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FREQUENCY OF HELLP SYNDROME IN PRE- ECLAMPSIA AND ECLAMPSIA PATIENTS OF the CATCHMENT AREA OF SAIDU TEACHING HOSPITAL SWAT

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ABSTRACT

Objectives: The objective of the study was to determine the frequency of HELLP syndrome in preeclampsia and eclampsia patients presented to saidu teaching hospital Swat.

Methodology: This was a descriptive, cross sectional study. It was conducted in the department of gynaecology and obstetrics of Saidu Teaching Hospital Swat. All pregnant women attending antenatal clinic during 1st Jan 2007 to 31st Dec 2009 were included in the study. Women after 20 weeks of gestation with preeclampsia requiring admission in obstetric ward for monitoring and controlling blood pressure and all who were admitted in labour room with severe preeclampsia and eclampsia were included while women with gestational hypertension but no proteinurea were excluded. Non probability purposive sampling technique was used in the study.

Result: During three years time period, 16722 pregnant women were registered, out of which 537 were diagnosed having preeclampsia, 3.21% (n = 16722) . While 39 patients among 537, were diagnosed with HELLP syndrome, 7.26% (n = 537) in limited and 0.227% (n = 16722) in the overall sample population. Out of total 39 patients 38 were antenatal 1 was post-natal. About 69.25% women were between 30 to 40 weeks of gestation and 30.7% were less than 30 weeks of gestation. In our study the frequency of HELLP syndrome was high between 26-30 years (38.46%) and in multigravidas (46.15%).

Conclusion: The study revealed that although in spite of backward area, lack of education and health care awareness with special reference to mother and child health the incidence of HELLP syndrome is less than the internationally reported data, but this may be due the fact that all patients with eclampsia and pre eclampsia do not reached hospital and treated at home due to superstitious believes. A community based intervention is needed to improve health awareness and education. All patients with preeclampsia and eclampsia needs to be investigated for HELLP syndrome and those with HELLP syndrome should be provide the best possible care at the appropriate time.

Key words: Pre-Eclampsia, Eclampsia, HELLP syndrome

INTRODUCTION

HELLP syndrome is an associated clinical disorder of pre-eclampsia & eclampsia in which there is Haemolysis (H), elevated liver enzymes (EL) and low platelet count (LP), first described by Weinsten in 1982 with the acronym of HELLP. HELLP syndrome is a multisystem disorder that complicate pregnancy and has a poor prognosis[1]. Incidence of the syndrome is 0.5 to 0.9% of all pregnancies and 10 - 20% of cases with severe pre-eclampsia[2,3]. It is more common in older multiparous caucasions women[4]. The recurrence rate for HELLP is from 19-27% in parous women[1,2]. In subsequent pregnancy it is frequently associated with preeclampsia and eclampsia[5]. Patient with a history of HELLP syndrome are at increased risk for preeclampsia and HELLP as well as there is increased risk of cardiovascular and chronic hypertension as long term morbidities[6].

To date, no common precipitating factor has been found. The syndrome seems to be the final manifestation of some insult that leads to microvascular endothelial damage and intravascular platelet activation. With platelet activation, thromboxane A and serotonin are

released, causing vasospasm, platelet agglutination and aggregation, and further endothelial damage[7].

Two classification systems are used for HELLP syndrome based on the number of abnormalities that are present. In Tennessee classification system, patients are classified as having partial HELLP syndrome (one or two abnormalities) or full HELLP syndrome (all three abnormalities)[8]. Alternatively in Mississippi classification system the HELLP syndrome can be classified on the basis of platelet count nadir: class I, less than 50,000 per mm^3 (50 3 10^9 per L); class II, 50,000 to less than 100,000 per mm^3 (50 to 100 3 10^9 per L); and class III, 100,000 to 150,000 per mm^3 (100 to 150 3 10^9 per L)[9].

Diagnosis of complete form of HELLP syndrome requires the presence of all 3 major components while partial or incomplete HELLP syndrome consists of only 1 or 2 elements of the triad[2].

