

## Case Report

# Status Eclampticus–Rare Pregnancy Complication: Case Report

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## Abstract

**Objective:** Although eclampsia is relatively rare complication of human pregnancy, it still a major problem in obstetrics and a leading cause of maternal and fetal mortality and morbidity. The exact mechanism of eclamptic convulsions has not been fully understood. Appropriate and early intervention can lead to prevent serious maternal and fetal complications or even death.

**Case report:** This report describes the case of pregnant women with status eclampticus defined as eclamptic seizures occurring at very short intervals or without intervals.

**Discussion and conclusions:** Eclampsia, a serious life-threatening human pregnancy complication is reversible only on condition proper promptly multidisciplinary team management with aggressive therapy in intensive care unit. Magnesium sulphate is currently the drug of choice for the control, prevention and treatment of eclamptic seizures. It is effective even in status eclampticus. Treatment of convulsions and correction of blood pressure as well as timely delivery in preeclamptic women and close supervision even for several days after childbirth are keys to prevent eclamptic seizures and its devastating sequelae.

**Keywords:** Severe preeclampsia; Eclampsia; Status eclampticus; Intensive care; Convulsions; Seizure

## Introduction

Eclampsia, defined as generalized tonic-clonic convulsions during pregnancy, intrapartum and postpartum period, is one of the most severe form of preeclampsia and life-threatening complication of human pregnancy [1-4]. Eclamptic women have have 3-to 25-fold increased risk of maternal and foetal complications and poor pregnancy outcomes [5-9] 12% of all maternal deaths throughout the world is directly caused by eclampsia and its complications [3,5,10-13]. The exact mechanism of eclamptic convulsions has not been fully understood [14]. Early diagnosis and immediately treatment of preeclampsia can avoid eclampsia and its devastating complications [14,15]. Status eclampticus is defined as seizures occurring at very short intervals or generally when convulsions continue unabated [16]. This report describes the case of women with status eclampticus during pregnancy.

## Case Presentation

A 20-year-old primigravida at 32<sup>+3</sup> week gestation was referred to the tertiary care hospital, namely the Department of Obstetrics and Perinatology of the Medical University Hospital in Lublin. This was emergency admission as the patient was unconscious with history of acute worsening and generalized oedema. Patient was intubated because of status eclampticus with generalized tonic-

clonic convulsions. She had multiple seizures outside the hospital. Her tongue was bitten several times by a violent action of the jaws. This patient had had only one appointment with a gynaecologists at 6 weeks of her pregnancy. She had convulsions for three hours. On admission her blood pressure was 160/120 mmHg. She had proteinuria. This pregnant woman had been complaining of persistent occipital and frontal headaches, altered mental status, vomiting and visual disturbances such as blurred and double vision for 2 days before admission. Intravenous access was secured and laboratory tests were obtained. The patient was immediately transported to the operating room. At the same time intravenous Magnesium sulphate was given to cease convulsions and to prevent next seizures. The initial 4 g loading dose of Magnesium sulphate diluted in 100 ml was administered intravenously and followed by a maintenance of 1 g Magnesium Sulfate per one hour. This infusion was continued for 24 hours after the cesarean section. The urgent lower segment caesarean section under general anesthesia was carried out resulting in alive born son. At birth the boy weighed 1950 g. Apgar scores were 1, 1, 5 and 7 points at 1<sup>st</sup>, 3<sup>rd</sup>, 5<sup>th</sup> and 10<sup>th</sup> minutes of his life respectively. On admission to hospital her haemoglobin level was 9 g/dL with haematocrit of 27%, total leukocyte count of 25 540 in  $\mu$ L and platelet count 612 000 in  $\mu$ L. The creatinine serum, uric acid and urea levels were 1.3 mg/dL, 14.8 mg/dL and 57.6 mg/dL respectively. The transaminases were normal. The total protein level was 5.9 g/dl, bilirubin 0.3 mg/dL. Urine output volume (ml/day) of 900, 3900, 4650 and 3300 were observed on the following days respectively after the C-section. Twenty-four-hour urine collection for total daily urinary protein excretion revealed proteinuria with total daily protein urinary loss of 1.791 g, 4.368 g, 1.534 g, 1.254 g on the first, second, third and fourth day after the C-section. Before admission, the patient had undergone the cross sectional imaging with computed tomography in another hospital. The CT revealed the normal structure of the brain without any perceptible changes or cerebral vascular abnormalities, ventricular system of the brain without evidence of displacement, not expanded and preserved cortical grooves on the convexity of the brain. The internal auditory

