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Case Report

Pregnancy With Severe Thrombocytopenia Caused by HELLP Syndrome and Acute Idiopathic Thrombocytopenic Purpura: a Case Report

Ayu Rizky Widowati[1*], Wildan Aulia Firdaus[1], Suheni Ninik Hariyati[1], Djoko Heri Hermanto[2]

[1] Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Brawijaya/Saiful Anwar General Hospital, Malang, East Java, Indonesia
[2] Department of Internal Medicine, Faculty of Medicine, Universitas Brawijaya/Saiful Anwar General Hospital, Malang, East Java, Indonesia

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CORRESPONDING AUTHOR*
Ayu Rizky Widowati
ayurzky19@gmail.com
Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Brawijaya/Saiful Anwar General Hospital, Malang, East Java, Indonesia

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ABSTRACT

Introduction: Thrombocytopenia in pregnancy could result in a wide range of prognosis, with the worst-case being life-threatening. Thrombocytopenia in pregnancy is a rare condition which could result in bleeding, endangering both maternal and foetal components. During pregnancy, thrombocytopenia could be caused by various factors, including idiopathic thrombocytopenic purpura and preeclampsia.

Case Presentation: A 28-year-old pregnant woman, primigravid, gestational age 37-38 weeks old, single pregnancy, presents with fever ongoing for 12 days. A routine blood test returned a thrombocyte count of 11000/mm3. Patient received 8 units of thrombocyte concentrate with no improvement and progressive decline of thrombocyte count. Patient was assessed with severe thrombocytopenia caused by suspected dengue fever, with differential diagnoses being HELLP syndrome and idiopathic thrombocytopenic purpura. Patient was also assessed with severe preeclampsia and severe oligohydramnios. Patient's condition improved after termination of pregnancy by caesarean section, accompanied with gradual return to normal thrombocyte count value.

Conclusion: Thrombocytopenia in pregnancy could be caused by various factors, necessitating the need for a thorough medical evaluation to determine the underlying cause. A multidisciplinary and collaborative approach is highly recommended in managing pregnant women with thrombocytopenia.

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INTRODUCTION

Thrombocytopenia is a condition characterized by a low number of platelets, which can lead to bleeding. Thrombocytopenia is one of the complications that can be found during pregnancy and has a wide range of prognosis from mild to life-threatening. During pregnancy, thrombocytopenia can be caused by a variety of factors, including idiopathic thrombocytopenic purpura and preeclampsia [1].

The differential diagnosis of thrombocytopenia in pregnancy is influenced by the timing of the onset. Identifying the onset of symptoms becomes important information when data on the platelet count during the pre-pregnancy period is not available. Exposures from drug usage, supplements, alcohol, or harmful substances, symptoms that indicate an infection or systemic disease, a family history of thrombocytopenia, a history of thrombosis in the family, and a history of multiple miscarriages should be noted at the initial

examination. Physical examination is very influential in diagnosing and managing thrombocytopenia in pregnancy [2].

Identifying the cause of thrombocytopenia is very important to determine the next steps in management and preventing possible complications [3]. In this case report, we present a case of a 28-year-old pregnant woman, primigravid, presenting with a 12-day fever, accompanied with severe thrombocytopenia due to suspected dengue fever, with other possible causes being HELLP syndrome and idiopathic thrombocytopenic purpura.

CASE PRESENTATION

A 28-year-old pregnant woman presents with a 38.3°C fever since 12 days ago without myalgia, arthralgia, and retroorbital pain. A routine blood check shows a thrombocyte count of 11.000/mm^3. Patient underwent hospital admission in type-C hospital for 4 days for foetal lung maturation and 8 packs of thrombocyte concentrate (TC) transfusion. Patient was referred to type B hospital due to worsening thrombocyte count of 8.000/mm^3, later worsening to 2.000/mm^{3,} accompanied with uterine contractions in type-B hospital, necessitating the need for a type-A hospital referral.

Patient had a history of high blood pressure since 25 weeks of gestation, receiving 5 mg of amlodipine. Patient's father had a history of hypertension and her mother had a history of preeclampsia. Patient was admitted in type-A hospital with blood pressure reading of 177/104 mmHg, uterine contractions 10.1.10, portio opening 1 cm, 50% effacement, Hodge I, intact amniotic sac, head presentation, and positive blood slym. USG shows estimated foetal weight of 2.773 grams and AFI of 3.73 cm. Proteinuria was positive (+2), IgM negative, IgG positive, AST/ALT of 58/56, LDH of 602, and immature platelet fraction of 40.2%. Peripheral blood smear shows marked decrease of platelets with macro platelets.

