



RESEARCH ARTICLE

MATERNAL AND FOETAL OUTCOME OF TWIN PREGNANCY IN
A TERTIARY MATERNITY HOSPITAL IN SUDAN

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ABSTRACT

Background: Twin pregnancy is considered as one of high risk for both mother and baby with variable incidence worldwide.

Methods: This was a prospective, observational, hospital based study that was carried out in Omdurman maternity hospital during the period September 2012 to February 2013, 112 ladies with twin pregnancy and their respective babies were included in the study. Maternal and neonatal data were recorded using a specifically designed questionnaire. Data was processed and analyzed using SPSS Program.

Results: The study revealed that the prevalence of twins was 3.34%, most of the women lied between the age group 23-32 years. 57 (50.9%) of the women had previous history or family history of twins, the commonest antenatal complication encountered was severe urinary tract infection in 79(70.5%) followed by hyper emesis gravidarum in 52(46.4%) and anaemia in 43(38.4%). The main postpartum complication was postpartum haemorrhage in 39(34.8%). Most of the babies (81.3%) needed admission to the neonatal unit. The study revealed that 60.4% of the babies had low birth weight, prematurity was 66% among the study group. Early neonatal mortality rate was found to be 196/1000 among the study subjects.

Conclusion: Twin pregnancy is a significant risk factor for maternal and perinatal morbidity and mortality in low-resource settings.

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INTRODUCTION

Twin pregnancy is considered as a high risk pregnancy with variable incidence worldwide. In USA it has been reported constant as 32/1000 births (Chauhan *et al.*, 2010), Japan has the lowest incidence 4/1000, whereas African countries have higher incidence of twins, up to 54/1000 births reported from Nigeria (Fisk, 2007). There has been an increase in incidence of twins due to multiple reasons such as a rise in the number of women conceiving at an advanced age and in increase in use of assisted reproductive techniques (Cruikshank, 2007). Twin pregnancy is associated with a high risk of maternal and neonatal complications such as preterm labour, pregnancy-induced hypertension, antepartum and postpartum haemorrhage, fetal malformations, and perinatal death (Azuibike, 1980; Neilson, 1994).

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Prematurity which is the commonest antenatal complication accounts for the majority of perinatal death (Herruzo *et al.*, 1991). Multiple pregnancies in low income countries like Sudan pose higher fetomaternal risks due to a scarcity of human and material resources, which in turn is reflected into inappropriate care during pregnancy and delivery (Smits and Monden, 2011). As a result multiple pregnancies in developing countries expose mother and infants to extremely high risks. There are limited information about maternal-fetal outcome and complications of twins' pregnancy in Sudan. In a retrospective study done in the central part of Sudan during the period 1985 to 1999, the study included the follow up of 597 twin pregnancies and 30 triplet pregnancies and revealed significant maternal and perinatal mortality with a perinatal mortality rate of 115/1000 for twin and 223/1000 for triplet pregnancy (Dafallah and Yousif, 2004). The main aims of this research were to find out the prevalence of twins and to study maternal complications and early neonatal outcome of twin pregnancies delivered in a tertiary care maternity hospital in Sudan.

MATERIALS AND METHODS

This was a prospective, observational, hospital based study that was carried out in Omdurman maternity hospital which is the largest maternity hospital in Sudan during the period September 2012 to February 2013. Only women with twins' pregnancy who delivered in Omdurman maternity hospital were included in the study, those with high order pregnancy (triplets and quadruplets) and those who refused to participate were excluded from the study. 112 ladies with twin pregnancy and their respective babies were included in the study. Sampling technique was total coverage during the study period. Data was collected using a specifically designed questionnaire filled out by the researchers, maternal data included maternal age, past history or a family history of multiple pregnancy, antenatal follow up, antenatal complications, mode of delivery and postnatal complications. Neonatal data included gestational age, birth weight, Apgar score, need for neonatal unit admission and death. Data was collected and a master sheet was performed, the data was then processed and analyzed using Statistical Package for Social Sciences program (SPSS) version 16. Frequency analysis for back ground variables was conducted. Ethical approval for conducting this research was granted by the ethical committees of the University of Medical sciences and technology as well as Omdurman maternity hospital. Prior informed consent was obtained from individual subjects with full explanation of the study.

RESULTS

During the study period a total of 112 twin deliveries were conducted in this tertiary care institute with a total number of deliveries of 3351 during the study period giving a prevalence of twins of 3.34%. Classification of the study subjects according to their ages, showed that 36 (32.1%) of them were falling within the age group (28-32) years, whereas 35 (31.3%) lied within the age group (23-27) and only 9(8%) were above the age of 38 years Table (1). When the respondents were classified according to their gravidity, it was noticed that 25 (22.3%) of them were Gravida 4 whereas 24 (21.4%) were Gravida 1, with an average number of gravidity of almost 4 Table (2). Likewise the parity of the subjects is shown in Table (3). The study showed that 57 (50.9%) of them have previous history or family history of twins. Regarding the type of conception, it was noticed that 85 (75.9%) had spontaneous conception, whereas 19 (17%) had IVF conception and 6(5.3%) had induction of ovulation by medications. Less than half the subjects (42.9%) had regular antenatal care and most of them (74.1%) had ultrasound scanning during pregnancy and 15(13.3%) didn't know that they were carrying twins.