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canals were symmetrical and not dilated. The close surveillance of the patient was implemented. Monitoring included maternal assessment (systolic and diastolic blood pressure, pulse, breathing, urine output and others) and possible symptoms of Magnesium toxicity. Maternal vital signs, respiration and reflexes were monitored every 15 minutes. Patellar reflexes were present and normal. Her post-caesarean-section blood pressure was as high as 180/120 mmHg. The patient had anuria and bilateral crackles at the lung bases. The risk of pulmonary oedema at the first hour after the C-section was the indication of intravenous administration of Furosemide. A half of an ampoule of Furosemide was given twice. Antihypertensive medications to lower her blood pressure were also administered. Hydralazine was given IV with 5-mg-initial dose and was followed by a dose of 5 mg every 15 - 20 minutes until a satisfactory response was reached. The woman was under close continuous observation for 48 hours after delivery. Our priority was to stabilize the mother's condition. Urine output increased to 25 ml/1h. The maternal condition was stable, the patient was unconscious but without any convulsions. She regained consciousness and became violent 10 hours after delivery by caesarean section. After next two hours she was orientated to place and time. She was started on 500 mg of oral Methyl dopa every 6 hours. The first dose of 2 g/24 h was used and for next three days the dose was reduced to 1 g/24 h. This treatment was continued for 7 days. It was observed continuous gradual progressive improvement in the patient's condition and in maternal laboratory tests. The patient was discharged after 8 days without any drugs.

## Discussion and Conclusions

Routine close prenatal care of pregnant women during the antepartum, intrapartum and postpartum period could result in early detection of preeclampsia followed by appropriate treatment, timely delivery and prevention of eclamptic seizure in order to avoid very serious maternal and neonatal complications such as preterm placental abruption, thrombocytopenia, Disseminated Intravascular Coagulation (DIC), pulmonary oedema, HELLP syndrome, renal and liver failure, intrauterine fetal death, generalized eclamptic seizures and even maternal death [2,5,11,12,14,15]. Eclampsia is always a life threatening condition and management decision concerning patients with preeclampsia must be individualized. Patients with preeclampsia or severe preeclampsia should be referred to a tertiary perinatal care centre and emergency department [14,15]. Comprehensive monitoring with assessment of patients is always required to improve obstetric outcomes for mothers and babies. Immediate labour and multidisciplinary team management with aggressive therapy in emergency department by a team approach obstetrician and specialist of intensive care is the only successful treatment for eclampsia and is indicated for all patients diagnosed with severe preeclampsia and uncontrolled hypertension, HELLP syndrome or eclamptic seizures [2-4,14]. A 30% of eclamptic seizures occur before the admission to the hospital [4]. It can be especially dangerous. Eclampsia is reversible if adequate diagnosis is promptly made and emergency intensive treatment is immediately administered [4]. Delay in the treatment is associated with higher risk maternal and foetal mortality [3,4]. Magnesium sulphate is more effective than other anticonvulsant agents in the treatment of eclamptic seizures [2,17-19] and in prevention of the convulsions in preeclamptic or eclamptic women. Magnesium sulphate should be given intravenously in loading dose of 4 g - 6 g diluted in 100 mL of IV fluid administered over 15 to 20 minutes. After a loading dose infusion of 1 or 2g Magnesium sulphate /hr is recommended for 24 hrs or even 48 hrs following

childbirth or from the last convulsions [2,17-19]. Our patients with status eclampticus affirms that in spite of the recommended infusion dose between 1 and 2 grams of Magnesium sulphate/hr, in most cases of severe preeclampsia after the loading dose 4 g, dose of 1 g per hour in the infusion pump is effective, also in patients with status eclampticus [3,4,17-19]. It must be emphasized that the overdose may be dangerous and organ failure may occur [7]. Careful attention should be always paid to the comprehensive and close monitoring of the patient's vital signs such as heart rate, blood pressure, respiratory rate, reflexes, hourly urine output and laboratory tests.

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