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Management of Dengue Fever and Morbidly Obese in Pregnancy after C-Section

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ABSTRACT

Introduction: Dengue is endemic to the Southeastern geographical area of Asia (SEA), spreading through the mosquito vector Aedes aegypti. There is also evidence to suggest a higher percentage of severe dengue infections happening to pregnant women than non-pregnant women.
Case Report: The patient was 28 years old, weight 120 kg, height 162 cm, admitted to the Emergency Department (ED) of Hasan Sadikin Hospital (RSHS) with dyspnea in pregnancy. Anamnesis obtained that the patient complained of fever since 5 days ago, the last 1 day felt increasing shortness of breath. Intraoperatively lasted 3 hours with bleeding 4300 ml. The patient was admitted to the ICU for 5 days of treatment and was extubated on the 4th day
Conclusion: Dengue Fever with morbid obese in pregnancy is a threat of morbidity and mortality. The main pathophysiology that occurs is changes in hematological and respiratory physiology in pregnancy which will aggravate the patient's condition. The principle of therapeutic management in the ICU lies in optimization, stabilization and evacuation of fluids and handling mechanical ventilation

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INTRODUCTION

Dengue is endemic to the Southeastern geographical area of Asia (SEA), spreading through the mosquito vector Aedes aegypti.[1] The 15–49-year-old age group had the most significant incidence of cases, with DALY shifting from children to this age group as well. Pregnancies occur in this age group, and with the incidence being higher in women, it is crucial to have a clear understanding of the physiological changes in pregnancy and the natural progression of dengue to appreciate the potential complications of dengue in pregnancy. There is also evidence to suggest a higher percentage of severe dengue infections happening to pregnant women than non-pregnant women. Many pregnant women with dengue infection may progress to have DSS, and the mortality rate triples in this scenario. The diagnosis of DHF requires a person to have a fever, hemorrhagic manifestation, thrombocytopenia, and evidence of plasma leakage.[2]

Data shows in 2007 the prevalence of obese adult women in Indonesia is 13.9% and continues to increase, namely 15.5% in 2010 and 32.9% in 2013. RCOG defines obesity in pregnancy as BMI more than 30 kg/m^2 at the first antenatal visit.[3] Morbid obesity adversely affects respiratory physiology, leading to reduced lung volumes, decreased lung compliance, ventilation perfusion mismatch, sleep-disordered breathing and the impairment of ventilatory control, neurohormonal and neuromodulators of breathing.[4]

Case Report

The patient was 28 years old, weight 120 kg, height 162 cm, admitted to the Emergency Department (ED) of Hasan Sadikin Hospital (RSHS) with dyspnea in pregnancy. Anamnesis obtained that the patient complained

of fever since 5 days ago, the last 1 day felt increasing shortness of breath. Lab results from the referring hospital with anti-dengue IgG IgM + results. Preoperative conditions obtained respiration 28-32x / min with saturation 96% SM 6 lpm. From the preoperative laboratory, the platelet value was 65,000; INR 1.41. Echo examination obtained normal all chamber: coencentric LVH, normal LV systolic function (EF 55-60%). The patient was terminated by cesarean section under general anesthesia.

Intraoperatively lasted 3 hours with bleeding 4300cc, crystalloid input 1500cc, colloid 500cc, PRC 4 units, FFP 3 units, Platelets 3 units. TDS during intraoperative was 90 - 141 mmHg without support medication. Postoperatively, the first day of treatment in the ICU with midazolam sedation and fentanyl analgesics obtained RR 19-25x / min PSIMV 12 PEEP 8 PS 22 FiO2 90% achieved TV 431-577 MV 10.1 SpO2 94%. Postoperative laboratory obtained Hb 9.6 Ht 27.9 L 15,010 T 60,000; PT 20.6 INR 1.46 APTT 29.40; pH 7.257 pCO2 62.2 pO2 80.2 SaO2 93.1. Thorax examination showed cardiomegaly accompanied by pulmonary edema and basal rales of both lung fields, furosemide drip therapy 20mg / hour was given (Fig. 1).