There are 33 million cases of TB worldwide, 3 million annual deaths and 8 million new cases. About 0.3 million persons developed active TB every year ¾ of which concentrated of productive age group[7]. In some studies biological and social factors like poverty, children, family, homes, cattle and substantial stigma especially in women was

HELLP Class	Tennessee Classification	Mississippi Classification
Class I	Platelets d 100,000/mm^3 AST e 70 units /liter LDH e 600 units / liter	Platelets d 50,000/mm^3 AST or ALT e 70 units /liter LDH e 600 units / liter
Class II		Platelets d 100,000/mm^3 e 50,000/mm^3 AST or ALT e 70 units /liter LDH e 600 units / liter
Class III		Platelets d 150,000/mm^3 e 100,000/mm^3 AST or ALT e 40 units /liter LDH e 600 units / liter

METHODOLOGY

This was a descriptive study. The study was conducted in Department of Obstetrics and Gynaecology in Saidu Teaching Hospital Swat after approval by Hospital Committee for clinical research and ethical review committee. The study was based on three years data of admitted patients from 1st Jan 2007 to 31st Dec 2009 collected on a prescribed format. From every patient a detail history was taken and those who were unconscious their close attendant were consulted. All information regarding past obstetrical history, index pregnancy, symptoms, signs and all relevant investigations were documented in a systematic fashion for proper analysis. Non probability consecutive sampling technique was used. The inclusion criteria were all pregnant women after 20 weeks of gestation with preeclampsia and eclampsia requiring admission in Labour room or obstetric ward after fulfilling the diagnostic criteria of Mississippi Triple Class Classification System and Tennessee Classification System. While pregnant women with simple pregnancy induced hypertension but no proteinurea were excluded.

RESULTS

During the study period of three years, the frequency of pre eclampsia and eclampsia was 3.21%(n=537/16722), compare to reported incidence of 5 to 10%. In the reported 537 patients 39, that is 7.26% (n=537), cases developed HELLP syndrome which is contrary to the reported incidence i.e. 10 to 20%. While the frequency of HELLP syndrome in the total sample population (n=16722) was 0.227% which is outside the reported range of 0.6 to 0.9%[2,10].

Table-1 shows that the frequency of HELLP syndrome is more between 20-30 years (69.22%). Where it has a marked visible prevalence in higher period of gestation 48.71% women between 36-40 weeks of gestation. While its frequency is almost doubled in multipalgravida (46.15%) as compare to primi (20.51%)which indicates that the risk of HELLP syndrome has somewhat direct relation with number of pregnancies. Quick delivery is the ultimate treatment and 46.15 % women were delivered by emergency c/section compare to15.13% vaginal deliveries.

Table-1: Frequency of HELLP syndrome and its relation with other Characteristics

Characteristics	No of cases = 39	Percentage (n = 39)
Age groups (years)		
20-25	12	30.76%
26-30	15	38.46%
31-35	8	20.50%
35-40	4	10.25%
Period of gestation (weeks)		
20-25	6	15.38%
26-30	6	15.38%
37-35	8	20.5%
36-40	19	48.71%
Gravida		
Primigravida G1	8	20.51%
Multigravida G2-G4	18	46.15%
Grand Multigravida G5-G8	13	33.33%
Mode of delivery		
Undelivered (expired antenatally)	7	17.94%
Vaginal delivery	6	15.13%
Emergency lower segment C/Section	18	46.15%
Hystrotomy	8	20.5%

Tables 2 and 3 shows the diagnostic data according to the two reported classification systems of HELLP syndrome 58.97 % of women were in class III (platelets count<100,000-150,000/mm^3), 30.76% in class II and 10.25% in class I of Mississippi Triple class classification system. As clear from table 3 100% of patients had Aspartate amino trasferase of >70u/l while 58.97% patients shows evidence of heamolysis with serum LDH level>600u/l. Table-4 shows the information about the frequency of partial and complete HELLP syndrome which is 53.84% and 46.15% (n=39) respectively.

Table-2: Investigation, Mississippi Triple Class Classification System

Classes	No of cases	%Age
Class I (Platelets Count <50,000/mm3)	4	10.25%
Class II (Platelets Count <50,000 100,000/mm3)	12	30.76%
Class III (Platelets Count <100,000 - 150,000/mm3)	23	58.97%

Table-3: Investigation, Tennesee Classification System

Diagnostic tests	No of cases	%Age
Platelet Count (*<100,000/mm3*)	22	56.41%
AST(*Aspartate amino transferase >70 u/L)*	39	100.0%
Haemolysis LDH (> *600u/L)*	23	58.97%

Table-4: Frequency of Partial and Complete HELLP syndrome

HELLP syndrome	No of cases	Percentage
Partial HELLP syndrome	21	53.84%
Complete HELLP syndromes	18	46.15%

DISCUSSION

In our study with reference to period of gestation, (Table-1), about 69% women were between 30 to 40 weeks of gestation and 30.7% were less than 30 weeks of gestation. Out of total 39 patients 38 were antenatal 97.43% and one was post-natal 2.56%.

