Retrospective Analysis of 660 Stillbirth Cases During Ten Years Period

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Abstract

Objective: The aim of this study was to analyze 660 stillbirth cases retrospectively during 10 years period.

Methods: We evaluated 660 stillbirth cases (group1) retrospectively during 10 years period in our clinic. Maternal age, parity, prepartum estimated gestastional week, birth weight, vaginal and abdominal delivery ratio, cesarean section indications, fetal anomalies, maternal diseases were evaluated and compared with 660 women (group2) who had given live births .

Results: The ratio of stillbirth was 4.91% during ten years period. Multiparity was 73.63% in cases. Prepartum estimated mean gestasional week was 33.8 ±3.9 in stillbirths and 25.75% of women had undergone cesarean section. Gestasional hypertension 33.78%, gestasional diabetes mellitus 1.0%, and type II diabetes mellitus were 0.3% in group 1. Fetal abnormality was found 12.12% in stillbirths. Pregnancy induced hypertension ratio was in group 1 and group 2 33.78%, 13.18% respectively (p<0.001). Cesarean section ratio were 25.75% and 46.21% in group 1 and group 2 respectively (p<0.001). The most seen cesarean endication was abruptio placentae (%12.87) in group 1. Fetal anomaly ratio were 12.12% and 3% in group 1 and group 2 respectively (p<0.001). Mean birth weight were 2121±1200 g and 2828 ±979 in grup 1 and in group 2 respectively (p<0.001).

Conclusion: Gestational hypertension, fetal anomalies and placental abruption are the most common causes of fetal demise in our study. Our stillbirth ratio is higher than literature. High delivery rate, inadequacy of pregnant visits, inefficiency of antenatal care centers for high risk pregnant patients can increase ratio in our region. Improvement of antenatal care units in primary and secondary health centers may decrease our stillbirth ratio.

Keywords: Stillbirth, gestational hypertension, fetal anomaly, antenatal care.

On yıllık 660 ölü doğum olgusunun retrospektif analizi

Amaç: Kliniğimizde on yıllık sürede ölü doğum yapan 660 olguyu retrospektif olarak değerlendirmek.

Yöntem: Kliniğimizde 10 yıllık sürede gerçekleşen 660 ölü doğum olgusu (grup 1) retrospektif olarak incelendi. Olgular anne yaşı, paritesi, prepartum tahmini gebelik haftası, yenidoğan ağırlığı, normal vajinal ve abdominal doğum oranı, sezaryen endikasyonları, fetal anomaliler, maternal hastalıklar yönünden değerlendirildi ve olgular canlı doğum yapan random olarak seçilen 660 gebe (grup 2, kontrol grubu) ile karşılaştırıldı.

Sonuçlar: On yıllık sürede ölü doğum oranı %4.91 bulundu. Olguların %73.63'ü multipar, prepartum tahmini gebelik haftası 33.8±3.9 olarak bulundu ve %25.75'inin sezaryen ile doğum yaptığı belirlendi. Gebelikte görülen tüm hipertansif hastalıklar %33.78, gestasyonel diabetes mellitus %1.0 ve tip 2 diabetes mellitus %0.3 oranında bulundu. Ölü doğan fetusların %12.12'sinde fetal malformasyon saptandı. Gebeliğin indüklediği hipertansiyon grup 1 olgularında %33.78, grup 2'de %13.1 olarak bulundu (p<0.001). Sezaryen oranı grup 1'de %25.7, grup 2'de %46.21 olarak bulundu (p<0.001). Grup 1 olgularının %25.75'inin doğumunun sezaryen ile gerçekleştiği ve en sık sezaryen endikasyonunun dekolman plasenta (%12.87) olduğu saptandı. Ortalama yenidoğan ağırlığı grup 1'de 2121±1200g, grup 2'de 2828 ±979g olarak belirlendi (p<0.001).