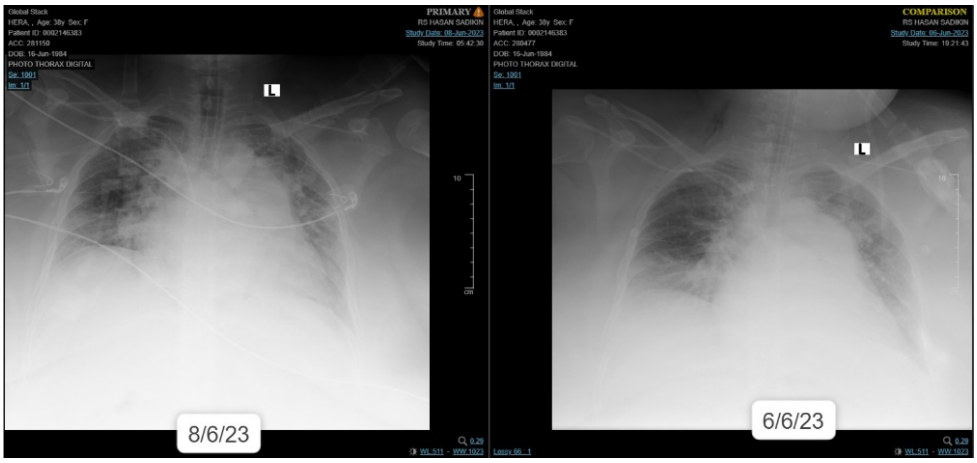

Figure 1. Thorax examination

The patient was admitted to the ICU for 5 days of treatment and was extubated on the 4th day. On the 2nd day of treatment, reactive anti-dengue IgG titer and non-reactive anti-dengue IgM were rechecked. During the ICU stay, serial platelet counts were 30,000 - 63,000; INR 1.46 - 1.99; Fibrinogen 264; D-dimer 2.86. On examination, petechiae and ecchymosis purpura were found, but no other signs of bleeding were found. During treatment in the ICU, she received 5 units of FFP transfusion and furosemide drip 10-40 units/hour. The patient was transferred from ICU to HCU on the 5th day of treatment.

DISCUSSION

In this case, a 28-year-old female patient was admitted to the ICU with a diagnosis of Dengue Fever + Morbid obese, P3A0 post partus prematurus SC a.i failed conservative treatment aggravated with acute pulmonary edema. Thrombocytopenia can occur in dengue and a fall in platelet counts below <80.000 may suggest plasma leakage. Respiratory changes in infected mother : The fall in oncotic pressure and pulmonary resistance causes vulnerability to developing Acute Pulmonary Oedema; Additionally, the respiratory rate might increase.[2,5]

Patient has BMI 45,7 kg/m^2. RCOG defines obesity in pregnancy as body mass index (BMI) >30 kg/m2 at the first antenatal visit. Morbid obesity adversely affects respiratory physiology, leading to reduced lung volumes, decreased lung compliance, ventilation perfusion mismatch, sleep-disordered breathing and the impairment of ventilatory control, neurohormonal and neuromodulators of breathing[.3,4]

CONCLUSION

Dengue Fever with morbid obese in pregnancy is a threat of morbidity and mortality. The main pathophysiology that occurs is changes in hematological and respiratory physiology in pregnancy which will

aggravate the patient's condition. The principle of therapeutic management in the ICU lies in optimization, stabilization and evacuation of fluids and handling mechanical ventilation

DECLARATIONS
This text is already approved by the Ethics Committee of Hasan Sadikin General Hospital.

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The Authors agree to publication in Journal of Society Medicine.

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All authors contribute equally, from the conception, study, execution, analysis and interpretation of the data. Authors agreed to publish this work, and agreed to be accountable for the work.

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