Case Report: Generalize Pustular Psoriasis Pregnancy (GPPP) in Multiple Pregnancies

Aida Musyarrofah1, Probo Yudha Pratama Putra2*, Dwi Nurwulan Pravitasari3, Yulia Nugrahanitya4

1 Department of Obstetrics and Gynaecology, Faculty of Medicine, University of Muhammadiyah Malang, East Java, Indonesia
2 Faculty of Medicine, University of Muhammadiyah Malang, East Java, Indonesia
3 Departement of Dermato-venerology, Faculty of Medicine, University of Muhammadiyah Malang, East Java, Indonesia
4 General Practitioner at Aisyiah Malang Islamic Hospital, East Java, Indonesia

ABSTRACT

Introduction: General Pustular psoriasis pregnancy (GPPP) is a dermatosis that occurs in pregnancy and requires serious management to reduce the risk of mortality and morbidity in both pregnancy mother and fetus. This disorder is also called impetigo herpetiform.

Case Presentation: We report a woman with multiple pregnancies, G3P2A0 at 21 weeks gestation, with well-defined erythematous macules 5–10 cm in diameter, partly coalescent, with thick scales, and 0.1–0.2 cm diameter pustules and leukocytosis. Patients receive 1 mg of dexamethasone every morning, clobetasol cream 0.05% twice daily, gentamycin 0.1% three times daily, and 3% salicylic acid cream, while to avoid the emergence of preeclampsia aspirin is given at a low dose of 75 mg/day, and we use vipalbumin to treat hypoalbuminemia. The patient gave birth to premature twins by normal delivery.

Conclusion: GPPP is a rare dermatosis with serious risks and consequences for both mother and child. Supportive management is needed to maintain pregnancy and prevent complications.

INTRODUCTION

Changes in skin conditions during pregnancy are due to physiological conditions, specific dermatoses in pregnancy, or other common skin disorders [1]. Pustular psoriasis pregnancy is a dermatosis in pregnancy and must be treated seriously to prevent mortality and morbidity in mother and fetus. This disorder is also called impetigo herpetiform, with a histological finding that has similarities [2,3]. This disease is a severe inflammatory condition characterized by erythematous plaques with pustules and spread throughout the body.

In several cases that have been reported, there are no findings of maternal death. However, the case of stillbirth has been reported [3]. GPPP resolves after delivery but usually more severe in subsequent pregnancies [4], due to its relatively low incidence and few studies reporting that pathogenesis makes it difficult to manage [5]. Multiple pregnancies are a challenge for pregnant women because the condition requires very serious attention considering the risk of pregnancy and complications [6]. In our case report, we report a rare case of multiple pregnancies with generalized pustular psoriasis pregnancy.

CASE PRESENTATION

A 34 years old pregnant woman, multiple pregnancies, patient with third pregnancy and 21-22 weeks of gestation, visited the Obstetrics and...
Gynaecology Department of the Muhammadiyah Malang University Hospital for an obstetrics examination. She complained of a thick and itchy red spot since the first trimester. Other complaints were nausea, vomiting, and abdominal discomfort. Initially, the spots were only on the stomach, then spread to the entire body and extremities except facial, sole of feet and mucosa. She was never experienced a similar complaint and in her previous pregnancy, and any heredity with the same disease.

Investigation
On physical examination, the blood pressure was 140/80 mmHg, pulse: 80x/minute, respiration: 20x/minute, temperature: 36°C. Dermatology examination on the trunk, superior and inferior limbs, a firmly demarcated erythematous macules with a diameter of 5–10 cm was found, partly coalescence, with a thick scale, and pustules with a diameter of 0.1–0.2 cm as shown in Figure 1. The results of ultrasound examination of the first fetus shown BPD (Biparietal diameter) 4.75 cm, AC (Abdominal Circumference) 15.61, EFW (Estimated Fetal Weight) 364 g, while in the second fetus BPD 5.03 cm, AC 14.11, EFW 353 g. Complete blood counts reported leukocytosis with a total of 19,930 and Hypoalbuminemia was discovered. No proteinuria founded in urine examination.

Treatment
In this case, we consulted the patient to the dermatovenerology department. She received 1mg dexamethasone every morning, clobetasol cream 0.05% twice daily, gentamycin 0.1% for infection and given three times daily, and salicylic acid 3% cream, while to avoid the emergence of preeclampsia aspirin was given at a low dose of 75 mg/day regularly, as well as supplementation and systemic therapy when needed. The therapy showed a significant result in 14 days. But the given of steroid its still continue with tempering off dosage after delivery.

Outcomes and Follow up
No abnormalities have been found related to conditions in the fetus. On 21-2-2021 the patient gave birth to twins with normal delivery where the first baby was born with a Birth weight: 1180 gr, body length: 39 cm, head circumference: 25cm, chest circumference: 22cm Upper arm circumference: 7 cm, an Apgar score 4-5, and vital signs HR 150x/min, RR 38x/minute, T: 36.5°C, blood glucose: 61 mg/dl. Whereas the second baby was born with Birth weight: 995 gr, body length: 37 cm head circumference: 25 cm, chest circumference: 20 cm, upper arm circumference: 6 cm, Apgar score 3-4 and vital signs HR 130x/minute, RR 28x/minute, T: 36.5°C, blood glucose: 52 mg/dl. The amniotic condition is clear and the baby is born without any congenital abnormalities, twins are treated by the pediatric team for LBW (Low Birth Weight) management. The lesion was still occur after delivery but it gradually improve and pustular of the lesion also diminish.

