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PREGNANCY RISKS IN ADVANCED MATERNAL AGE: A CASE REPORT

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Abstract

Advanced maternal age pregnancy refers to pregnancies occurring in women over the age of 35. Complications during pregnancy are a significant cause of maternal mortality, with maternal age being one of the risk factors. In 2021, the birth rate among women aged 35-39 was 54.2 births per 1,000 women, while for those aged 40-44, it was 12.1 births per 1,000 women. This case report highlights the risks associated with advanced maternal age pregnancy, making it an interesting topic for discussion. The aim of this study is to summarize the history, physical findings, laboratory results, and pregnancy risks associated with advanced maternal age. This is a case report of a 44-year-old multiparous woman who was referred to Dr. Abdoer Rahem General Hospital with hypertension and hyperglycemia since the seventh month of pregnancy. She was diagnosed with a third-degree obstetric anal sphincter injury, preeclampsia with HELLP syndrome, and gestational diabetes. Physical findings included a blood pressure of 197/107 mmHg, a laceration in the perineal region with situational suturing, decreased anal sphincter tone, and a positive pill-rolling test. Laboratory results showed Hb 11.2 g/dL, PLT 39,000, AST 353, ALT 153, HbA1c 7.4, and a random glucose test of 276mg/dL. The risks of pregnancy in advanced maternal age include preeclampsia, gestational diabetes, and perineal lacerations.

Keywords: *Maternal age; preeclampsia; gestational diabetes; perineal laceration.*

INTRODUCTION

Advanced maternal age refers to pregnancies occurring in women over the age of 35. At this stage of life, there is an increased likelihood of various complications during pregnancy, such as preeclampsia, gestational diabetes mellitus, perineal tears, and other related complications (1–3). According to data from the World Health Organization (WHO) in 2016, there were 289,000 maternal deaths worldwide. In Indonesia, the maternal mortality ratio is reported to be 1:65 live births. Complications during pregnancy are among the leading causes of maternal mortality. One significant risk factor contributing to these complications is the age of the mother (4). In 2021, the birth rate among mothers aged 35-39 years was 54.2 births per 1,000 women. Meanwhile, for the age group of 40-44 years, the birth rate was 12.1 per 1,000 women (5). There has been an increase in the number of births among women over the age of 35, particularly in high-income countries (1). This case report will illustrate the risks that may arise in pregnancies among older mothers, making this case particularly interesting for discussion.

CASE REPORT

A 44-year-old female, gravida 3, para 2, abortus 0 (G3P2A0), at 37-38 weeks of gestation, presented to a primary healthcare facility in Raas, Sumenep Regency. Her chief complaints included the passage of cloudy amniotic fluid 6 hours prior, regular uterine contractions (4 contractions in 10 minutes, each lasting 45 seconds), and bilateral lower extremity edema persisting for 3 days. Her medical history was unremarkable for chronic hypertension and pregestational diabetes mellitus. Notably, her obstetric history included a vaginal delivery 9 years prior, which was complicated by macrosomia (weighing 4900 grams).

Initial physical examination revealed severe hypertension (180/90 mmHg), a fundal height of 40 cm, cervical dilation of 8 cm, fetal head at Hodge III, 80% cervical effacement, and absent amniotic fluid. Patellar reflexes were positive. Laboratory investigations indicated leukocytosis (21,800/µL) and severe proteinuria (+4). A working diagnosis was established as G3P2A0, 37-38 weeks of gestation, in the active phase of labor, with severe preeclampsia and gestational diabetes. After risk counseling and considering the estimated travel time of 6 hours, a decision was made to refer her to Dr. Abdoer Rahem General Hospital.

During transit to the harbor, the patient achieved full cervical dilation and delivered spontaneously via the vaginal route without episiotomy. The neonate weighed 4000 grams. The delivery was complicated by a suspected grade 4 perineal laceration with active bleeding. The patient was subsequently stabilized at the primary healthcare facility prior to continuing her referral.

Upon arrival at Dr. Abdoer Rahem General Hospital, the patient was conscious. Vital signs indicated persistent hypertension (197/107 mmHg), a pulse rate of 93 beats per minute, a respiratory rate of 20 breaths per minute, a temperature of 36.8°C, and oxygen saturation of 98%. Gynecological examination confirmed the presence of a perineal laceration that had been previously repaired. Approximately 25 cc of postpartum bleeding was noted. Rectal examination revealed decreased anal sphincter tone, with the rectal serosa remaining intact. The rolling pill test was positive. Laboratory results demonstrated a normal hemoglobin level (11.2 g/dL), leukocytosis (15,680/µL), thrombocytopenia (39,000/µL), elevated liver transaminases (AST 353 U/L, ALT 153 U/L), an HbA1c of 7.4%, and hyperglycemia (random blood glucose level of 276 mg/dL). The final diagnosis was established as postpartum status with a grade 3A perineal laceration, severe preeclampsia, HELLP syndrome, and gestational diabetes.

