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Original Article

Epidemiological Profile and Postpartum Outcome for Severe Preeclamptic Patients

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ABSTRACT

Background and objective. Preeclampsia is a multisystemic disorder, which involves the placenta, liver, blood, neurological and cardiovascular systems. It is one of the leading causes of maternal and fetal morbidity and mortality. This study aimed at describing the characteristic features for mothers who had severe preeclampsia and to know the complications during puerperium. **Methods**. A prospective study conducted over a period from February 2009 up to November 2009 involving 100 pre-eclampsia patients admitted and delivered in Aljalaa Maternity Hospital, Tripoli, Libya. **Results.** The patients mean age was 33.3 +5.9 years. The mean gestational age at admission time was 36.8+3.2 weeks and 64% of them were term. 58% of the patients with severe preeclampsia had a positive family history of chronic hypertension whereas 42% of patients had a previous history of preeclampsia. 40% of patients were primigravida. The mean systolic blood pressure at admission was 164+15.4 mmHg and the mean diastolic pressure was 113+6 mmHg. The common symptoms were headache, abdominal pain, and blurred vision (54%, 37%, and 31% respectively), whereas 9% of the patients presented with the eclamptic fit. The pregnancy in 66% patients ended by caesarean section, 78% of them were emergency caesarean section. The birth weight of 13% of new-borns was less than 1500 grams. Furthermore, 10% diagnosed with intrauterine fetal death (IUFD) antenatally and 9% died after admission to nursery intensive care unit post-delivery. **Conclusion.** the effects of hypertensive disorder associated with pregnancy could be prevented by close antenatal care particularly for whose had previous history of preeclampsia. In addition; early recognition and adequate treatment, and timely delivery can prevent preeclampsia and will improve maternal and neonatal outcomes.

Keywords. Hypertension, Pregnancy, Preeclampsia.

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INTRODUCTION

Hypertensive disorders of pregnancy, includes pre-existing and gestational hypertension, preeclampsia, and eclampsia, complicates up to 10% of pregnancies and represents a significant cause of maternal and perinatal morbidity and mortality [1]. Chronic hypertension defined as either hypertension that discovered before pregnancy or that develops during

the first 20 weeks of pregnancy and did not resolve by 12 weeks postpartum [2]. Gestational hypertension defined as an elevation in blood pressure after 20 weeks gestation without proteinuria [3]. The diagnosis requires an elevation of blood pressure (systolic ⩾ 140 or diastolic ⩾ 90 mm Hg, the latter measured using the fifth Korotkoff sound), in previously normotensive patient. No protein in the urine, and no manifestations of preeclampsia and eclampsia. The prevalence of hypertension in reproductive-aged women estimated to be 7.7% [4]. The incidence of preeclampsia [PE] estimated to occur in 3–5% of pregnancies. In Brazil, a systematic review identified an incidence of 1.5% for PE and 0.6% for eclampsia [5]. In general, pregnant women with signs or symptoms of severe PE have a decompensated disease that may rapidly progress to maternal and perinatal morbidity and mortality. Proteinuria levels should not be considered criteria of severity in PE [6, 7]. In the new criteria, The American College of Obstetricians and Gynecologists (ACOG) recommends diagnosing PE in the absence of proteinuria when any of several abnormalities are present: thrombocytopenia (platelet count < 100,000/μL), elevated levels of liver transaminases twice or more, elevated serum creatinine > 1.1 mg/dl, pulmonary oedema, or new-onset cerebral or visual disturbances [4]. Serum uric acid increases early in PE and has a positive correlation with placental bed atheromatosis injuries, lower birth weight infants, degree of hemoconcentration, and the severity of glomerular endotheliosis. Uric acid levels > 4.5 mg/dL are abnormal in gestation [8,9,10]. Hadikusumo Harsono AA et al (11) demonstrated that the convulsions can vary depending on whether the woman is in the antepartum (38–53%), intrapartum (18–36%), or postpartum (11–44%) period.

METHODS

This is a longitudinal descriptive prospective study conducted among 100 patients admitted to Aljalaa maternity and gynecological hospital during the period from Feb to Oct 2009, and was ethically approved by the research committee of Faculty of Medicine, University of Tripoli, Tripoli, Libya.

