Management Of Pregnancy With HELLP Syndrome, Eclampsia, And Intracranial Bleeding In Intensive Care Unit Emergency Department In Developing Country

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Introduction

In developing countries, women are seven times more likely to develop preeclampsia than a woman in a developed country. From 10-25% of these cases will result in maternal death (1). At our hospital, we have often met preeclampsia and eclampsia cases.

From 2012 to 2015, there were several cases of eclampsia, HELLP Syndrome, Intracranial Bleeding, Intracranial bleeding and HELLP syndrome handled at Dr. Soetomo General Hospital Surabaya Resuscitation Room. Maternal mortality rate was 4.2% with 50% of eclampsia happened ante partum. (2)

Year	Eclampsia	HELLP Syndrome	Intracranial Bleeding/ Cerebral Edema	Intracranial Bleeding & HELLP Syndrome	Resuscitation Room Patients
2015	48 (1.2 %)	5 (0.1 %)	3 (0.07 %)	2 (0.05 %)	3826
2014	52 (1.2 %)	5 (0.1 %)	4 (0.09 %)	4 (0.09 %)	4204
2013	64 (1.6 %)	8 (0.2 %)	1 (0.02 %)	1 (0.02 %)	3996
2012	61 (1.6 %)	6 (1.6 %)	0 (0.1 %)	1 (0.02 %)	3801

Table 1. Patients recapitulation for 2012 - 2015

Case Report

A 34 years old woman, multigravida, with 37-38 weeks of gestational was diagnosed with eclampsia, HELLP syndrome, and intracranial haemorrhage.

Preoperative Condition in Resuscitation Room

Clinical Manifestation :

- Dyspnea
- Hypertension
- Blood Pressure 220/110 mmHg
- GCS of 4-5-6
- Headache
- Lateralization
- Epigastric pain
- Nausea
- Vomiting
- Pupil were anisocore
- Speech disorder
- Seizure
- Facial and extremities edema
- Fetal Heart rate 156x/min

Laboratories Finding :

- Hb/Hct/Leu/Plt : 13,5/38,5/17,5/37
- PPT : 72,4/27,7
- APTT : 14,6/1,9
- LDH : 2444
- AST/ALT/Alb : 351,6/133/3,2
- D Bil/T Bil : 1,3/3,8
- BUN/Cr : 12,7/0,8
- Na/K/Cl : 143/3,2/112
- Glucose : 136,9
- Blood urine : +3
- Protein urine : +3

Therapies in Resuscitation Room

- Patient was intubated and stabilized
- Gived magnesium sulfate

Imaging Modalities :

Figure 1:

- Chest X-Ray within normal limit
- CT-Scan shows an estimated of 50ml intracranial bleeding on right parietooccipital, subdural haematoma, severe brain edema and 0.93cm midline shift to the left

Operating Theater

Two Staged Surgery

C-Section (07.00 - 07.45)

- Apgar Score 1-3-5
- ♂ 2.5Kg

Craniotomy (07.45 - 15.45)

- Duramater was bulging & redish
- ICH volume < 100 ml
- Severe brain edema

Intensive Care Unit

Problems :

- VAP Potential (Mechanical ventilation for 9 days)
- Hypertension
- High risk of Seizure
- Trombocytopenia
- Anemia
- Hypokalemia

Handling :

- VAP Prevention bundle
- Breathing Control
- Negative fluid balance for 72 hours monitor
- Antihypertention
- Magnesium Sulfate
- TC Transfusion
- PRC Transfusion
- Potassium Correction

Figure 2 :

- 6 hours post operative CT-Scan show that the bleeding were no longer noticed.
- Chest X Ray after 9 days mechanically ventilated before extubated was within normal limit.

LDH Levels

Hemoglobin & Platelets Levels

Graphic 1. LDH, Hemoglobin and Platelet Levels

AST & ALT Levels

Potassium Levels

Graphic 2. AST, ALT and Potassium Levels

Discussion

HELLP Syndrome diagnosis were confirmed by increased levels of high lactate dehydrogenase, high bilirubin levels, high AST/ALT levels and thrombocytopenia. HELPP Syndrome with intracranial bleeding is not often find (5). General anesthesia was the right choice for this patient due to the increased cerebral pressure and the potential of bleeding disorder. Brain edema is the leading cause of death by 20% of preeclampsia and eclampsia. Mechanical ventilation with a PaCO2 control on 35-40mmHg and the administration of mannitol was aimed to decrease further brain swelling and increase cerebral perfusion (7,8).

Morphine was selected as post-operative analgetics due to the minimal side effect and its "reported" effect on lowering the seizure threshold (6). The patient was given diltiazem as antihypertension with target therapy on systole of 140-160 and diastole of 90-100. This antihypertension therapy aimed to decrease the risk of cerebral hemorrhage and seizure (4). Anemia and thrombocytopenia were corrected by packed red cell and thrombocytes concentrate. After third day of treatment, the hemoglobin levels stabilized above 10 g/dL. On the fourth day of treatment, the patient experiencing flatulence and abdomen distension. This occurrence was because the potassium fall below 3,5 and then potassium was added. The enteral nutrition was changed to parenteral until minimal gastric retention. Mechanical ventilation was used until 9 days of treatment and VAP bundle was used as a standard protocol. After 10 days of treatment in ICU, the patient was transferred to the neurological ward with left lateralization as the remaining symptoms.

Conclusion

Fast responses time from the emergency room and operating theatres, followed by good intensive care unit management supported the good outcome. Good team work and communication from anesthesiologist, obstetricians, surgeons and intensivist brought success in saving mother from eclampsia, even with a complicated cases with intracranial bleeding.

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