urine, screening for HIV and other infectious diseases.<sup>3,31,32</sup>

Based on the management of multiple pregnancies, midwifery care is focused on preventing preterm labor and monitoring twins' growth. In triplet pregnancy, the need for calories, protein, minerals, vitamins, iron, folic acid increases approximately 150 kcal per day compared to single pregnancies. In multiple pregnancies, the need for iron is 30 mg of folic acid 300 g given after 12 weeks of pregnancy.<sup>33</sup> When the midwife finds out that there are multiple pregnancies, the midwife should collaborate with an obstetric gynecology specialist.<sup>34</sup>

WHO recommends that in severe preeclampsia, hospitalization is recommended for steroid therapy, magnesium sulfate therapy (MgSO<sub>4</sub>), antihypertensive drugs, monitoring of mother and fetus, and observation of emergency on the fetus.<sup>26,27,35</sup> Detection of pregnancy hypertension can also be done by examining the Cold Pressor test to determine the risk of pregnancy hypertension from an early age.<sup>36,37</sup>

In Indonesia, the antenatal care policy is better improved from a minimum of 4 times examinations to 8 times according to WHO recommendations, to minimize complications of triplet pregnancy and severe preeclampsia. Ultrasound examination is recommended to be conducted in each trimester. The mother should have been on ultrasound maximum at pregnancy age less than 24 weeks; this can become one of the standards for antenatal care services in Indonesia.

Psychological treatment is also fundamental to mothers with multiple/triplet pregnancies. The emergence of anxiety and panic reactions requires special assistance from a psychologist to prepare physical and psychological conditions in facing the process of pregnancy and delivery. Also, patients are encouraged to meet with mothers who have experience of pregnancy and childbirth with twins/triplets.<sup>28</sup>

## CONCLUSIONS AND RECOMMENDATION

Handling patients with triplet pregnancy and severe preeclampsia is completed by implementing standard antenatal care, ultrasound examinations in each trimester, hospital care, monitoring the well-being of mothers and fetus, administering antihypertensive drugs, administering MgSO<sub>4</sub> therapy, psychological treatment, and terminating a pregnancy by Caesarean section at 34 weeks gestation or less than if the condition of the fetus does not have life expectancy or threatens the safety of the mother. It is expected that health workers will apply the standard care for triplet pregnancy and severe preeclampsia to minimize complications.

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