The diagnostic criteria considered for severe preeclampsia included at least one of the following; systolic blood pressure greater than 160 mmHg or diastolic blood pressure greater than 110 mmHg on two occasions six/four hours apart with the patient at bed rest (manual measurement). In addition; proteinuria ⩾ 3.0g/24 hours or > 2+ dipstick, serum creatinine >1.2 mg/dl, elevated alanine transaminase (ALT) and aspartate transaminase (AST), persistent headache or visual disturbance, and persistent epigastric pain. The collected data was presented as mean, and percentage using SPSS software.

RESULTS

Most of the patients (97%) were Libyan with the main age ranged between 19 and 44 years (mean age is 33.3 +5.9 years). About 54% of the patients aged between 30-40 years, 31% aged less than 30 years, and the least percentage was 15% for the age 40 years and more (figure 1).

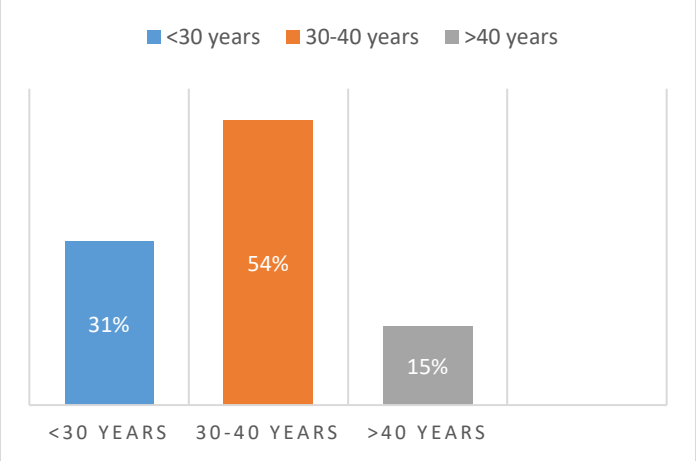

Figure 1. Distribution of patients with severe preeclampsia by age

In our cohort, gravidity ranged between 1 and 11 with 40 % of the patients being primigravida. The mean gravidity was 3+2.4 pregnancies, the mean parity was 1.7+2.2 and the mean abortion was 0±0.6. Furthermore, we found that 42% of patients had previous history of preeclampsia, whereas 58% of the patients with severe

preeclampsia had a positive family history of chronic hypertension.

The current finding documented that, at the time of admission, the gestational age was between 28 and 41 gestational weeks (mean gestational age was 36.8+3.2 weeks). Approximately, 64% were term and 36% were preterm. Clinically, majority of patients presented with headache (54%); whereas, epigastric pain, blurred vision, exaggerated ankle reflex, and convulsion occurred at a rate of 37%, 34%, 31%, and 9%, respectively (figure 2).

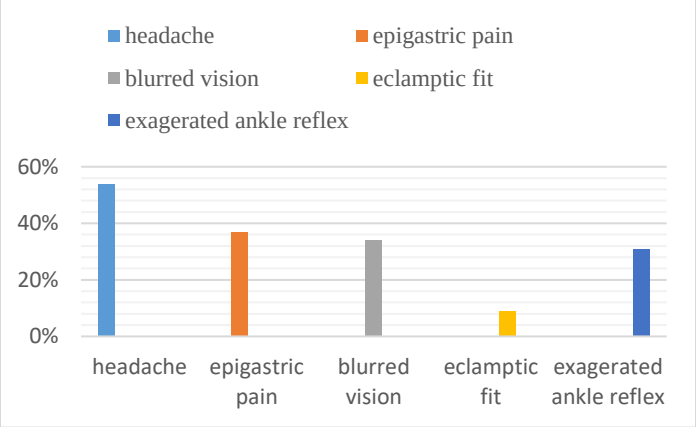

Figure 2. Distribution of patients with severe preeclampsia by symptoms and signs

At the time of admission, the manual sphygmomanometer measurement of the systolic blood pressure ranged between 140 and 220 mmHg with the mean systolic pressure 164+15.4 mmHg. While, the diastolic blood pressure ranged between 110 and 140, with the mean diastolic pressure 113+6 mmHg.

Laboratory results revealed that 35% of the patients had high serum uric acid; which was between 2.1 mg/dl and 10.5 mg/dl with the mean 5.3+1.7 mg/dl. In addition, Eight percent of the patients had thrombocytopenia with the platelets mean 186+68.2 and 4% of cases had high transaminase.

