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The Characteristics of Eclampsia in Referral Hospitals of Kerman, Iran

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To investigate patients characteristics and complications in cases of eclampsia in two referral hospital in Kerman province in Iran during the period 2000-2. A hospital-based case series study was designed. Forty nine cases were identified through two referral hospital of Kerman, Iran and characteristics of them were collected. The mean age of cases was 23.7 ± 5.9 years. 87.8% of them were urban and 51.1% were primipara. Only 5 out of 49 cases received prenatal care. Maximum of patients (65.3%) had cesarean section for delivery. Overall case-fatality rate was 14.3%. Thrombocytopenia and brain edema were the most frequent complications in these women. Eclampsia is a rare but serious complication of pregnancy, often associated with other morbidity and sometimes the death of mother or child. Recognition of characteristics aim clinician and researchers for the better management and treatment of eclampsia. In recent study fatality rate and cesarean delivery mode was higher than other surveys.

Key words: Eclampsia, characteristics, case-fatality rate, Kerman, Iran

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INTRODUCTION

Nearly 600 000 women die every year as a result of complications arising from pregnancy and childbirth. The overwhelming majority of these maternal deaths occur in developing countries[1,2]. Eclampsia is a rare but serious complication of pregnancy, often associated with other morbidity and sometimes the death of mother or child[3,4]. Eclampsia, the occurrence of a seizure in association with hypertensive disorders, remains an important cause of maternal death. According to the World Health Organization database, 10% of all maternal deaths at hospital are associated with eclampsia[5]. It seems maternal condition on admission and associated complications are the major determinant of maternal outcome[6]. Although it is almost always associated with clinical sign of pre-eclampsia but many sign and symptoms were characterized for eclampsia that recognition of them is considerable important. The aim of this study was to analyze the characteristics of ante partum and intrapartum eclampsia cases treated in the top referral hospitals in order to discuss effective strategies for the control of the disease burden in Iran.

MATERIALS AND METHODS

The case series study was designed and data were derived from two top referral hospitals in Kerman province during two years period 2000-2002.

There were 49 cases of eclampsia that admitted in two hospitals. Eclampsia was defined as the occurrence of generalized seizure in pregnant women showing at least one sign of pre-eclampsia (hypertension, proteinuria or edema). For all the eclampsia cases the following information were collected, age, place of residence, parity, gestational age basis of last menopausal phase, mode of delivery, history of previous pregnancies, family history, signs and symptoms, time of seizure and admission, drug administration, laboratory finding, complications confirmed during hospitalization and mortality. All data were registered in data collection forms and entered to computer by Epi Info-6. Analysis was carried out using SPSS-10. Descriptive tables were used for nominal data and mean and standard deviation were given for continuous variables.

RESULTS

The characteristics of 49 analyzed eclampsia cases were shown in Table 1. 12.2% of the cases live outside the capital city. The mean±SD age of patients was 23.7±5.9 years. The minimum age was 15 and maximum

Table 1: Characteristics of eclampsia cases

Variables	Frequency	Percent
Residence		
Capital city	43	87.8
Other	6	12.2
Age		
15-19	12	24.5
20-29	27	55.1
30-39	9	18.4
40-49	1	2.0
50<	0	0.0
Parity		
0	25	51.1
1-3	19	38.7
>3	5	10.2
Prenatal care		
Regular	5	10.2
Irregular	19	38.7
Never	25	51.1
Mode of delivery		
Vaginal	17	34.7
Cesarean section	32	65.3
Time of seizure		
Before labor	34	85.7
After labor	15	14.3
Before admission	34	85.7
After admission	15	14.3
Preterm labor	8	16.3

Table 2: The laboratory findings of eclampsia cases

Variables	Number	Mean	SD	Minimum	Maximum
Hemoglobin	49	13.20	3.9	5.50	35.40
Hematocrit	49	36.30	7.8	9.00	54.30
BUN	49	30.60	16.0	0.60	76.00
Creatinine	49	0.93	0.4	0.30	3.00
Total-billirobin	38	2.80	5.2	0.09	21.70
Direct-billirobin	38	1.60	3.4	0.06	14.20
ALT(SGOT)	40	370.00	838.0	10.00	4890.00
AST(SGPT)	40	177.00	400.0	3.00	2335.00
Alkaline-Ph	37	356.70	215.5	35.00	1120.00
Sodiuom	32	134.80	5.1	125.00	148.00
Pottasioum	32	4.20	0.5	3.10	5.10
PT	12	16.80	5.7	12.50	34.00
PTT	13	41.00	9.5	31.00	59.00