The commonest antenatal complication encountered was severe urinary tract infection in 79(70.5%) followed by hyper emesis gravid arum in 52(46.4%) and anaemia in 43(38.4%) Table (4). The main postpartum complications among the study group were postpartum haemorrhage in 39(34.8%) and in 34(087.2%) it was primary post-partum haemorrhage. Postpartum depression was found in 38(33.9%) and unfortunately there was one maternal mortality during the study period who died of severe preeclampsia.

Table 1. Maternal age group

Age group	Frequency	Percent
From 18 to 22 years	13	11.6%
From 23 to 27 years	35	31.3%
From 28 to 32 years	36	32.1%
From 33 to 38 years	19	17.0%
More than 38 years	9	8.0%
Total	112	100.0%

Table 2. Maternal Gravidity

Gravidity	Frequency	Percent
1	24	21.4%
2	17	15.2%
3	13	11.6%
4	25	22.3%
5	12	10.7%
6	8	7.1%
7	5	4.5%
8	6	5.4%
9	2	1.8%
Total	112	100.0%

Table 3. Maternal Parity

Parity	Frequency	Percent
1+0	17	19.3%
2+0	12	13.6%
2+1	9	10.2%
2+2	1	1.1%
3+0	16	18.2%
3+1	1	1.1%
4+0	11	12.5%
5+0	7	8.0%
6+0	6	6.8%
6+2	1	1.1%
7+0	6	6.8%
8+0	1	1.1%
Total	88	100.0%

Table 4. Antenatal complications

Antenatal period	Frequency	Percent
Hyperemesis gravidarum	52	46.4%
Severe constipation	39	34.8%
Severe UTIs	79	70.5%
Anemia	43	38.4%
Gestational diabetes	9	8.0%
Gestational hypertension	22	19.6%
Depression	27	24.1%
Bleeding	14	12.5%
Others	2	1.8%
Total	112	100%

Regarding neonatal outcome, most of the babies (81.3%) needed admission to the neonatal unit. The study revealed that 60.4% of the babies had low birth weight, prematurity was 66% among the study group. When APGAR score was assessed and it was low (less than 7 at 5 minutes) in 37.4% of the babies. Early neonatal mortality rate was found to be 196/1000 among the study subjects.

DISCUSSION

Twin pregnancy is considered as one of high risk for both mother and baby. The present study revealed a prevalence rate of twins of 3.34% which is higher than what is reported in other studies(Vogel *et al.*, 2013), this could be mainly due to

referral of twin pregnancies to this tertiary hospital for better neonatal care of low birth weight and premature babies. Most of the mothers in this study were falling between the age group 23-32 years of age which is quite similar to results from other studies (Spellacy *et al.*, 1990; Yuel and Kaur, 2007). The increase in incidence of twinning in this age group can be explained by early marriages resulting in infertility requiring ovulation induction. In the present study, mothers with twin pregnancy had a higher rate of anaemia (38.4%) which is in line with previous reports (Qazi, 2011; Sultana *et al.*, 2011) however the higher rate in our study may be due to reduced iron reserves that exist prior to conception (Lone *et al.*, 2004). Our data revealed that postpartum haemorrhage was found in 34.8% which is much higher than other reports (Enid *et al.*, 2014; Musili, 2009). The lower postpartum haemorrhage rate in the other studies could be attributed to increased access to quality emergency obstetric care, in particular the use of active management of the third stage of labour. The present study showed that hypertensive disorder of pregnancy was found in 19.6% which is in accordance with other studies (Walker *et al.*, 2004; Gyamfi, 2005).

With regards to neonatal outcome, our data showed 66% rate of prematurity, which is lower than 88% reported in an Indian study (Bangal *et al.*, 2012) and higher than what is reported (44%) by Chaudhary *et al.* (Chowdhury and Hussain, 2011), the higher rate of prematurity in twin pregnancy can be explained by uterine over distention and associated complications that require early intervention for termination of the pregnancy. The study revealed that 60.4% of the babies had low birth weight, which is lower than 82% reported in an Indian study (Bangal *et al.*, 2012) and slightly higher than reported (51.3%) by Australia's Mothers and Babies, AIHW, 2011 for twin pregnancies (AIHW, 2011). This difference could be explained by frequency of antenatal visits and associated maternal complications. Our data indicated that early neonatal mortality rate was found to be 196/1000 live births among the study subjects. This is slightly higher than the Jordanian study which showed a rate of 178 per 1000 live births (Ziadeh, 2000) but much higher than in the USA where the infant mortality rate for twins was 56.6 per 1000 live births (Honlihan and Knuppel, 1996). The main cause of mortality in twin pregnancy is prematurity as stated in many studies (Herruzo *et al.*, 1991; Ziadeh, 2000; Koram and Kamdom, 1995).

Conclusion

Twin pregnancy is a significant risk factor for maternal and perinatal morbidity and mortality in low-resource settings. There is need to identify these cases early in order to provide good antenatal care and deliver them in hospitals with facilities for neonatal and maternal intensive care.

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