DISCUSSION
Multiple pregnancy is a condition that needs attention because of the high risk for both the mother and the fetus, compared to single pregnancies. Mothers with multiple pregnancies need to be closely monitored by professional healthcare, good family support, and maintenance of physical and psychological health.

Fig. 1. Erythematous Macular Lesion Bordered with Thick Squama, and Pustules Were Observed
conditions [7]. Occurrence of GPPP still unclear due to its low incidence and inadequate understanding of its pathophysiology.

In this article, we report the clinical manifestations of second-trimester multiple pregnancies with the generalized appearance of GPPP lesions on the body accompanied by systemic symptoms. GPPP can cause systemic symptoms, increased CRP, and leukocytosis. In this case, it may be necessary to do a culture and histopathology examination. Increased leukocytosis can occur due to secondary infection. In severe cases, the patient can experience erythroderma which can result in fluid and electrolyte loss, as well as maternal infection to sepsis. This can lead to an increase in the appearance of anomalous abnormalities in the fetus, placental insufficiency, and stillbirth [8]. So it is necessary to have routine examinations for the mother and the fetus.

Prevention of preeclampsia needs to be considered because in multiple pregnancies the incidence of preeclampsia is doubled, even in triplet pregnancies increased to nine times [7–10].

Corticosteroids are pharmacologic therapy for pregnancy with pustular psoriasis. Administration of high doses of systemic steroids can provide a significant response. In one case report, pustular psoriasis in pregnancy was successfully treated with cyclosporine administration and several cases reported that cyclosporine administration can also cause the risk of preterm birth and is prohibited from being given to breastfeeding mothers [11].

Systemic corticosteroids are seen to be the best option for treating GPPP. Prednisolone is used daily in doses ranging from 15 to 30 mg in the most common regimen, with a rise to 80 mg daily needed in resistant cases. Prednisolone has a small amount of reported cases of macrosomia, gestational hyperglycemia, and preterm membrane rupture despite not being teratogenic [12]. Administration of corticosteroids and antibiotics can prevent abnormalities and death in the fetus. Steroid administration helps the maturation of the fetus's lungs. The delivery process in this patient requires a cesarean section. During the follow-up, the patient experienced an improvement in his complaints, but in our case, the baby was born prematurely with low birth weight, this could be due to the inflammatory and infectious processes experienced by the mother, causing preterm labor [13].

Ali et al reported the number of maternal deaths has dramatically decreased as a result of steroid and antibiotic therapy. However, the risk of stillbirth and neonatal mortality is still high due to placental insufficiency, early membrane rupture, early labor, and intrauterine growth restriction [13].

Relationship between multiple pregnancies with GPPP and severity of the diseases still not understood because lack of data or case report. Some study reported that GPPP occurs in third semester. However in one of the most recent occurrences, GPPP eruption is described in a 27-year-old woman on postpartum day 1 (third pregnancy) following tubal ligation surgery. This case was published by Vaidya and colleagues. After tapering off of oral prednisone (started at 40 mg/day), her symptoms disappeared. The patient's first pregnancy had a history of GPPP, and her second pregnancy went without problem [14,15]. Mohaghegh et al also reported GPPP in first semester, it can be concluded that GPPP can occurs in every trimester with or without multiple pregnancies [16].

Some studies reported that psoriasis in pregnancy caused by inflammatory response, Dendritic cells and keratinocytes overproduce IL-23 in psoriasis, which prompts Th17 cells in the dermis to produce IL-17A and IL-22. Particularly IL-22 is in charge of keratinocyte hyperproliferation. In maternal serum or umbilical cord blood, psoriasis-specific pro-inflammatory cytokines such IL-1, IL-6, and TNF-alpha are present at significantly elevated levels. This inflammatory cytokines can cause preterm birth [17]. The production of IL-36 subfamily members has been linked to the development of inflammation (mostly psoriasis), but it is still unclear if they have a role in the development of a healthy pregnancy [18]. Inflammotry cytokines also increase in multiple pregnancy in early and mid-trimester that can cause severity of GPPP or risk of the diseases [19].

GPPP is a rare dermatosis that could have devastating effects on both the mother and the fetus. Cooperation between dermatologists and obstetricians is essential to improve the mother's quality of life and contribute to the fetus's . Appropriate treatment and close monitoring of the mother and fetus are vital for the management of patients with GPPP. Particular attention is required for the management of patients with GPPP [20].

CONCLUSION

GPPP is a rare dermatosis with potential and serious consequences for both mother and child. Oral steroids and cyclosporine are the first treatment options, but careful consideration of their advantages and disadvantages is needed. Antibiotics can be given in cases of mild GPPP or early stages before the onset of sepsis, with multiple pregnancies increasing the risk of both mother and child. Supportive management is required in maintaining pregnancy and prevents complications.

ACKNOWLEDGMENT

We thank all the authors of the articles reviewed in this article.
CONFLICT OF INTEREST

The authors state that they have no conflicts of interest.

REFERENCES