was 40 years old. The most frequent age group was 20-29 years (55.1%). The range of parity was between 0 to 8 and maximum frequency related to primipara. The mean of gestational age based on the last menstrual period was 36.5±4 weeks. Only 10.2% of cases had received prenatal care regularly. The most of patients had seizure before labor and before admission. Thirty two cases gave birth by cesarean section with general anesthesia and others had vaginal delivery. Overall case-fatality rate of eclampsia was 14.3% (7 out of 49 cases). None of cases had not any history of eclampsia in another pregnancy and in family but 6 cases had pre-eclampsia in previous pregnancy and one case had family history of pre-eclampsia. None of them had underling disease like diabetes mellitus, renal, cardiac, or pulmonary diseases. 87.8% of cases had headache, 30.6% had nausea and vomiting, 55.1% had epigastric pain and 47% had blurred vision before seizure. The laboratory findings of patients were shown in Table 2. Random quantitative protein
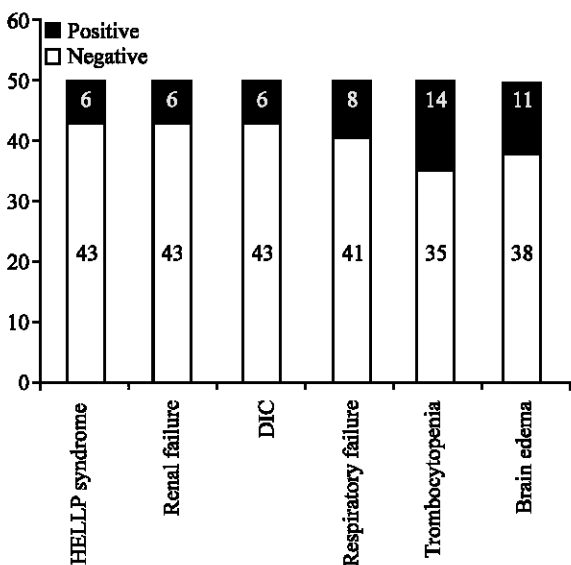
Fig. 1: The complications of eclampsia in patients

was 1+ in 7 cases (14.3%), 2+ in 18 cases (36.7%), 3+ in 15 cases (30.6%) and 4+ in 1 case (2%). Magnesium sulfate was administrated for all patients. Nine out of 49 cases had taken additive antihypertensive drugs before admission like Adalat and/or Hydralazine. Thirty six cases received Hydralazine as antihypertensive agent after admission. The complications of eclampsia that were occurred in patients were determined in Fig. 1.

DISCUSSION

Maternal mortality rate is one of the most important indices for community health assessment. There is very wide disparity in the burden between developed and developing countries: the Maternal Mortality Rate (MMR) is around 5 per 100 000 live births in northern Europe while it is more than 1000 in some African countries[7]. Eclampsia is one of the important causes of mortality in peripartum period in mothers and children. The Collaborative Eclampsia Trial has revealed that case-fatality rate of eclampsia ranged between 3 and 5%[3]. Recent data revealed that case-fatality rate of eclampsia in Kerman was 14.3% that was higher than the other world reports. Although life-threatening, eclampsia is a rare event in developed countries at a rate of around one in 2000 deliveries; the occurrence varies from one in 100 deliveries to one in 1700 in developing countries[4,8,9]. It seems that frequency of eclampsia in Iran is high. Recognition of characteristics of eclampsia lead physician and investigators to prevent and manage eclampsia and decreased frequency and mortality of it seriously. The mean age of our patients was 23.7±5.9 that was the same

as other studies like Rugarn *et al.*[10]. They determined the mean age of eclamptic women 24.4 to 25.8 years in 26 years period of time. Koum *et al.*[11] from Cambodia and Shaheen *et al.*[12] from Pakistan estimated the mean age of eclamptic patient 25 years old. Present finding was supported previous results[10-14], that more patients were primipara. Most of women had received no prenatal care and had cesarean section for delivery. In contrast of present study in the other study vaginal delivery was the choice mode of delivery and was more frequent. This rate was more than frequency of cesarean section in developing countries[10-12,14]. Arora *et al.*[15] showed caesarean section was performed in 92 cases (28.7%) of which 4 women died (4.3%). Maternal mortality in cases who delivered vaginally was 7.1% (16 out of 225) and 3 cases died undelivered. They demonstrated that vaginal delivery was safer than cesarean in eclampsia.

As was shown in this study, living outside the capital city, which means rural area, was more frequently associated with eclampsia. The other study in Cambodia suggested it[11]. It may suggest that primary health care facilities and the human resources that provide prenatal care are still in short supply in rural area. Training of staff and appropriate allocation of limited budgetary and human resources should be prioritized in rural areas.

Present standard treatments for preventing convulsion and improving the prognosis for eclampsia is the use of magnesium sulfate[16]. It is cheap and easy to monitor the patient so is recommended for developing countries. All our patient were administrated by magnesium sulfate. Moreover, magnesium sulfate reduces the risk of eclampsia when it is administered to pre-eclampsia patients as a prophylaxis[17].

Eclampsia can occur any time in the latter half of pregnancy and in puerperium and also in the absence of hypertension and proteinuria. It is uncertain whether early detection of pre-eclampsia will reduce the incidence of eclampsia, but improved detection and care may still lead to better outcome[18]. It is considerable to notice to the prenatal care is the most important factors for prevention of eclampsia in Iran

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