In our study the frequency of HELLP syndrome was more between 20-30 years of age(69.22%) and more in multiparous women (46.15%) similar to the reported data in literature[4]. The mean age in our study was 30 years with Standard deviation of 14.142. In our study the frequency of HELLP syndrome was 7.26% in eclampsia pre eclapsia patients. The over all incidence of HELLP syndrome in Pakistan is 0.4%,while the frequency of HELLP syndrome in our study of total sample population (16722) was 0.22%.

In our study the Patients with Class I HELLP syndrome were 10.25% which are at higher risk for maternal morbidity and mortality than patients with Class II (30.76%) or III (58.97%) HELLP syndrome[13] this otherwise revealed that risk factor is less in these areas. The risk of recurrence in a subsequent pregnancy is estimated at 19-27%[14] so all patients needs very vigilant counseling regarding future pregnancies and early booking.

A study conducted by Khan H[13] 88.55% patients developed HELLP syndrome as complication of preeclampsia. An other study which was conducted in civil hospital Karachi in year 2009 showed frequency of 18.86% HELLP syndrome in preeclampsia/eclampsia patients[15].

A retrospective study was conducted in Fatima memorial hospital Lahore from January 2005 to December 2007 which revealed incidence of preeclampsia/eclampsia of 1.17 % out of them

22.55% patients developed HELLP syndrome[16]. Study conducted by Gleeson R et all the Superimposed HELLP syndrome were developed in 4-12% of women with preeclampsia or eclampsia[11].When preeclampsia is not present the diagnosis of the syndrome is often delayed[13]. Early diagnosis is critical because the morbidity and mortality rates associated with the syndrome have been reported to be as high as 25%. As a result, patient awareness of HELLP syndrome, and how it relates to preeclampsia is helpful to ensure optimal and timely medical care for mother and baby. The most common reason for mother to die is liver rupture or stroke. These can usually be prevented when caught in time. Most often the definitive treatment for women with HELLP syndrome is delivery of the baby.

Among pregnant women in the united states, 5-8% develop preeclampsia: 15% of those women develop evidence of HELLP syndrome. There is still some difference of opinion among exports as to what lab values constitute HELLP syndrome, so these estimates are approximate and also reflect the higher end of the spectrum.

Women with a history of HELLP syndrome are at increased risk of all forms of preeclampsia in subsequent pregnancies. The rate of preeclampsia in subsequent pregnancies ranges from 16-52%,with higher rates if the onset of HELLP syndrome was in the second trimester.

The frequency of pre eclampsia and eclampsia in our study was 3.21%,and this difference of low frequency in comparison with national and international studies may be because of the social setup of the locality where pregnancy is not taken as a serious threat to the health of women and tried preferably to dealt with at home by lady health visitors and midwives, and same is the reason for low frequency of HELLP syndrome.

According to international studies, in 70 % of cases this disorder is diagnosed antenatally, 10% before 27 weeks of gestation, 70 % before 27 to 37 weeks and 20% after 37 weeks of gestation, in 30% cases, it is diagnosed post partum[4], in our study less than 70% were between 30-40 weeks gestation and approximately 20% were less than 30 weeks of gestation while the frequency of post natal HELLP syndrome in our study was only 2.65%.

CONCLUSION

The study revealed that although in spite of being a backward area, with lack of education and health care awareness with special reference to mother and child health the incidence of HELLP syndrome is less than the internationally reported data. This may not the actual situation but the tip of an ice berg. Because of the local set up of the area most of the patients never reach hospital and are dealt at home, because of some superstitious believes especially regarding eclampsia. A community based intervention is very much needed to improve health awareness and education with special focus on identification and referral of high risk pregnant women to tertiary care hospital. All patients with preeclampsia and eclampsia needs to be investigated for HELLP syndrome and those with HELLP syndrome should be provide the best possible care at the appropriate time. The basic health care providers need to be trained for risk assessment and evaluation.

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