INT. J. BIOL. BIOTECH., 9 (1-2): 89-91, 2012.

EVALUATION OF PREGNANCY AND THE COMPLICATING DISEASES

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ABSTRACT

The present paper investigates the evaluation of pregnancy and complicating diseases. A survey was conducted in selected areas of Karachi (North Nazimabad).The pregnant women (19-48 years old) were included in the study. The data was collected from 50 pregnant women during May to July 2011.Data analysis was done by using mean ± S.E.M and t-test. Prevalence of risk factors during pregnancy was found to be 36%. Among these 36% of patients, 10% had hypertension, 18% had diabetes and 8% had hepatitis.

Keywords: Pregnancy, Hypertension, Diabetes, Hepatitis, Anemia, Blood pressure.

INTRODUCTION

Pregnancy complications are the problems that occur only during pregnancy. They may affect the woman, the fetus, or both and may occur at different times during the pregnancy. For example, complications such as a mislocated placenta (placenta previa) or premature detachment of the placenta from the uterus (placental abruption) can cause bleeding from the vagina during pregnancy (Briery and Morrison, 2008). Factors increasing the risk (to the woman, the fetus/es, or both) of pregnancy beyond the normal level of risk may be present in a woman's medical profile either before she becomes pregnant or during the pregnancy (Medline Plus, US National Library of Medicine). Risk factors include; Age, Pre-existing health conditions such as Heart diseases, High blood pressure, Diabetes, Hepatitis or HIV, Smoking, Infections, Physical and Social characteristics. Iron-deficiency anemia (IDA) is one of the most frequently observed nutritional deficiencies among pregnant women around the world (Preziosi *et al*., 1997). Girls aged 15 and younger are at increased risk of preeclampsia. Women aged 35 and older are at increased risk of problems such as high blood pressure, gestational diabetes (diabetes that develops during pregnancy), chromosomal abnormalities in the fetus. The prevalence of hepatitis C virus (HCV) in general population range from 4-25.7%, (Roy *et al*., 2003) with highest number of infection reported in Egypt (Laurer and walker, 2001). Few women of childbearing age have high blood pressure, up to 11% develop hypertension of pregnancy (Kang *et al*., 2008). While generally benign, it may herald three complications of pregnancy: pre-eclampsia, hemolysis elevated liver enzyme low platelet count (HELLP) syndrome and eclampsia. Follow-up and control with medication is therefore often necessary (Mounier-Vehier and Delsart, 2009).Gestational diabetes mellitus (GDM) is common in women with 2–12% of all pregnancies affected (Hunt and Schuller, 2007). Present study aims at identifying the exclusive role of complicating diseases in pregnancy in Karachi.

MATERIALS AND METHODS

A study was undertaken at different hospitals in Karachi (North Nazimabad). Data collection was started from 19th may 2011 till 25th July2011.In all 50 pregnant women (age 18-48 years) were involved in the study. A data was collected by using pre-tested, pre-designed questionnaires followed by clinical examination of participants which included, height, weight, body mass index, socio-economic status, addictions, number of pregnancies, list of medication, viral illness, and blood transfusion. The database collection also included of test reports like blood pressure (mmHg), hepatitis B and C reports, complete blood profiles and blood sugar level (mg/dl).

Statistical Analysis

The data expressed as mean ± S.E.M and compared by the t-test. A value of $p<0.005$ was chosen as the criteria of statistical significance.

RESULTS

Out of 50 subjects, 18(36%) were found to be risk disease, of which 5(10%) had hypertension, 9(18%) had diabetes and 4(8%) had hepatitis (Table 1).The mean age of patients was higher ($P<0.05$). Blood sugar levels decrease non-significantly ($P>0.05$). High blood pressure was observed in patients as compared to control and pulse

rate was also higher significantly (P<0.05) (Table 2).Other factor like socioeconomic status, associated symptoms, family history of disorders were not significantly associated with complication of pregnancy.

Table I. Comparison between complications of pregnancy in control and patients.

	Control	**patients**
	n=32	n=18
Hypertension	0	5 (10)
Diabetes	0	9 (18)
Hepatitis	0	4 (8)

* Values in Parenthesis are Percentages

Table 2. Comparison between variables in control and patients.

