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GESTATIONAL HYPERTENSION AND PREECLAMPSIA IN SINGLETON AND TWIN PREGNANCIES AND ITS RELATIONSHIP WITH CHORIONCITY IN TWIN PREGNANCIES

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Keywords:

Gestational Hypertension, Pre-eclampsia, Twin Pregnancy, Placentation, Chorionicity.

Abstract

Background: Gestational Hypertension is defined as blood pressure of ≥ 140/90mmHg in a women without a previous history of arterial hypertension after 20 weeks of pregnancy. Aims and objectives: 1) To know and compare the prevalence of gestational hypertension and preeclampsia in singleton versus twin pregnancies. 2) To know and compare the prevalance of gestational hypertension and preeclampsia in monochorionic and dichorionic twins.

Methodology: Hundred singleton and hundred twin pregnant women at 15-16 weeks of gestational age attending antenatally O.P.D in Lalla Ded Hospital Srinagar over a period of one year were studied. Proper history was taken and examination was done. Along with routine investigations blood pressure and urine for proteins was noted,which was repeated at every antenatal visit.The chorionicity of twins was determined by antenatal ultrasound at first visit. The registered patients were followed till 36 weeks and admitted thereafter or earlier if needed.

Results: Our study depicted that gestational hypertension and preeclampsia is more common among twins 13%versus 7% in singletons. Further based on chorionicity, gestational hypertension and preeclampsia was found more often in monochorionic twins 20% than in dichorionic twins 13%.

Conclusion: Gestational hypertension/ preeclampsia is more common in twins especially monochronic twins.

Introduction

Gestational hypertension is onset of hypertension after 20 weeks of pregnancy with or without proteinuria .This is confirmed by return of blood pressure to normal levels in postpartum period. Gestational hypertension/preeclampsia occurs more commonly in pregnancies associated with large placentae such as multiple pregnancies ,hydatidiform mole and hydrops foetalis[1]. Pre-eclampsia is a pregnancy specific syndrome characterized by new onset hypertension and proteinuria occurring usually after 20 weeks of gestation[2]. It is defined as the blood pressure of ≥ 140/90mmHg in a women without a previous history of arterial hypertension along with presence of proteinuria ≥ 300mg in 24 hours urine collection or ≥1+ by qualitative urine examination after 20 weeks of pregnancy[3]. Pre-eclampsia is a syndrome, which affects virtually all maternal organ systems[4]. The dreadful complications associated with pre-eclampsia include eclampia ,HELLP (haemolysis ,elevated liver enzymes and low platelets count)syndrome, pulmonary oedema, acute renal failure, abruptio placentae and intracranial bleeding[5].Risk factors associated with pre-eclampsia include nulliparity, previous history of pre-eclampsia, chronic renal disease, chronic hypertension, antiphospholipid antibody syndrome, diabetes mellitus, twin gestation, hydatidiform mole ,age more than 40 years, high body mass index and African-American race[6]. The etiology of pre-eclampsia is unknown but is thought to be related to hypoxia in the placenta[7].The factors currently considered to be important include abnormal placental implantation, maternal immunological tolerance, cardiovascular, genetic, nutritional and environmental factors[8].Twin pregnancy is a risk factor for pre-eclampsia with a reported incidence of 2-3 times higher than singleton pregnancies due to increased placental mass.

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Aims and objectives:

1. To know and compare the prevalence of gestational hypertension and preeclampsia in singleton versus twin pregnancies.
2. To know and compare the prevalance of gestational hypertension and preeclampsia in monochorionic and dichorionic twins.

Material And Method

Hundred singleton and hundred twin pregnant ladies were selected randomly at 15 weeks of gestation attending our antenatal OPD Clinic.
Exclusion Criteria: Those patients who had conceived after ART and those with other medical and obstetric complications.

Women registered for the study were followed antenatally on O.P.D basis .In addition to routine examination and investigations, chorionicity of twins was established onUSG, done routinely at 15-16 weeks and confirmed at delivery. At each antenatal visit blood pressure and urine examination was done and noted. Patients were admitted at 36 weeks or earlier if and when needed. Patients were followed upto 6 weeks to confirm diagnosis of gestational hypertension. Those patients who did not turn up for follow-up were dropped from the study.

Observations

Among the 100 registered cases of twin pregnancies 5 were found to be monochorionic and 95 were dichorionic. 7% of singleton pregnancies were found to be associated with gestational hypertension and /or preeclampsia while as 13% of twin pregnancies were associated with gestational hypertension/preeclampsia. Among 5 monochorioic twin pregnancies only one had preeclampsia i.e.20%. 12 among 95 dichorionic twin pregnancies had gestational hypertension /preeclampsia.i.e13% .

