STATISTICAL STUDY OF CASES OF ECLAMPSIA ADMITTED TO KASR EL-AINI HOSPITAL FROM JANUARY 2011 TO DECEMBER 2012

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Abstract

Eclampsia is a syndrome peculiar to human pregnancy. Classically defined as convulsions on top of preeclampsia, eclampsia has been regarded as a grade of pregnancy induced hypertension by some and as a complication of the latter by others, in numerous and perplexing classifications. Although probably more research has been devoted to the aetiology of eclampsia than any other subject in obstetrics, theories have failed to stand up. Further investigations, or have shown conflicting results and none has yet explained all the changes in this condition. These theories included genetic and immunological mechanisms and more recently endothelial cell injury has been introduced. As the cause is still obscure, our management remains symptomatic and empiric.

Key Words : ECLAMPSIA - KASR EL-AINI HOSPITAL

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LIST OF ABBREVIATIONS

ACOG	**:**	American college of obstetrics and Gynecology
ACR	**:**	Albumin creative ration
ALT	**:**	Alanine aminotransferase
aPTT	**:**	Activated partial thromboplastin times
ARDS	**:**	Adult respiratory distress syndnome
AST	**:**	Aspartate aminotransferase
BMI	**:**	Body mass Index
Bp	**:**	Blood pressure
BUN	**:**	Blood urea nitrogen
CAD	**:**	Coronary artery disease
CBC	**:**	Complete blood cell count
CMP	**:**	Complete metabolic panel
CNS	**:**	Central nervous system
CrCl	**:**	Creatinine clearance
CSF	**:**	Cere brospiral fluid
CT	**:**	Computed tomography
CVAs	**:**	Cerbro vascular accidents
DBP	**:**	Diastolic blood pressure
DIC	**:**	Disseminated Intravascular coagulopathy
EDRF	**:**	Derived Releasing factor
ET	**:**	Endothelins
GFR	**:**	Glomerular filtration rate
HEENT	**:**	Head, ears, eyes, nose and throat
HELLP	**:**	Hemolysis, elevated liver enzyme low platelets.
ICAM-1	**:**	Intercellular adhesion molecule-1
ICP	**:**	Intra cerebral pressure
IL-6	**:**	InterLeukin-6
IUGR	**:**	Intra utrine growth restriction
IV	**:**	Intravenous
LDH	**:**	Lactate dehydrogenase
MAP	**:**	Mean arterial pressure
$MgSO_4$	**:**	Magnesium sulphate
MRI	**:**	Magnetic Resonance Imaging

PGI_2	**:**	Prostaglandin I_2
PLGF	**:**	Placental growth factor
PT	**:**	Prothrombin time
ROS	**:**	Reactive oxygen species
SBP	**:**	Systolic blood pressure
SGOT	**:**	Aspartate amino transferase
SOGC	**:**	The Society of Obstetrician and Gynecologist of canda
$SSRI_s$	**:**	Selective serotonin uptake inhibitor
sVEGFR-1	**:**	Soluble vascular endothelial growth factor receptor-1
Th_1	**:**	Helper T Cells
Th_1/Th_2	**:**	Thelper 1/ Thelper 2
TNF-α	**:**	Tumor necrosis factor-α
TXA_2	**:**	Thromoboxane A_2
USP	**:**	United States Pharma Copoeia
VEGF	**:**	Vascular endothelial growth factor

