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Incidence of Anemia in Pregnant Women with Closer Spacing of Pregnancies and Multiparity: A Case Report

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ABSTRACT

Background: One of the risk factors that can increase the incidence of anemia in pregnant women is the close spacing of pregnancies and multiparity. Closely spaced pregnancies refer to pregnancies that occur within a short time after the previous birth, while multiparity refers to a woman who has given birth to more than one child previously. The combination of these two factors can lead to an increased risk of anemia in pregnant women. This study presents the risk of closely spaced pregnancies and multiparity for the incidence of anemia in pregnant women. **Case presentation:** Mrs. SM, 27 years old pregnant woman, came with complaints of severe dizziness for the last 2 weeks. In addition, patients also complain of weakness, weakness, no energy, and no appetite. The patient said that she was currently pregnant with her 4th child, aged 27-28 weeks, with active fetal movements. Hemoglobin examination 7 mg/dL. **Conclusion:** The patient was diagnosed with anemia in pregnant women with risk factors for close pregnancy spacing and multiparity.

1. Introduction

Anemia in pregnant women is a serious health problem that can affect the welfare of the mother and the development of the fetus. One of the risk factors that can increase the incidence of anemia in pregnant women is the close spacing of pregnancies and multiparity. Closely spaced pregnancies refer to pregnancies that occur within a short time after the previous birth, while multiparity refers to a woman who has given birth to more than one child previously. The combination of these two factors can lead to an increased risk of anemia in pregnant women. Anemia in pregnant women is a condition in which the level of hemoglobin in the blood is below normal limits. Hemoglobin is a protein in red blood cells that plays

an important role in transporting oxygen from the lungs throughout the body, including the fetus in the womb. When a pregnant woman is anemic, the adequate supply of oxygen to the fetus can be disrupted, which can cause various complications, including premature birth, low birth weight, and problems with fetal development.¹⁻⁴

After giving birth, the body needs time to fully recover. If pregnant women do not have enough time for physical recovery and restoration of the required iron levels, the risk of anemia can increase. Each pregnancy results in an additional need for iron to support the growing fetus and placenta. If a pregnant woman has had successive pregnancies that are short apart, she likely will not have enough time to recover

the iron levels used during previous pregnancies. Multiparity may also increase the risk of greater blood loss during delivery. Significant blood loss can cause anemia in pregnant women.⁵⁻⁷ This study presents the risk of closely spaced pregnancies and multiparity for the incidence of anemia in pregnant women.

2. Case Presentation

Mrs. SM, 27 years old, is a pregnant woman who checked her health at the Lina Asep Clinic on November 12th, 2022. The patient came with complaints of severe dizziness for the last 2 weeks. In addition, patients also complain of weakness, weakness, no energy, and no appetite. Actually, all of these complaints have been felt since the beginning of pregnancy, but they were intermittent and then reappeared and got worse in the last 2 weeks. Denied complaints of nausea, vomiting, abdominal pain, and bleeding spots. The patient said that she was currently pregnant with her 4th child, aged 27-28 weeks, with active fetal movements. The patient's previous medical history had anemia, and blood transfusions were carried out at the hospital during a previous pregnancy. Examination of pregnancy at 12 weeks of gestation had an examination of hemoglobin (Hb) levels obtained at 9 mg/dl. Medical history of a new patient taking paracetamol for complaints of unbearable dizziness. The patient had been taking vitamins regularly since the beginning of her pregnancy but did not want to take iron tablets because she complained of constipation every time she took the drug. History of eating during the first trimester: The patient had difficulty eating due to severe nausea and vomiting, but starting from the second trimester until now, she has been able to eat normally. Every day, the patient feels that he has consumed food as he should, namely, the contents of his plate already consist of carbohydrates, protein, fat, and fiber. Consumption of red meat has also been carried out, although not routinely, but patients regularly consume vitamins and milk for pregnancy.