Initial diagnosis of the patient was primigravida with gestational age 37-38 weeks in parturient observation, febris observation day 12 due to dengue fever grade I, severe preeclampsia, severe thrombocytopenia, transaminitis due to dengue fever with differential of HELLP syndrome, severe oligohydramnios post lung maturation. A consultation with haemato-oncology department results in the diagnosis of severe thrombocytopenia due to related to dengue infection with HELLP syndrome and ITP as differential diagnosis. Consultation with the infection disease department results in possible secondary infection suggested by leucocytosis and clinical worsening of the patient.

Outcomes and Follow-up

In the second day of receiving inpatient care, patient experienced a one-time seizure for 5 minutes and regained consciousness afterwards. Seizure was accompanied by prodromal symptoms, which are headaches, blurred vision, abdominal pain, and vomiting. Patient was planned for pregnancy termination per abdominal cito, but patient's family refused due to bleeding risk from severe thrombocytopenia.

Physical examination shows regular contractions, opening 1 cm, 50% effacement, Hodge I, intact amniotic sac, head presentation, pelvic size normal, blood slym (+), and petechiae in extremities. Patient was planned for pregnancy termination per vaginam due to already entering latent phase of stage I. In the fourth day of inpatient care, the patient shows opening 8 cm, 75% effacement, intact amniotic sac, head presentation, Hodge 2, denominator fontanelle minor occipito posterior, and CTG category 2.

Patient was planned for pregnancy termination per abdominam cito. During the operation, infant was born with birth weight of 3058 grams, Apgar score 1/3/5, bleeding 250 cc with aphaeresis thrombocyte transfusion 436 cc. No vaginal or internal bleeding was observed postoperatively. Three hours postoperatively, the baby passed away due to respiratory failure caused by meconial aspiration syndrome and distributive shock caused by hypoxia. Four days postoperatively, patient experienced shortness of breath, with increased respiratory rate to 24 times a minute on 3 litres of oxygen per minute. Chest X-ray shows pulmonary oedema which improves with diuretics.

Thrombocyte count postoperatively:

- Day 1: 16.000
- Day 2: 41.000
- Day 3: 36.000
- Day 4: 93.000

Patient was discharged at 7 days postoperatively with thrombocyte count of 137.000.

DISCUSSION

Thrombocytopenia in pregnancy could affect the patient in various ways, necessitating the need for thorough monitoring to maximize patient outcome. In this patient, there is no complication from severe thrombocytopenia (spontaneous bleeding, shock, prolonged hemostasis) [4]. Patient fulfils the criteria of HELLP syndrome, marked by hemolysis, increased liver enzymes, and thrombocytopenia [5–7]. LDH: AST ratio of < 22 in this patient suggests HELLP syndrome

instead of TTP and HUS, which are conditions that resemble HELLP syndrome [5,8].

Several conditions manifested in the patient, such as facial and extremity edema, epigastric pain, nausea and vomiting, headache, as well as blurry vision, are also non-specific signs of HELLP syndrome [9–11]. The patient also presented with hypertension, which is associated with HELLP syndrome in 0.2-0.8% of pregnancies [8,9,12,13]. Dengue Haemorrhagic Fever, another condition that presents with thrombocytopenia, was excluded due to negative IgM measurement [14,15].

The diagnosis of ITP in this patient is a per exclusionem diagnosis, which was done if there was no other diagnosis [3]. No other constitutive symptoms were found in this patient, accompanied with macroplatelets in peripheral blood smear and increased IPF, leading to the final diagnosis of ITP [16,17]. ITP was managed with pulse methylprednisolone 3 x 125 mg for 3 days and TC transfusion 1 unit/10kgBW/day, with strict monitoring. The increase of thrombocyte count in this patient seems to be primarily affected by pregnancy termination due to the presence of HELLP syndrome [18,19]. An eclamptic seizure in this patient could be differentiated from dengue encephalitis seizure by initial diagnosis of preeclampsia and the presence of prodromal symptoms [20–22].

CONCLUSION

Severe thrombocytopenia in pregnant women is a unique case which needs specific considerations in managing each individual on a case-by-case basis considering the clinically relevant factors. A multidisciplinary approach from a team of obstetrician, haematologist, anaesthesiologist, and neonatologist is needed for facilitating precise management. A thorough understanding of treatment options, mode of delivery, preventive steps, and risks involved needs to be communicated clearly to the patient.

