

PREVALENCE & CHARACTERISTICS OF MOTHERS WITH MULTIPLE PREGNANCIES AND ASSOCIATED LABOUR COMPLICATIONS AT MUHIMBILI NATIONAL HOSPITAL, SEPTEMBER 2005

BY SIKOSANA, MAJID. L. (MD 4 – 2005/2006)

ABSTRACT

Objective: To determine the prevalence & characteristics of mothers with multiple pregnancies and associated labour complications at Muhimbili National Hospital

Design: Retrospective Case control Study

Subjects/Materials: A hospital based retrospective study. All women who delivered (live and still births) at Muhimbili National Hospital between January 2005 and June 2005 only. The required information was obtained from the record books of the Department of Obstetrics & Gynaecology.

Results: Revealed incidence of multiple pregnancies was 30.1 per 1000 deliveries and a significant difference between the gestational ages at delivery between multiple pregnancies and

controls. The twin pregnancies approximately 3 times more likely to deliver prematurely (odd ratio 3.90 {1.08<OR<15.36}). There was no particular characteristic identified by this study that would put particular women at risk of having a multiple pregnancy.

Conclusion/recommendations: Multiple pregnancies continue to carry a high risk and women with multiple pregnancies should be offered extra care during the antenatal period with the specific objectives of early diagnosis and timely treatment of complications.

Correspondence to:

Majid L. Sikosana: +255 741 551 127

INTRODUCTION

Multifoetal pregnancies are high-risk pregnancies with a number of associated foetal and neonatal

complications. Multiple pregnancies often require aggressive neonatal intensive care, which is costly and stressful for the family and the infant. The foetal mortality rate for twins is 4 times the foetal mortality rate for single births. The neonatal mortality rate for twins is 6 times more than the neonatal mortality rate for single births¹. Monozygotic twins are twice as likely as dizygotic twins to be born with congenital malformations. Infants born from a multiple pregnancy are at a greater risk for infant mortality and CNS pathology such as cerebral palsy and physical problems that can result from premature delivery⁵. Multiple pregnancies are high-risk, with most complications two to three times more likely than for a pregnancy with one baby. Nearly every part of the multiple birth experience is different. Women carrying two or more babies need more calories, higher weight gain, more rest, and more intensive prenatal care.

METHODS

The retrospective case control study was carried out at Muhimbili National Hospital. The sample size of 58 multiple pregnancies was calculated. Eligibility criteria; All women who delivered (live and still births) at Muhimbili National Hospital (MNH) from January 2005 until the sample size was obtained. Exclusion criteria;_incomplete records during this time period.

The patients' records at MNH were reviewed and prepared check lists were used in order to collect important relevant information from the records.

Data obtained was entered into a computerised database and analysed using Epi-Info 2002 software package

TABLE 1

GESTATIONAL AGE	MULTIPLE PREGNANCY	CONTROL GROUP	P-VALUE
≤ 34 WEEKS	13 (22.4%)	4 (6.9%)	0.02
35 – 37 WEEKS	34 (58.6%)	40 (69.0%)	0.25
≥38 WEEKS	11 (19.0%)	14 (24.1%)	0.46
TOTAL	58(100%)	58(100%)	

The mean gestational age at the time of delivery was 35.2weeks and 36.4 weeks for the study group and the controls respectively. There was a significant difference between both groups which was statistically significant ($P<0.05$, for ≤ 34 weeks).The twin pregnancies approximately 3 times more likely to deliver prematurely (odd ratio 3.90 {1.08<OR<15.36})

TABLE 2

The data was taken from the month of January 2005 in order to obtain up to date current data and convince that recent data is easier to find. The control group consisted of the single pregnancies immediately registered after each multiple pregnancy case over the same period. (The controls were used for comparison against the mothers of multiple pregnancies)

Ethical issues were observed and confidentiality maintained Ethical clearance was obtained from MUCHS.

RESULTS

During the 3 month period (January 2005 – March 2005) it took to get the sample size of fifty eight (58). There were a total of 1922 deliveries at MNH, out of the fifty eight multiple births, there were fifty seven sets of twins and one set of triplets. This gives the incidence of multiple pregnancies of 30.1 per 1000 deliveries.

The age of the patients ranged from sixteen to thirty eight with a mean of **26.3** and **mode of twenty three years**. Age range for the control group was the same with a mean of **27.1** and a mode of **31 years**. Four (6.9%) of the patients had histories of previous multiple births while three (5.2%) of patients in the control group had histories of multiple births. The parity of the study cases ranged from 0 to 6, with a mean of 1.5, whereas the parity for the controls ranged from 0 to 4 with a mean of 1.4.

DELIVERY	MULTIPLE PREGNANCY	CONTROL GROUP	P-VALUE
SPONTANEOUS VAGINAL	28 (48.3%)	39 (67.2%)	0.03
CAESAREAN SECTION	14 (24.1%)	19 (32.8%)	0.30
ABD	8 (13.8%)	0	0.004
SVD/ABD	7 (12.1%)	0	0.006
LCVE	1 (1.7%)	0	0.30
TOTAL	58(100%)	58(100%)	

The mode of delivery in the study cases significantly differs from the controls. The incidence of Spontaneous vaginal delivery (SVD) was 28 (48.3%) in the patients and 39 (67.2%) which was significantly different (χ^2 4.28 $p=0.03$), meaning that single pregnancies are more likely to have SVD. The incidence of assisted breech delivery (ABD) was 8 (13.8%) babies for the multiple pregnancies, compared with none for the controls, this difference was statistically significant (χ^2 8.59, $p=0.004$). The incidence of SVD/ABD was 7 (12.1%) for the multiple pregnancies and none for the controls which was statistically significant (χ^2 =7.45 $p=0.0061$).