INTRODUCTION

- Hypertensive disorders complicating pregnancy are common. They form one of the deadly triad along with hemorrhage and infection that result in large number of fetal and maternal morbidity, mortality that accounts for 15-20% of maternal deaths in developing as well as developed nations ***(Nicolaides et al.,2000 and Davsion et al., 2004).*** Eclampsia affects about one in every 2,000 to 3,000 pregnancies ***(Brindles lee Macon et al., 2012).***
- The cause of pre-eclampsia is not yet clear, it includes: immunological, genetic, environmental factors and placental abnormality. The final result of all these is endothelial dysfunction, characteristic of pre-eclampsia ***(Ozkans S. et al., 2005).***
  The cardinal clinical features of this condition are hypertension and proteinuria occurring after 20 weeks gestation. ***(Davison et al., 2004).*** Although pre-eclampsia affects about 1-2% of pregnancies in some European countries, its prevalence can be up to 10-15% in some south American and African countries ***(Sucak et al., 2010).***
- Every year almost 600.000 women die from various causes related to pregnancy, delivery and puerperal diseases ***(Rizzi et al., 2005).*** Approximately 50.000 women die each year from eclampsia ***(Duley,1992)***.
- The maternal mortality rate from eclampsia in developed countries ranges from 0-1.8 % of cases .Most of casess of maternal death are complicated by a condition known as HELLP syndrome ,fetal and maternal outcomes are significantiy worse in developing countries ***(Melissa Conrad et al., 2012).***

AIM OF THE WORK

This study aims to investigate cases of eclampsia admitted to Kasr El Aini hospital during two years (January 2011 to December 2012). With special consideration to clinical profile, the different modalities of treatment implemented and their influence on maternal& fetal outcomes.

REVIEW OF LITERATURE

Chapter (1)

Classification and Terminology

According to the American College of Obstetricians and Gynecologists ***(ACOG, 1996),*** terminology used to describe hypertension in pregnancy is nonuniform, confusing, and steeped in tradition. Previously, the College had used the criteria of ***(Hughes, 1972),*** and these are similar to those of ***(Davey and MacGillivary, 1988). The working group of the National High Blood Pressure Education Program (1990***), recommended that the original classification of ***(Hughes, 1972),*** be used because transient hypertension is included. This category had been included in the classification listed in table (2). This classification separates hypertension that is in some way induced by pregnancy from hypertension that merely coexists with it. Unfortunately, chronic hypertension may be aggravated by superimposition of preeclampsia or eclampsia.

The term pregnancy-induced hypertension has not been discarded because the development of hypertension, especially in nulliparous, cannot be differentiated from transient hypertension except retrospectively. Therefore, the development of hypertension in a previously normotensive pregnant woman should and must be considered potentially dangerous to both her and her foetus. Thus, clinical situations should be designated pregnancy-induced hypertension and considered precursors to preeclampsia and eclampsia until after safe management of pregnancy. At this time, it may then be appropriate to reclassify the hypertension as transient ***(Cunningham et al., 1997).***

Table (1): Classification of" hypertensive and proteinuric disorders of pregnancy *(Davey and MacGillivary, 1988)".*

Clinical classification of hypertensive and proteinuric disorders of pregnancy

1. Gestational hypertension and/or proteinuria: hypertension and/or proteinuria developing during pregnancy in a previously normotensive woman subdivided into:
   a- Gestational hypertension (without proteinuria):
   - Developing during pregnancy
   - Developing for the first time in labour
   - Developing for the first time in puerperium

   b- Gestational proteinuria (without hypertension)
   - Developing during pregnancy
   - Developing for the first time in labour
   - Developing for the first time in puerperium

   c- Gestational proteinuric hypertension (preeclampsia):
   - Developing during pregnancy
   - Developing for the first time in labour
   - Developing for the first time in puerperium

Clinical classification of hypertensive and proteinuric disorders of pregnancy

2) Chronic hypertension and chronic renal disease: hypertension and/or proteinuria occurring during pregnancy in a woman with proven chronic hypertension or renal disease, present before, diagnosed during, or persisting after pregnancy, subdivided into:
   a- Chronic hypertension (without proteinuria)
   b- Chronic renal disease (proteinuria with or without hypertension)
   c- Superimposed pre-eclampsia: proteinuria developing for the first time during pregnancy in a woman with known chronic hypertension