Tartışma: Çalışmamızda sık görülen ölü doğum nedenleri gebelikte görülen hipertansif hastalıklar , fetal anomaliler ve dekolman plasenta olarak saptanmıştır. Ölü doğum oranımız literatürden yüksek bulundu. Bölgemizde doğum oranımızın ve gebelik

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süresince düzenli takip altında olmayan gebelerin yüksekliği ve yüksek riskli olarak saptanan gebeliklere hizmet verecek merkezlerin yetersizliği ya da mevcut merkezlerin eksik tedavisi oranımızın yüksekliğini açıklamaktadır.

Sonuç: Birincil ve ikincil merkezlerde antenatal bakım hizmetlerinin arttırılması ölü doğum oranını azaltabilir.

Anahtar Sözcükler: Ölü doğum, gestasyonal hipertansiyon, fetal anomali, antenatal bakım.

Introduction

Delivery after 20 weeks' gestation in which the infant displays no sign of life during perinatal or postnatal period or weighs than 500 grams is called stillbirth. In recent years, rate of stillbirths has shown a decline from 11.5/1000 to 5.1/1000 in parallel to the developments in the obstetric, clinic, genetic and maternal-fetal medicine. The most common known four causes of stillbirths are infection, malformation, intrauterine growth retardation and abruptio placentae. Also, causes with unknown etiology have a significant portion.[1]

The objective of our study was to retrospectively evaluate the cases who were referred to our clinic due to in utero mort fetus and those who were diagnosed with in utero mort fetus and delivered in our clinic in aspects of maternal age, parity, birthweight, vaginal and abdominal delivery ratios, indications for caesarean section, fetal anomalies and maternal diseases.

Methods

Doğum Out of 13,431 deliveries realized in the Obstetrics Clinic between June 1, 1994 and June 1, 2004 for a period of 10 years, 660 stillbirths were retrospectively evaluated. All data about the cases were obtained from computer records, registration books and patient files. Those cases of 660 stillbirths were considered Group 1 while randomized 660 cases with livebirths in our clinic comprised the Group 2. We evaluated the maternal age, parity, birthweight, delivery method, indications for caesarean section, fetal anomalies and maternal diseases for both groups. Records showed that the gestational age and absence of any fetal cardiac activity were determined by obstetric ultrasonography for all cases. Fetal anomalies had been detected by prenatal ultrasonography and findings of postpartum physical examination on the fetus.

Statistical analysis of the data was made by SPSS (Statistical Package for Social Science) version 10.0. For analysis, Chi-square and Student-t test were used, and $p<0.05$ was considered statistically significant.

Results

A total of 13,431 deliveries had been realized in our clinic within a period of 10 years, and 660 of these deliveries were (4.91%) stillbirths. The mean maternal age was 30.5 ±7.2 years in Group 1 and 29.9 ±5.6 years in Group 2 ($p>0.05$). The mean prepartum estimated gestational week was 33.8 ±3.9 in Group 1 and 34.9 ±3.2 in Group 2 ($p>0.05$). All pregnancy-related hypertensive disorders were found in 33.78% of Group 1 cases (26% preeclampsia, 6% chronic hypertension, 1,8% eclampsia), and in 13.18% of Group 2 cases (12,18% preeclampsia, 1% eclampsia) ($p<0.001$). In Group 1, 1.0% gestational diabetes mellitus (diagnosed by 100 gr Oral Glucose test) and 0.3% Type 2 diabetes mellitus were found while a maternal mortality due to intraabdominal hemorrhage secondary to uterus rupture was observed (Table 1). 25.75% of the deliveries in Group 1 was caesarean section, and the most frequent indication for caesarean section was abruptio placentae (12.87%) whereas in Group 2, the ratio of caesarean section was 46.21% and the most frequent indication for caesarean section was a previous caesarean section. Indications for caesarean section in the Group 1 cases are shown at Table 2. Also, three of cases (0.45%) in the Group 1 underwent ceasarian hysterectomy due to uterus rupture (Porro operation).

The mean birthweight was 2121 ±1201g in Group 1, and 80 cases (12.12%) had fetal malformation. Among malformations, the most frequent ones were cerebrospinal anomalies (68.7%) and immune hydrops fetalis (10%); the diagnosis for

Table 1. Demographic characteristics, gestational hypertension ratio, delivery methods ratio, mean birthweights and fetal anomalies of the cases in Group 1 and Group 2.

