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The Problems of Multiple Pregnancies Delivered and Clinic Observations

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Abstract

Although the incidence of multiple pregnancies is between 1%and 2%among whole births, it constitutes 10-12% of all perinatal mortality. In this study, we aimed to expose causes of perinatal mortality and morbidity affecting factors on neonates, who hospitalized in Neonatal Intensive Care Unit, and multiple pregnancies resulted with and without intervention throughout a 2-year period in our hospital. In our study, morbidity and mortality in newborns born from multiple pregnancy were evaluated retrospectively among 5065 patients who born greater than 24weeks of gestation within the last 2years and admitted to our hospital delivery unit. 91 pregnancy cases resulted with 185 neonates, including 88twins and 3triplets, were included in this study.

The rate of multiple pregnancies was 1.79%in total pregnancies. 89.1%of multiple pregnancies was spontaneous pregnancy. Assisted Reproductive Techniques was used in 10% of cases. However, 82% of women with multiple pregnancy delivered by C/S, only 18% via normal spontaneous vaginal delivery. As the result, there was no significant difference between birth weights of the babies who stayed in Neonatal Intensive Care Unit. The only way to minimize prematurity and its problems in multiple pregnancies, in order to reduce morbidity and mortality, is possible via transport to a hospital which had 2-3 level neonatal intensive care service.

Key words: Pregnancy, newborn, morbidity, mortality

Introduction

The rates of morbidity and hospitalization to Neonatal Intensive Care Unit (NICU) of infants who born from multiple pregnancies, is higher than singleton babies. Although the frequency of multiple pregnancies is 1-2% of all births, it constitutes 10-12% of all perinatal mortality. This rate is a 5-10 times increased risk when singleton pregnancy is compared with (1,2). The rates of perinatal mortality increases with raise of the number of fetuses in multiple pregnancies (50/1000 in twins, 120/1000 in triplets). The common reason is increased number of premature births and exhibited problems of neonatal prematurity (3,4).

Monozygotic twins all over the world are almost at the same rate (4/1000), while the regional differences are perceived in dizygotic ones (5,6). The incidence of multiple pregnancy has increased in recent years due to usage of(5). The possibility of occurring pregnancies naturally is about 1/80 (1.25%) for twins, 1/7000 for triplets, 1/600.000 for

quadruplets, while the incidence of twins with Assisted Reproductive Techniques (ART) has been reported as 18-53% (5). NICU have been crucial problems due to increasing multi-fetus implantation via using of ART.

In this study, because of there have been no similar study in this region, we aimed to expose affecting factors of perinatal mortality and morbidity on neonates, who hospitalized in neonatal intensive care unit, and multiple pregnancies resulted with and without intervention throughout a 2-year period in our hospital.

Materials and Methods

In our study, morbidity and mortality in newborns born from multiple pregnancy were evaluated retrospectively among 5065 patients, who born greater than 24 weeks of gestation within the last 2 years and admitted to our hospital delivery unit. All multiple pregnancies between 24 and 40 weeks of pregnancy were compared in point of gestational age at birth, birth weight, mode of delivery, birth weight discordance, neonatal mortality and morbidity, requirement of neonatal intensive care and applications of neonatal treatments.

Results

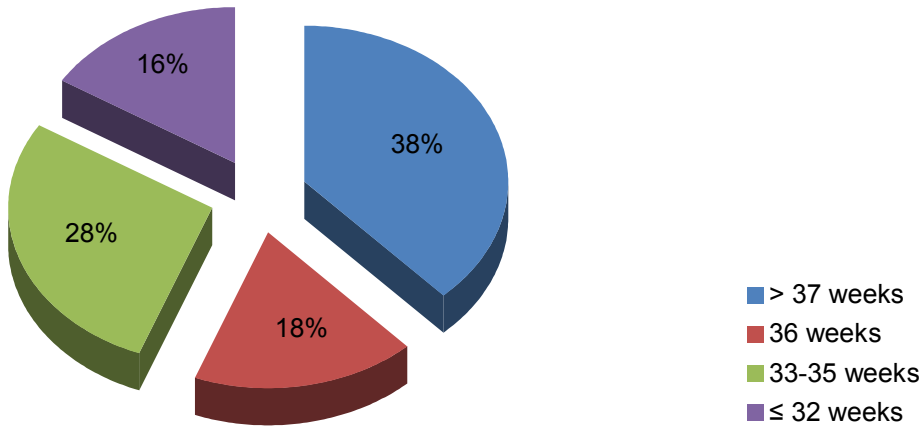
The ninety-one pregnancies, including 88 twins and 3 triplets, resulted as 185 newborns, and were studied in hospital within the last two years. The three babies born from triplet pregnancy were forwarded to another center outside (Table1). 40.5% of 185 infants included to the study were male and 59.5% of them were female. 89.1% of multiple pregnancies were spontaneous pregnancy.