Discussion

The incidence of preeclampsia is 2.6 times higher in twin pregnancies than in singleton pregnancies[9]. By our study the incidence of gestational hypertension/ preeclampsia 1.9 times higher in twin pregnancy. The incidence of both gestational hypertension (13% vs 6%) and preeclampsia (13% vs 5%) are significantly increased in women with twin pregnancies[10]. By our study twin pregnancies is more associated with gestational hypertension/ preeclampsia (13% vs 7%).

Twin pregnancy is less than 1/3rd as common in nullipara women under 20 years of age compared to women aged more than 35 years with 4 or more children[11]. As per our observation twin pregnancies are more common in multipara (>P-2) (40% Vs 10%) than in primipara women

Results & Conclusion

As per our Study:-
Twin pregnancies are more often associated with gestational hypertension/ preeclampsia (13 % vs 7%) than singleton pregnancies Monochorionic twin pregnancies are more 20% associated with PIH/preeclampsia than dichorionic twin pregnancies 13%.

Our study depicts that gestational hypertension/ preeclampsia is more common in twins especially monochronic twins. It may be due to presence of collateral/ aberrant circulation, but to draw a final conclusion it needs to be further evaluated.

Table I- Distribution of single vs twin pregnancies

Parity	Twins Pregnancies	Single Pregnancies
P-0	10	60
P-1	20	30
P-2	30	5
P-3	40	5
Total	100	100

Tabe II- Distribution of singleton pregnancies with respect to parity and associated Gest. hypertension / Preeclampsia

Parity	Single Pregnancies	Single Pregnancy associated with gestational hyper tension / Preeclampsia
P-0	60	4
P-1	30	2
P-2	5	0
P-3	5	1
Total	100	7

Table.III- Distribution of twin pregnancies with respect to parity and associated Gestational hypertension Preeclampsia

Parity	Monochronic Twins	Monochoronic twins wth Gest. hypertension/ Preeclampsia	Di chorionic twins	Dichronic Twins with associated Gestational/ hypertension Preeclampsia
P-0	0	0	10	2
P-1	1	0	19	3
P-2	2	0	28	4
P-3+	2	1	38	3
Total	5	1 (20%)	95	12 (13%)

References

1. Sibai BM, Hauth J, Caritis,S, etal. Hypertensive disorders in twins vs singletons gestations. Am J obstet Gynecol 2000;182:938
2. Kee Hak Lim,MD,Associate Professor,Department of Obstetrics and Gynaecology, Harvard Medical School,July 31,2009. Pre-eclampsia: eMedicine Obstetrics and Gynaecology.
3. Fernando Arias,Shrish N. Daftary,Amarnath G. Bhide. Hypertensive disorder of pregnancy. Practical guide to high risk pregnancy and delivery; 3 rd edition:398.

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4. A. K .Jan, M. Jamil. Management of pre-eclampsia and eclampsia. JPMI 2000; 14(11): 7-19.
5. Fernando Arias,Shrish N. Daftary,Amarnath G. Bhide. Hypertensive disorder of pregnancy. Practical guide to high risk pregnancy and delivery; 3 rd edition :421-431.
6. ACOG. Committee on Practice Bulletins- Obstetrics.Diagnosis and managementof pre-eclampsia. Obstet Gynecol 2001; 98:159-167.
7. H.H.Kay, S. Zhu,S. Tsoi. Hypoxia and lactate production in trophoblast cells. Placenta 2007;28(8-9):854-60.
8. Cunningham FG, Veno KJ, Bloom SL et al.Pregnancy Hypertension. In: Williams Obstetrics,23 rd edition.2010.
9. American College obstetricians & Gynecologist Committee of practice bulletins – obstetrics; society of maternal and fetal medicine: ACOG joint editorial committee ACOG practice bulletin #56: Multiple gestation: complicated twin, triplet & high-order multifetal pregnancy obstet. gyneacol 2004: oct;104(4):869-83.
10. Lamminpaa R, Vehvilainen julkunen K, Gissler M, Heinonen S, Pre- Eclampsia complicated by advanced maternal age : a registry – based study on primi parous women in finland. BMC Pregnancy childbirth 2012, Jun 11;12(1):47
11. Mac Gillivary I .Epidemiology of twin pregnancy senin perinatol 1986 Jan; 10(1):4-8