TABLE 3

BIRTH WEIGHT	MULTIPLE PREGNANCY (1 ST TWIN)	CONTROL GROUP	P-VALUE
< 1500 GRMS	7 (12.1%)	0	0.006
1501 – 2500 GRMS	33 (56.9%)	11 (19.0%)	0.00003
> 2500 GRMS	18 (31.0%)	47 (81.0%)	0.0000001
TOTAL	58(100%)	58(100%)	

The Birth weights for multiple and singleton pregnancies significantly differed, for <1500 gm 7 (12.1%) of the first twins fell into this group while none of the singletons fell into his range and this was significant (χ 7.45 $p=0.006$). For the next range of 1501-2500 gm 33 (56.9%) of the multiple pregnancies feel into this range while only 11 (19%) of the control feel here which was significantly different with the multiple pregnancy first twin having five times the risk of being this weight compared to a singleton pregnancy (χ^2 217.72 $p=0.00003$, Odds ratio 5.64 [2.27<)R<14.28]). For the 2500gm there were only 18 (31.0%) multiple pregnancy first twins in this range while there were 47 (81.0%) singletons which was also significant (χ^2 29.43 $p=0.0000001$).

TABLE 4

COMPLICATIONS	MULTIPLE PREGNANCY	CONTROL GROUP	P-VALUE
ABORTION	1(1.7%)	0	0.30
BIG BABY	2(3.4%)	0	0.15
BREECH	4(6.9%)	1(1.7%)	0.17
DISC PROLAPSE	1(1.7%)	0	0.30
ECLAMPSIA	4(6.9%)	1(1.7%)	0.04
IUFD	0	0	-
OBSTRUCTED LABOUR	2(3.4%)	4(6.9%)	0.40
PIH	3(5.2%)	1(1.7%)	0.30
POST PARTUM HAEMORAGE	2(3.4%)	0	0.15
PREVIOUS CAESAREAN	4(6.9%)	5(8.6%)	0.70
PROLONGED LABOUR	1(1.7%)	0	0.30

In all situations, the multiple pregnancy cases showed higher frequency in all the parameters measured, except for Obstructed labour and cases of previous caesarean. There was a significant difference in the Eclampsia incidence between the multiple and singleton (χ^2 4.14 $p=0.04$)

DISCUSSION

In the present study, the overall incidence of multiple pregnancies was 30.1 per 1000 deliveries. This is well above the intermediate range of 9 to 20 per 1000 in Europe and many African, American and Asian countries³, it falls in-between the values of two previous studies done in Tanzania, of which the south western highlands of Tanzania ranged from fifteen to twenty per 1000 deliveries, and in Kwimba district Mwanza region which had a prevalence of 39 per 1000 deliveries⁴. This value may not be as high above the intermediate due to the fact that Muhimbili National Hospital is the top referral hospital in the hospital, and twin pregnancies if diagnosed before labour would be sent here for delivery.

Multiple pregnancies are recognized as having an increased risk of complications during pregnancy, labour and delivery. In all situations, as in the literature¹ the multiple pregnancy cases showed higher frequency in all the parameters measured, except for obstructed labour and cases of previous caesarean. The most important complication of any pregnancy is delivery before term (before 34 weeks) and in multiple pregnancies entirely almost all complications are prematurity-related⁵. The study confirmed this, there was a significant difference between both groups which was statistically significant with multiple pregnancy. The twin pregnancies approximately 3 times more likely to deliver prematurely (odd ratio 3.90 $1.08 < OR < 15.36$). this coincides with a study done in Israel⁶. There was also a significant difference in the Eclampsia incidence between the multiple and singleton (χ^2 4.14 $p=0.04$), this could be due to a number of factors such as a higher amount of stress on the single placenta, making it more predisposed to damage and increasing the chances of Eclampsia, but further investigation has to be done to find the exact factors.

The mode of delivery in the study cases significantly differs from the controls which does coincide with other studies done, for example in a study done in Canada the caesarean section rate was 32.2% as compared with 3.6% for the singles pregnancy the difference again may be due to the

fact that Muhimbili hospital is the top most referral hospital in the country so most of the singleton deliveries are complicated ones and tend to be solved by Caesarean section. The still births for the twins was 9.4% (94 still birth per 1000 multiple pregnancy deliveries) compared to 3.4% (34 still births per 1000 singleton deliveries) (approximately 3 times higher) which coincides but not a high as a study done by **Terence Zach et al** which stated that the rate was higher. There was no particular characteristic identified by this study that would put particular women at risk of having a multiple pregnancy. This coincides with a study done by **Edwards RG, et al and Alikani M, et al**.

CONCLUSION & RECOMMENDATIONS

Multiple pregnancy continues to carry a high risk and women with multiple pregnancies should be offered extra care during the antenatal period with the specific objectives of early diagnosis and timely treatment of complications, but this can only be accomplished if the women go to antenatal clinics regularly and are examined by well trained health workers and by try by all means to deliver at a facility that can cater to their greater needs such as referral hospitals, but this is difficult in the third world where resources are limited and unfortunately these are the areas with very high incidences of multiple pregnancy.

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