ART was used in 10.9% of multiple pregnancies (10 of 91 cases). All patients undergoing ART were settled in the NICU unit and all of them were delivered as premature. The rate of premature birth of infants used ART was 80%.

Table-1: The number of newborns and pregnant women delivered in our hospital.

	Pregnant		**Infant**	
Singleton pregnancy	4974	% 98	4974	% 96.3
Twin pregnancy	88	% 1.7	176	% 3.5
Triplet pregnancy	3	% 0.3	9	% 0.2
Total	5065	% 100	5159	% 100

82% of women with multiple pregnancy was born by the Cesarean section (C/S), while only 18% of them had a normal spontaneous vaginal delivery. Distribution of infants was examined according to gestational weeks and the percentages are shown in graph 1.



Graphic-1: Distribution according to gestational age infants

9 of the 79 infants who admission made to NICU, were born as 37 weeks and above, while 70 babies were delivered as premature. Twenty-one of twin pregnancies and nine of three triplet pregnancies in the premature infants, totally 30 babies, were born as gestational age of 32 weeks and below.

Among all babies, the lowest birth weight was 430g, the highest birth weight was 3600 g and the average birth weight was 2255g. The average birth weight of discharged infants who followed up next to his mother in delivery unit was 2458 g, while the average birth weight of babies laid to NICU was 1923g. 103 infants were diagnosed with low birth weight (LBW), 12 infants with very low birth weight (VLBW) and 7 infants with extremely low birth weight (ELBW) among 122 babies who had low birth weight (birth weight <2500g).

When the hospitalization period of babies, who born from multiple pregnancies, was examined according to the number of babies, the average length of hospitalization was 10 days for twin babies and 24 days for triplets.

Whereas 79 patients who made admission to NICU unit of our hospital were examined about the major causes of morbidity, respiratory distress syndrome (RDS) was occured in twenty-one percent of all infants and fifty-one percent of infants (Table 2). 15 infants (19% of those hospitalizations) were diagnosed with the RDS and received surfactant therapy. Symptoms of RDS were developed in thirty percent of twin babies, and also in whole triplets. 7% of twins received the diagnosis of RDS, while 44% of triplets received RDS.

Table 2: The morbidity rates of patients hospitalized in NICU

Cause of Morbidity	Number of patients	%
Hyperbilirubinemia	53	69
Respiratory distress	39	51
Hypoglycemia	19	25
Sepsis	14	18
Polycythemia	8	10
Anemia	7	9
NEC	5	6

In our study, 21% of babies who were born from multiple pregnancies developed respiratory distress complaints, while 51% of the hospitalized babies developed these complaints. 19% of hospitalised infants received the diagnosis of RDS. The risk of developing RDS and respiratory distress is associated with birth weight (p=0.00), gestational weeks (p=0.00) and usage of ART (p=0.011). However, it is not associated with mode of delivery or gender (p=0.815).

There were discordance among twenty twin babies (11%) and all of these babies were also obligated admission to NICU unit. Hospitalization rate of twins who had no discordans was thirty-two percent.

Polycythemia was determined in 4.4% of all infants and 8 of 79 babies were delivered as twins or triplets (proximate 10%). In our study, Necrotizing Enterocolitis (NEC) was developed in 5 infants (6.3%) hospitalized to NICU Unit.

Patients with developed NEC compared to those with undeveloped NEC, the gestational age was statistically significantly lower in first group (p=0.001).

11 infants (6%) who delivered from multiple pregnancies were diagnosed as Intrauterine Growth Restriction (IUGR) during pregnancy follow-up. The nine infants among them were laid to NICU unit. IUGR were found to be 11% in twin, 5.6% in triplet infants.

Six of 185 infants (%3.9) included this study were concluded as exitus. 105 infants (56.8%) had been discharged from delivery unit of the hospital with their mothers.One infant (0.6%) was died without giving response to resuscitation after delivery in this unit. Seventy infants of the hospitalised seventy-nine (42.7%) patients were discharged from NICU unit. Results of three infants could not be reached and five infants were died.

Discussion

Premature deliveries are the most important cause of neonatal morbidity. Approximately 25% of them are caused by multiple pregnancies in a study done by Chan et al (7). 35-40% of twin pregnancies is resulted as premature birth and so that increases morbidity, also mortality (8).

Perinatal mortality and morbidity were significantly increased before 35 weeks of gestation reported, after eight thousand twin pregnancies was studied prospectively by Hartley et al (9). We concluded in this study that there was a significantly higher morbidity before 32 weeks of gestation. Mortality rate of infants born between 24-32 GW was 26% and hospitalization rate of them was 94%. No mortality was observed in infants born between 32-35 GW and hospitalization rate of them was 93%. Mortality rate of infants born in the 36-37 GW was 4.7% and hospitalization rate of them was 80%.

No mortality was observed in infants born after 37 GW and hospitalization rate of them was 22%.