	Control	**Patients**
	n=32	n=18
Age	25.562 ± 0.719	31.22 ± 1.712*
BMI(kg/m2)	31.14 ± 1.96	24.09 ± 1.451**
Systolic B.P	112.8 ± 1.364	126.3 ± 2.350**
Diastolic B.P	70.6 ± 1.265	85.7 ± 2.019**
pulse rate	82.75 ± 0.724	83.22 ± 1.178*
Blood sugar level (mg/dl)	92.68 ± 2.378	128.22 ± 3.480**

*Numerical values are Mean values ±SEM

(BMI = Body Mass Index (kg/m^2); B.P = Blood pressure

*,P<0.05; **,p<001)

DISCUSSION

Age plays a vital role in the development of risk factors during pregnancy. In present study the age was significantly higher in patients (P<0.05). Women with hypertension in pregnancy are more likely to increase certain complication than those pregnant women with normal blood pressure. In present study hypertension was seen in 10% of the subjects which may be a predictor of their risk of developing hypertensive disorder later on. Hypertensive disorders of pregnancy (HDP) are among the main public health issues worldwide (Jim *et al*., 2010). Studies have shown that chronic hypertension responsible for only 30% of hypertensive disorders during pregnancy and about 70% of cases were diagnosed as gestational hypertension and/or pre-eclampsia (Yucesoy *et al*., 2005). The World Health Organization estimated that 170 million people were infected with HCV worldwide, representing 3% of the global population (World Health Organization and Viral Hepatitis Prevention Board., 1999). The prevalence of HCV in a population can be predicted by risk factors associated with the transmission of infection. These risk factors include injection, drug use, blood product transmission, occupational injury and vertical transmission (Yen *et al*., 2003). Diabetes can be caused by several factors; these include a family history of diabetes, previously giving birth to still born baby, obesity, being over age 25, polycystic ovary syndrome and smoking. Diabetes in present study was associated with 18% subject. Such cases may show higher rates of miscarriage, pre-eclampsia, preterm labour and higher rates of fetal malformation (Ray *et al*., 2004). According to American diabetes association, gestational diabetes affects about 4% of pregnant women, with approximately 135,000 cases each year in the united state. The overall Prevalence of risk factors during pregnancy was found to be 36%. Subjects from the pregnancy risks were having Hypertension (high blood pressure), Hepatitis and Diabetes (high blood sugar level) which are known to develop serious complication during pregnancy.

REFERENCES

Hunt, K.J. and K.L. Schuller (2007). The increasing prevalence of diabetes in pregnancy. *Obstet Gynecol Clin North Am*., 34: 173–199.

Jim, B., S. Sharma, T. Kebede and A. Acharya (2012). Hypertension in pregnancy: a comprehensive update. *Cardiol Rev*., 18: 178-89.

Kang, A. and H. Struben (2008). [Pre-eclampsia screening in first and second trimester] (in German). *Therapeutische Umschau. Revue Thérapeutique,* 65 (11): 663–6.

Laurer, G.M. and B.D. Walker (2001). Hepatitis C infection. *N Engl J Med*., 345: 41-52.

Mounier-Vehier, C. and P. Delsart (2009). [Pregnancy-related hypertension: a cardiovascular risk situation] (in French). *Presse Médicale,* 38 (4): 600–8.

Preziosi, P., A. Prual, P. Galan, H. Daouda, H. Boureima and S. Hercberg (1997). Effect of iron supplementation on the iron status of pregnant women: consequences for newborns. *American Journal of Clinical Nutrition,* 66(5): 1178 –82.

Ray, J.G., M.J. Vermeulen, C. Meier and P.R. Wyatt (2004). Risk of congenital anomalies detected during antenatal serum screening in women with pregestational diabetes. *QJM-An International Journal of Medicine*, 97(10): 651-653.

Roy, K.M., D. Goldberg, A. Taylor and P. Mills (2003). Investigating the source of Hepatitis C virus infection among individuals whose route of infection is unidentified: a study of ten cases. *Scand J Infect Dis*., 35: 326-8.

World Health Organization and Viral Hepatitis Prevention Board (1999). Global surveillance and control of hepatitis C. *J Viral Hepat*., 6: 35–47.

Briery, C.M. and J. Morrison (2008). Definition of High Risk Pregnancy. In: Merck Mannuals. www.merckmanuals.com/.../definition_of_high-risk_pregnancy.html; Review/revision December 2008 by Christian M. Briery, MD; John Morrison, MD

www.diabetes.org/diabetes-basics/gestational; (May 2011) “Gestational diabetes”, American diabetes association.

www.nlm.nih.gov/medlineplus/healthproblemsinpregnancy.html; (December 2010) "Health problems in pregnancy". Medline Plus. US National Library of Medicine

Yen, T., E.B. Keeffe and A. Ahmed (2003). The epidemiology of hepatitis C virus in fection . *J. Clin Gasteroenterol.,* 36: 47-53.

Yucesoy, G., S. Ozkan, H. Bodur, T. Tan, E. Calıskan, B.S. Vural, et al. (2005). Maternal and perinatal outcome in pregnancies complicated with hypertensive disorder of pregnancy: a seven year experience of a tertiary care center. *Arch Gynecol Obstet*., 273: 43-9.

(*Accepted for publication June 2012*)