3) Unclassified hypertension and proteinuria: hypertension and proteinuria at or after 20th week (140 days) pregnancy in a women without proven chronic hypertension or chronic renal disease or where insufficient information is available to permit classification subdivided into:
   a- Unclassified hypertension.
   b- Unclassified proteinuria
   c- Unclassified proteinuric hypertension (preeclampsia)

Table (2): Classification of" hypertensive disorders complicating pregnancy *(Cunningham et al., 1997).*

Pregnancy-induced hypertension; Hypertension that develops as a consequence of pregnancy and regresses postpartum: • Hypertension without proteinuria or pathological oedema. • Preeclampsia-with proteinuria and/or pathological oedema: a-Mild. b-Severe. • Eclampsia-proteinuria and/or pathological oedema along with convulsions. • Coincidental hypertension: Chronic underlying hypertension that antecedes pregnancy or persists postpartum. • Pregnancy-aggravated hypertension: Underlying hypertension worsened by pregnancy: l/Superimposed preeclampsia. 2)Superimposed eclampsia. • Transient hypertension: Hypertension which develops after the midtrimester of pregnancy and is characterized by mild elevations of blood pressure that do not compromise the pregnancy. This form of hypertension regresses alter delivery, but may return in subsequent gestations.

Each of these forms of hypertension are defined by ACOG as follows: ***(Arias, 1993)***

- Preeclampsia: Hypertension associated with proteinuria, greater than 0.3 g/L in a 24-hour urine collection or greater than 1 g/L in a random sample; generalized oedema, greater than 1" pitting oedema after 12 hours of rest in bed or a weight gain of 5 lb or more in I week: or both after 20 weeks of gestation.
- Eclampsia: Convulsions occurring in a patient with preeclampsia.
- Chronic hypertension: The presence of sustained blood pressures of 140/90 mmHg or higher before pregnancy or before 20 weeks.
- Preeclampsia or eclampsia superimposed on chronic hypertension.
- The occurrence of preeclampsia or eclampsia in women with chronic hypertension. To make this diagnosis it is necessary to document a rise of 30 mmHg or more in diastolic blood pressure, associated with proteinuria, generalized oedema, or both.
- Transient hypertension: The development of hypertension during pregnancy or the early puerperium in a previously normotensive woman whose pressure normalizes within 10 days postpartum. There must be no evidence of preeclampsia.

Eclampsia is defined as seizures that cannot be attributable to other causes in a woman with preeclampsia. HELLP syndrome (hemolysis, elevated liver enzyme, low platelets) may complicate severe preeclampsia.

Its regarded as one of the complications of the hypertension and proteinuric disorders of pregnancy and is not included in this classification.

In 2008, the Society of Obstetricians and Gynecologists of Canada (SOGC) released revised guidelines that simplified the classification of hypertension in pregnancy into 2 categories, preexisting or gestational, with the option to add "with preeclampsia" to either category if additional maternal or fetal symptoms, signs, or test results support this. ***(Magee LA, et al., 2008)***

Chronic hypertension

Is defined as blood pressure exceeding 140/90 mm Hg before pregnancy or before 20 weeks' gestation. When hypertension is first identified during a woman's pregnancy and she is at less than 20 weeks' gestation, blood pressure elevations usually represent chronic hypertension.

Chronic hypertension is a primary disorder in 90-95% of cases and may be either essential (90%) or secondary to some identifiable underlying disorder, such as renal parenchymal disease (eg, polycystic kidneys, glomerular or interstitial disease), renal vascular disease (eg, renal artery stenosis, fibromuscular dysplasia), endocrine disorders (eg, adrenocorticosteroid or mineralocorticoid excess, pheochromocytoma, hyperthyroidism or hypothyroidism, growth hormone excess, hyperparathyroidism), coarctation of the aorta, or oral contraceptive use. About 20-25% of women with chronic hypertension develop preeclampsia during pregnancy.

Chronic hypertension occurs in up to 22% of women of childbearing age, the prevalence varying according to age, race, and body mass index (BMI). Population-based data indicate that approximately 1% of pregnancies are