Triplets and a greater number of multiple pregnancies had higher rates at preterm delivery. 42% of babies in this group delivered in 32 weeks, while 14% of them delivered before 28 weeks. 73% of them show the need for neonatal intensive care unit (10). In our study, whole triplet pregnancies and babies delivered before 32 GW were hospitalized. This high rate is not compatible with the literature due to the lack of the number of baby triplets (11).

It was reported that female fetuses were observed more frequently compared to men in multiple pregnancies (1,12). In our study, female ratio was 40% and male ratio was 40%. Also, it was found to be compatible with the literature. Moise et al. observed LBW of twins as 60-70% (13). In our study, ELBW birth rate was 5%, VLBW birth rate was 9% and LBW birth rate is 86% in twins. 36% of babies were born weighing 2500 g or more. ELBW birth rate was 11%, VLBW birth rate was 22% and LBW birth rate is 67% in triplets.

Consisting of multiple pregnancies and prematurity are reported to be the most important contribution to development of adverse pregnancy outcomes after ART (14,15).

In our country, the frequency of preterm birth in twin pregnancies resulting from ART was seen more than spontaneous twin pregnancies, as compared in a controlled study done by Guney et al (55% vs. 47%).

In our study, the frequency of prematurity in spontaneous multiple pregnancies was 79% among the hospitalized infants. The incidence of prematurity in multiple pregnancies with ART has been identified as 100%. This high rate is based on not detecting the age of some babies who were discharged form delivery unit and possessing high prematurity rate during hospitalization.

Rates of caesarean section (C/S) with rigard to the mode of delivery in multiple pregnancies were higher in our study beside the literature. Victoria et al. found as 36.8% in their study and Leduc et al. reported this rate as 44.4% section, while the rate of cesarean section in multiple pregnancies between 24-40 GW was 77.5% (13). Contribution of multiple pregnancies is obvious by the way of increasing caesarean section rates in our country. In the study of Güney et al. Cesarean rate has been reported as 84% in IVF twins and 67% in spontaneous twins (12).

In this study, as we looked at forms of multiple pregnancies, cesarean section birth rate was found as 82%. Otherwise in spontaneous twins, its rate found as 80%. All pregnant applied ART were born with cesarean section. C/S indications of patients received to this study were also seen in table 3.

Table 3: Indications for Caesarean Section

Indications for C/ S	Number of patients
First Baby (Nonvertex)	64
Preeclampsia	18
Elective	16
Preterm delivery	12
ART	10
CPD	10
Fetal distress	10
Old C/S	9
Labor progress	5
HELLP	4
Uterine anomaly	3

Note: More than one indication is given for some patients

Birth weight between the two fetuses was 20% or measurement of hemoglobin was more than 5g/dl, made us think for diagnosis of Twin-to-Twin Transfusion Syndrome (TTTS) (16-19). We have detected incidence of TTTS as 11% in our study. The rate of polycythemia was found as 15% in these cases and the rate of hyperbilirubinemia as 55%, and was more often than non-TTTS twin pregnancies.

Vergani et al. focused on the prognostic significance of the difference in between weight of twins (big weight - small weight / heavy weight). The presence of being above 30% of the mortality rate was observed ascending morbidity (15). We conclude that discordance between the twins increased incidence of morbidity.

Although the morbidity rate was 100% in the babies with discordance, morbidity rate was 32% in patients without discordance.

The incidence of sepsis is 5-8 percent per 1000 live deliveries in general population of newborns. In a study conducted in Turkey, the frequency of sepsis in NICU units was around 5%. In our study, incidence of sepsis was 8% of all multiple pregnancies, while sepsis incidence in twins was 5.6% and in triplets were 55% (20). Hypoglycemia is the most important metabolic problem causing the sequelae in newborns. Prematurity and IUGR, which observed more frequently in multiple pregnancies than in singleton pregnancies, also increase the risk of hypoglycemia. In our study, hypoglycemia was found in 25% of babies hospitalized. The risk of hypoglycemia was increased as correlated with gestational age and reduction of birth weight.

There is no additional risk increasing multiple pregnancies for necrotizing enterocolitis, which is an important cause of morbidity especially in premature babies. In our study, necrotizing enterocolitis developed in 6.3% of infants who are hospitalized. The development of NEC was associated with prematurity and gestational age.

Polycythemia and hyperviscosity are quite common. In general population of newborn, various studies have been reported rates as between 0.4% and 12%. Our study was consistent with this study.

Conclusion: High perinatal mortality and morbidity in multiple pregnancies couse to increase maternal morbidity. Both premature birth and risk of prematurity in multiple pregnancies and increase of risk from ART make even more important to approach

patients with infertility. These risks should be explained in detail to couples with infertility treatment. The multiple pregnancies need to be reduced by ensuring embryo transfer as little as possible or use of a minimum level of gonadotropin In addition, in order to reduce morbidity and mortality, prenatal transport of multiple pregnancies to hospital whish has 2. and 3. level neonatal intensive care services has a great importance.

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