Regarding the delivery gestational age, 33% were preterm whereas 67% were term. Thirty-four patients delivered normally (21 delivered spontaneously and medical induction done for 13 patients) compared to 66 patients delivered by caesarean section. About 52/66 (78.7%) of them were emergency C/S and 14 had an elective C/S. Many factors played an important role in the decision regarding the indication of intervention as fetal reasons such as intrauterine growth retardation (IUGR) or uncontrolled maternal blood pressure as well as the eclamptic fit (figure 3).

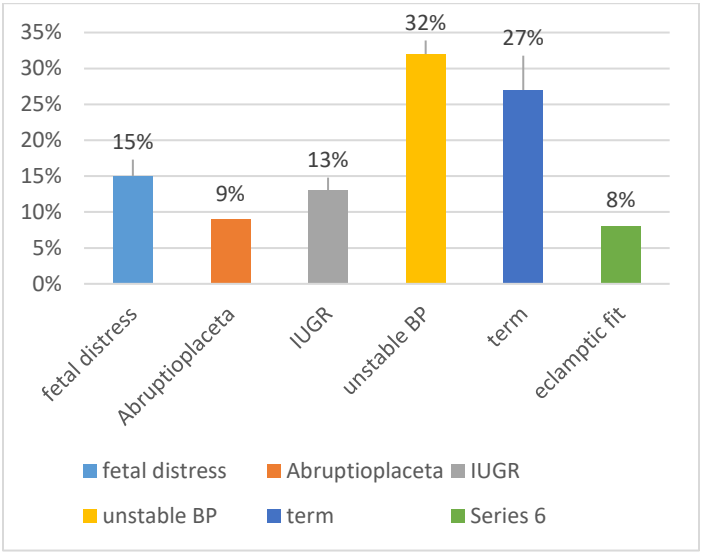

Figure 3. Distribution of patients with severe preeclampsia by indication and intervention

IUGR: intrauterine growth retardation, BP: blood pressure

Figure 5 represents the treatment used to control blood pressure Methyldopa (Aldomet) was used in 34% of cases and the combination of Methyldopa and Labetalol was used in 5%. However, 14 % of patients were given Methyldopa and Hydralazine In addition, Aspirin tablet as a prophylactic in 16% (figure 4).

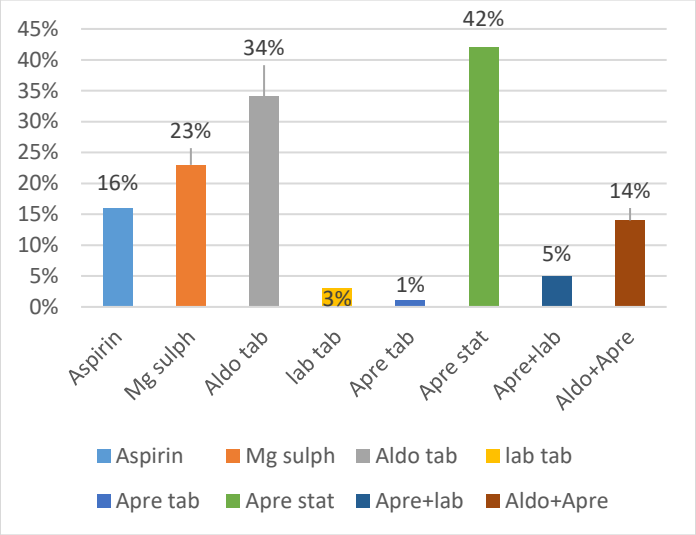

Figure 4. Distribution of patients with severe preeclampsia by drug use

The fetal outcome, the majority of our patients (77%) had no fetal complications during the antepartum period. We found that 13% had IUGR, 10% diagnosed with intrauterine fetal death (IUFD) (figure 5).

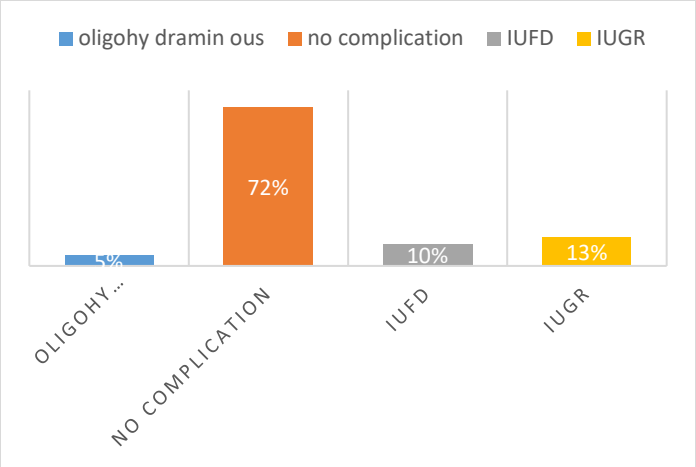

Figure 5. Distribution of patients with severe preeclampsia by fetal outcomes.