History of first menstruation or menarche at the age of 12 years, menstrual cycles 28-30 days,

menstrual duration 5-7 days, number of pads changed 3-5 times a day. The first day of last menstruation (HPHT) is April 28th, 2022, and the estimated day of birth (HPL) is February 4th, 2023. History of marriage: 1 time in 7 years. History of childbirth: The patient gave birth to all her children through normal delivery. The first child is a girl who is currently 6 years old with a birth weight (BW) of 3100 gr, the second child is a 3-year-old boy with a BW of 3200 gr, and the third child is a girl aged 20 months with a BW 2500 gr. The patient had never used contraception before. The patient works as a housewife, and the husband works as a factory worker.

From the physical examination obtained compos mentis awareness, the general condition of the patient looked mildly ill, blood pressure 100/70 mmHg, pulse 98x/minute, respiration 20x/minute, temperature 36.8°C, weight (BB) 58kg with a pre-pregnancy weight of 50kg, and height (TB) 156cm and mid-upper arm circumference (MUAC) 24 cm. The nutritional status of the patient before pregnancy has a body mass index (BMI) of 20.5 kg/m², which is included in the normal BMI. The increase in weight up to the third trimester is still included in the normal weight gain according to the recommendations of the Institute of Medicine (IOM) 2009. Examination of the general status of the face looked pale, the eyes found anemic conjunctiva, and the sclera was not blue and not icteric. Ears, nose, throat within normal limits, mouth mucosa lips pale, thorax, heart, and lungs within normal limits. Examination of the extremities showed no edema, but the skin was pale. Examination of the obstetrical status showed that the fundal height of the uterus (TFU) was 26.7 cm, the longitudinal position of the back was on the right, the head presentation and the fetal heart rate (FHR) was 145x/minute. A simple blood laboratory examination showed Hb 7 mg/dl, leukocytes 8900 mg/dl, platelets 259,000 mg/dl, and hematocrit 21.2%.

Based on anamnesis physical examination and simple laboratory tests performed, the patient was diagnosed with G4P3A0, 28 weeks pregnant, with moderate anemia. The management given to patients

is in the form of medical and non-medical therapy. For medical therapy, the patient is given oral iron therapy with maltofer tablets 2x a day and 500 mg paracetamol tablets taken if necessary. For pregnancy, vitamins that are routinely consumed, such as folamil genio and Cal95, can be continued. Non-medical in the form of education for diet modification by consuming foods high in iron content such as red meat, beef liver, chicken liver, fish and seafood, and green vegetables such as spinach, tofu, and beans with a varied menu so that patients don't get bored. Patients are advised to eat iron-containing foods with foods high in vitamin C together (such as tomatoes and oranges) to maximize iron absorption by the body. However, they are asked to avoid foods that can inhibit iron absorption, such as bread, tea, and milk. In addition, patients are expected to increase consumption of high-fiber foods and increase consumption of water to prevent constipation. The next step is that the patient is given a referral to the local hospital for further treatment and treatment with an obstetrician.

3. Discussion

Close pregnancy spacing, especially if it is less than one year between one pregnancy and the next, can cause various health problems, including an increased risk of anemia in pregnant women. Each pregnancy can cause physical changes and an additional burden on the mother's body. Pregnancy is a period that drains many resources, including iron. If a pregnant woman doesn't have enough time to fully recover after a previous pregnancy, her body may not have had time to replace the iron that was used. This increases the risk of iron deficiency, which is a major cause of anemia. During pregnancy, the body's need for iron increases because it supports the growth of the fetus and placenta. If a pregnant woman does not have enough iron available in her body when starting a new pregnancy, she will be more prone to anemia due to iron deficiency. Each pregnancy adds to the burden of iron needed by the body. If a pregnant woman has successive pregnancies that are closely spaced, repeated consumption of iron without enough time to

recover can deplete the iron stores in her body. Anemia occurs when iron levels in the body fall below normal levels. If a pregnant woman does not have enough time to restore the iron levels used in previous pregnancies, she will likely have lower iron stores when she starts her next pregnancy, increasing her risk of anemia.⁸⁻¹⁰