DISCUSSION

Advanced maternal age is defined as pregnancy occurring in individuals over the age of 35. Age is a significant determinant factor in the risk of complications during the pregnancy and postpartum periods. This is due to the fact that pregnant women over the age of 35 tend to experience a decline in physiological conditions (6).

Relationship Between Maternal Age and Preeclampsia

The primary mechanisms suspected to contribute to the occurrence of preeclampsia include abnormal trophoblastic invasion of uterine blood vessels during placental implantation, disturbances in immunological tolerance between maternal tissue, the placenta, and the fetus, as well as maternal maladaptation to the cardiovascular or inflammatory changes that typically occur in normal pregnancy. Additionally, genetic factors, including predisposition genes and epigenetic influences, also play a role (7).

This case is consistent with that of the patient diagnosed with severe preeclampsia accompanied by HELLP syndrome at the age of 44. The patient presented with a blood pressure reading of 197/107 mmHg, bilateral lower extremity edema, and laboratory findings indicative of severe proteinuria (+4). Additionally, her hemoglobin level was recorded at 11.2 g/dL, alongside thrombocytopenia (39,000/μL) and elevated liver transaminases, specifically aspartate aminotransferase (AST) at 353 U/L and alanine aminotransferase (ALT) at 153 U/L.

Changes in reproductive tissues and organs can occur in women over the age of 35, where these changes may manifest as a decrease in tissue flexibility for adaptation. Preeclampsia arises from damage to the vascular endothelium, leading to a reduction in prostacyclin (PGI2) production. This results in the activation of coagulation processes in the decidual vessels and fibrinolysis, which is subsequently counterbalanced by thrombin and plasmin. The thrombosis that occurs consumes antithrombin III, resulting in fibrin deposits. Platelet activation triggers the release of thromboxane (TXA2) and serotonin, contributing to vasospasm and endothelial damage. The release of these hormones creates a "resistance" effect in the body, leading to vasoconstriction, particularly in small blood vessels, thereby increasing blood pressure. Consequently, vital organs experience oxygen deprivation, which can disrupt the function of other tissues, resulting in symptoms of preeclampsia in pregnant women (8).

Relationship Between Maternal Age and Gestational Diabetes

Maternal age significantly impacts maternal health during pregnancy. One health aspect that requires attention in older pregnant women is gestational diabetes. Pregnant women aged ≥ 35 years have a 3.476-fold higher risk of developing gestational diabetes compared to those under 35 years of age (9).

This case involves gestational diabetes in a 44-year-old mother. It is characterized by the absence of pregestational diabetes mellitus, and laboratory results revealed an HbA1c level of 7.4% and hyperglycemia, with a random blood glucose level of 276 mg/dL.

Gestational diabetes is defined as a glucose tolerance disorder that is first detected in women during pregnancy. This condition occurs in women who have not previously been diagnosed with diabetes but exhibit elevated glucose levels during pregnancy. Women with adequate insulin secretion capacity can manage the increased insulin resistance that occurs during pregnancy by producing more endogenous insulin to maintain blood glucose levels within the normal range. Conversely, women with inadequate pancreatic reserves are unable to produce sufficient insulin to counteract the increased insulin resistance, resulting in glucose intolerance (10,11).

Relationship Between Maternal Age and Perineal Rupture

In women over the age of 35, reproductive function declines compared to optimal reproductive function, thereby increasing the likelihood of postpartum complications, particularly perineal rupture (12).

The perineum is the inferior outlet of the pelvis, shaped like a diamond, and is at risk of injury during vaginal delivery. Perineal laceration refers to the injury that occurs to the skin or muscles located between the vagina and anus. The severity of perineal lacerations varies and is often classified into degrees one through four. More extensive perineal tears are known as third and fourth-degree lacerations, with third-degree lacerations involving the anal sphincter muscles, while

fourth-degree lacerations extend deeper into the rectal layer (13).

In this case, a grade 3A perineal rupture occurred. In addition to the mother's age of 44 years, the pregnant woman also experienced gestational diabetes, which contributed to the development of macrosomia in the fetus.

One of the primary effects of gestational diabetes is macrosomia, which refers to excessive fetal size. In multiparous mothers, the causes of perineal rupture can be associated with the birth weight of the newborn, the fragility of perineal tissue, and less controlled labor processes. The main risk factor contributing to the occurrence of perineal rupture is macrosomia (7,14,15).

CONCLUSION

In this study, it was found that various complications may arise when a woman becomes pregnant at an advanced age. The complications that may occur include preeclampsia, gestational diabetes, and perineal rupture. Therefore, it is crucial to raise awareness and provide appropriate management regarding the risks faced by pregnant women of advanced age, as well as the necessity for adequate medical support during pregnancy and childbirth.

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