The current finding also revealed that 63% of patients had no neonatal complication and 18% of newborn babies admitted to nursery, then discharged in good condition, whereas 9% admitted to nursery, then died. In addition, 10% diagnosed with IUFD antenatally. The range of birth weight was between 760 grams and 4750 grams (mean birth weight was 2801+1009 grams). Thirteen per cent of newborn babies were with very low birth weight between 1000-1499 grams, 24% with low birth weight (weight between 2500-2499), and only 2% had birth weight more than 4000 grams.

The hospitalization period of patients with preeclampsia ranged between 1 day and 35 days with a mean period of 6.7±4.4 days. In addition, we documented that only one patient died 25 days after discharge from the hospital due to intracranial hemorrhage and acute renal failure however, 83% of the patients stopped the treatment in a range of 6 weeks after discharge from the hospital while 16% continued the anti-hypertensive treatment for more than 6 weeks.

DISCUSSION

Approximately one-third of all pregnancy-related deaths are due to complications of preeclampsia at a rate of 1.5/100,000 live births. Approximately 40% of these deaths are attributable to cerebrovascular events [12]. In our cohort, 54% of the patients aged between 30-40 years and 40% of them were primigravida. The mean systolic blood pressure at admission was 164+15.4 mmHg and the mean diastolic pressure was 113+6 mmHg on two occasions six hours apart with the patient at bed rest and this in synchronicity with the American College of Obstetricians and Gynecologists recommendation [1]. Clinically, a major part of patients presented the common symptoms as headache, epigastric pain, blurred vision, and exaggerated ankle reflex. 9% of patients presented with episodes of seizure and in literature documented that seizure occurred in 13-20% of patients [13,14]. Most importantly, a history of preeclampsia in previous pregnancies increases a woman's relative risk by 7.6 times and the risk increase in multiple gestation pregnancies [15]. In our cohort, we documented that 42% of patients had previous history of preeclampsia and 58% of patients with severe preeclampsia had a positive family history of chronic hypertension. Early-onset preeclampsia increases the risk of fetal death and although the prognosis for the fetus remains above baseline in late-onset

preeclampsia [16]. Thirty-seven per cent of newborn babies were born with birth weight between 2500-2499 grams, this was similar to the literature documented where significant newborn babies with low birth weight < 2500 grams for preeclamptic pregnant women and mean gestational age and birth weight were 28±3.5 and 1000±416 g [17-21]. In addition, eclampsia is associated with high maternal and fetal mortality and morbidity, the rate of stillbirths and neonatal deaths was 22.2/1000 and 34.1/1000, respectively [13]. In our cohort, we found that 13% had IUGR, 10% diagnosed with intrauterine fetal death (IUFD) and 9% of newborns died after admission to nursery. Some studies showed that perinatal death among women with diastolic blood pressures greater than 110 mmHg at admission was nearly 3 times and nearly 20 every 100 neonates from preeclamptic women died [17,22]. Preeclampsia/eclampsia remains one of the most common reasons for women who die during pregnancy worldwide, as 12% of all maternal deaths caused by eclampsia [23] and it was higher for women aged 30 years and for those with no prenatal care. Severe preeclampsia is associated with an increased risk of maternal mortality (0.2%). In our study, only one patient (1%) died 25 days after discharge from the hospital due to intracranial hemorrhage and acute renal failure. In literature, we found that maternal mortality occurred at 1.2% and the cause in those cases was Intracranial bleeding, acute renal failure, and disseminated intravascular coagulation [21]. In addition, most of these maternal deaths are due to intracerebral hemorrhage [24, 25]. The hospitalization period of patients with preeclampsia ranged between 1 day and 35 days with a mean period of 6.7±4.4 days.

CONCLUSION

The diagnosis of pre-eclampsia can have profound long-term health-care implications, and the devastating effects of hypertensive disorder associated with pregnancy could be prevented by close antenatal care, early recognition and adequate treatment, and timely delivery. Clear protocols for the management of hypertension in pregnancy at all levels of health care are required for better maternal as well as perinatal outcome.

Disclaimer

The article has not been previously presented or published, and is not part of a thesis project.

Conflict of Interest

There are no financial, personal, or professional conflicts of interest to declare.

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