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CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

REFERENCES

1. Adams TM, Allaf MB, Vintzileos AM (2013) Maternal Thrombocytopenia in Pregnancy. Clin Lab Med. 33(2):327–41.
2. Pishko AM, Levine LD, Cines DB (2020) Thrombocytopenia in pregnancy: Diagnosis and approach to management. Blood Rev. 40:100638.
3. Reese JA, Peck JD, Deschamps DR, McIntosh JJ, Knudtson EJ, Terrell DR, et al. (2018) Platelet Counts during Pregnancy. New England Journal of Medicine. 379(1):32–43.
4. Ciobanu AM, Colibaba S, Cimpoca B, Peltecu G, Panaitescu AM (2016) Thrombocytopenia in Pregnancy. Maedica (Bucur). 11(1):55–60.
5. Naqvi S, Hassnain S, Yousaf A, Muhammad S, Cabrera D. (2022) Postpartum HELLP syndrome complicated with large subcapsular liver hematoma. Baylor University Medical Center Proceedings. 35(5):709–11.
6. Lutfi Komariah A, Sunanto, Iis Hanifah (2023) The Relationship between Preeclampsia and Premature Incidence Rates. Health and Technology Journal (HTechJ). 1(1):57–62.
7. Arslan E (2022) COVID-19: A Cause of HELLP Syndrome? A Case Report. Int J Womens Health. 14:617–23.
8. Martin JN, Tucker JM (2022) Maternal morbidity and mortality in pregnant/postpartum women with suspected HELLP syndrome identifiable as probable thrombotic thrombocytopenic purpura or atypical hemolytic uremic syndrome by high LDH to AST ratio. International Journal of Gynecology & Obstetrics. 159(3):870–4.
9. Koenen S V., Huisjes AJM, Dings J, van der Graaf Y, Visser GHA, Bruinse HW (2006) Is there a diurnal pattern in the clinical symptoms of HELLP syndrome? The Journal of Maternal-Fetal & Neonatal Medicine. 19(2):93–9.
10. Tou L, Wang A, Siddiqui T, Mamone M (2022) Overlapping Presentations of HELLP Syndrome and COVID-19: A Case Report. Eur J Case Rep Intern Med. 9(9):003540
11. Chauvet E, Youssef M, Boukhari R, El Guindi W, Carles G (2009) Pseudo-HELLP syndrome par carence en vitamine B12 : à propos de sept cas. J Gynecol Obstet Biol Reprod (Paris). 38(3):226–30.
12. Huang H, Liu B, Gao X, Wang Y (2022) Clinical Classification, Pregnancy Outcomes and Risk Factors Analysis of Severe Preeclampsia Complicated With HELLP Syndrome. Front Surg. Volume 9.
13. Malmström O, Morken N (2018) HELLP syndrome, risk factors in first and second

pregnancy: a population-based cohort study. Acta Obstet Gynecol Scand. 97(6):709–16.
14. Merizka E, Alifah AL, Handayani SW, Widiantari AD, Murtiani F (2023) The Relationship of Fever Onset with NS1 Examination Results, IgM, and IgG in Dengue Hemorrhagic Fever Patients. Jurnal Ilmiah Kedokteran Wijaya Kusuma. 12(2):107.
15. Handayani Y, Hakim AR (2023) Classification of Naive Bayes Algorithm on Dengue Hemorrhagic Fever and Typhoid Fever Based on Hematology Results. Journal of Applied Intelligent System. 8(1):94–9.
16. Saidah F, Sjakti HA (2018) Peran Pemeriksaan Immature Platelet Fraction dalam Imun Trombositopenia. Sari Pediatri. 20(3):190.
17. Mysik OL, Zainulina MS (2021) Current approaches to the use of antiplatelet and anticoagulant drugs in pregnant women with thrombocytopenia caused by hemostasis activation. Obstetrics, Gynecology and Reproduction. 15(2):132–42.
18. Fadiloglu E, Unal C, Tanacan A, Portakal O, Beksac MS (2020) 5 Years' Experience of a Tertiary Center with Thrombocytopenic Pregnancies: Gestational Thrombocytopenia, Idiopathic Thrombocytopenic Purpura and Hypertensive Disorders of Pregnancy. Geburtshilfe Frauenheilkd. 80(1):76–83.
19. Singh A, Solanki A (2014) High Dose Methylprednisolone: Effective in Pregnancy Associated Post-splenectomy Refractory Chronic Immune Thrombocytopenic Purpura. Nepal Journal of Obstetrics and Gynaecology. 9(1):64–6.
20. Mohandoss V, Kumar V, Vyas S, Saini AG (2021) Dengue Encephalitis: Don't Forget to List It when the Brain Is Hit. Journal of Pediatric Neurology. 19(03):217–20.
21. Dudipala S, Mandapuram P, Chinma L (2020) Dengue encephalitis in children "Not an uncommon entity but is rarely thought of": A case report. J Pediatr Neurosci. 15(3):301.
22. Sonawane V, Kotrashetti V, Bainade K, Daiya V (2022) Dengue encephalitis in a 3-month-old para-neonate: a rare presentation of severe dengue. Int J Contemp Pediatrics. 9(2):208.