Each pregnancy requires additional iron because the body needs to support the growing fetus, placenta, and increased blood volume. Successive pregnancies that are closely spaced can result in the body's repeated use of iron without enough time to replace it. During pregnancy, the body needs more iron to meet the needs of the growing fetus, placenta, and increased blood volume. Therefore, pregnancy naturally depletes the iron resources in the mother's body. The human body has limitations in terms of iron storage. Therefore, it is important to consume enough iron through food and, if needed, supplements. If a pregnant woman does not have enough iron resources available in her diet or if her body cannot replace the iron that has been used between pregnancies, her body's iron stores can be depleted. Any successive pregnancies that are not followed by adequate iron intake can cause a cumulative effect. This means that each subsequent pregnancy begins with a lower level of iron in the body, thereby increasing the risk of anemia. To prevent the risk of anemia in pregnant women with closely spaced pregnancies, it is important to ensure adequate iron intake during pregnancy, both through daily food and supplements prescribed by medical personnel. Regular health monitoring also helps in detecting signs of anemia early so that preventive or management measures can be taken as needed.¹¹⁻¹³

Every pregnancy and childbirth has an impact on the female reproductive system. Multiparity, or giving birth to more than one child beforehand, can increase stress on the uterus and associated organs. As a result, the risk of tearing and bleeding during delivery can be higher. Postpartum hemorrhage, which is bleeding that occurs after delivery, is one of the most common complications associated with a significant risk of blood loss. Mothers who have given birth

several times before may have a higher risk of postpartum hemorrhage due to a decrease in the elasticity of the uterus and surrounding tissues after multiple pregnancies. After giving birth, the body needs time to recover, especially for mothers who have given birth several times before. Repeated pregnancies can prolong recovery time because the body has been subjected to additional stress beforehand, which can hinder the healing process. Multiparity pregnant women often require more stringent monitoring and management during pregnancy and delivery to identify and treat bleeding risks early. This includes birth planning by a medical team trained to deal with complex situations.¹⁴⁻¹⁶

During pregnancy, the mother's body experiences an increase in blood volume to meet the needs of the developing fetus. This increase can reach about 30-50% of the mother's initial blood volume. This is done to ensure an adequate supply of oxygen and nutrients for the developing fetus. Each additional pregnancy will cause a further increase in the mother's blood volume. Therefore, the more pregnancies a woman has, the greater the burden on her cardiovascular system to maintain adequate blood circulation. The mother's cardiovascular system must work harder during pregnancy to circulate this extra blood to the placenta and fetus. These include increased heart rate, cardiac stroke volume, and overall heart work. If the body is not able to adapt to these changes efficiently, then the risk of anemia can increase. The increase in blood volume during pregnancy also means that the body needs more iron to produce the hemoglobin needed to carry oxygen. If the supply of iron is insufficient, the risk of anemia increases because the body may not be able to produce enough hemoglobin to transport oxygen efficiently.^{17,18}

After giving birth, the body needs time to fully recover from the physical effects of previous pregnancy and childbirth. This includes recovery from hormonal changes, restoration of body tissues, and replacement of resources used during previous pregnancies. Pregnancy itself requires many of the body's resources, including iron and other nutrients. If a pregnant

woman doesn't have enough time to recover before experiencing her next pregnancy, her body may still be depleted of the resources it needs. This can result in iron deficiency and increase the risk of anemia during subsequent pregnancies. Each successive pregnancy with limited recovery time can have a cumulative effect, namely the buildup of physical stress on the mother's body. This can hinder the body's ability to fully recover and can increase the risk of health problems such as anemia. It is important for multiparity pregnant women to receive good medical care, careful monitoring, and proper management during pregnancy. This includes regular check-ups and supervision by medical personnel to monitor the health of the mother and fetus and identify early signs of anemia or other health problems.^{19,20}

4. Conclusion

The risk of close pregnancy spacing and multiparity play a role in the incidence of anemia in pregnant women.

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