Maternal and fetal characteristics	Group 1 (Mean ±SD)	Group 2 (Mean ±SD	p
Maternal age	30.5±7.2	29.9±5.6	>0.05
Gravida	4.2±2.3	3.3±1.1	>0.05
Parity	3.2±1.2	2.4±1.1	>0.05
Gestational week	33.8±3.9	34.9±3.2	>0.05
All hypertensive conditions experienced in pregnancy	223 (%33.78)	87 (%13.18)	<0.001
Delivery by caesarean section	170 (%25.75)	305 (%46.21)	<0.001
Mean birthweight (g)	2121±1200	2828 ±979	<0.001
Fetal anomalies	80 (%12.12)	20 (%3.03)	<0.001

Table 2. Distribution of indications for ceaserian section in Group 1

Indications	n	%
Apruptio placenta	85	50
Previous caesarean section	30	17.6
Macrosomic infant	10	5.8
Arm prolapse	9	5.2
Cephalopelvic disproportion	9	5.2
Placenta previa totalis	7	4.1
Uterus rupture	6	3.5
Nonprogressive labor	4	2.3
Transverse position	3	1.7
HELLP syndrome	2	1.1
Development of primigravid anus	2	1

Table 3. Distribution of fetal anomalies detected in Group 1

Distribution of fetal anomalies	n	%
Anencephaly	23	28.7
Hydrocephaly	12	15.0
Immune hydrops fetalis	8	10.0
Meningomyelocele	7	8.7
Ensephalocele	5	6.2
Skeletal displasia	5	6.2
Anencephaly + spina bifida	4	5.0
Gastroschisis	3	3.7
Holoprocencephaly	3	3.7
Omphalocele	2	2.5
Cystic hygroma	2	2.5
Sacrococcygeal Teratoma	2	2.5
Encephalocelel+spina bifida	2	2.5
Vertebral colon aplasia	1	1.2
Down syndrome	1	1.2

immune hydrops fetalis was made by indirect coombs test positivity and obstetric ultrasonography (Table 3). In Group 2, the mean birthweight was 2828 ±979 g ($p<0.001$), and 20 cases (3.03%) had fetal malformation ($p<0.001$). Among malformations, the most common ones were cerebrospinal anomalies (77%) and hydrops fetalis (8%). Rate of fetal anomaly was 3.0% in Group 2 (12 anencephaly, 4 immune hydrops fetalis, 4 meningomyelocele) ($p<0.001$). All fetal malformations detected were resolved in our clinic.

Discussion

Stillbirth means delivery after 20 weeks' gestation in which the infant displays no sign of life during perinatal or postnatal period or weighs less than 500 grams. They can occur due to fetal, placental or maternal causes.[1] Although stillbirths are mainly observed during early gestational weeks, 80% of such deaths occur before term.[2] We have found that the mean gestational week of stillbirths was 33.8±3.9.

Fetal anomalies are one of the causes of death. Gürel et al. found a ratio of 9.8% for fetal anomalies per,[3] 800 stillbirths. The rate of fetal anomaly was 12.12% in our study. It was significantly higher than the fetal anomaly rate in the control group. Neural tube defect (NTD), hydrops fetalis, isolated hydrocephaly are the most common fetal anomalies leading to stillbirth. Of NTD cases, anencephalic fetuses are either born dead or die right after the delivery.[4,5] In our study group, among fetal anomalies, cerebrospinal anomaly was at the first place with 68.7%, which was followed by hydrops fetalis with 10%. Anencephaly was the most frequent type of cerebrospinal anomaly (28.7%).

Abruptio placentae was the most common anomaly among placental causes leading to stillbirth. In a study carried out on 278 stillbirths, Fretts et al.[6] found the rate of stillbirth associated with abruptio placentae as 14% . Again in a study carried out with 40,000 pregnant women in the Parkland hospital, it was found out that 12% of stillbirths were associated with abruptio placentae.[1] In parallel to the literature, we have found a rate of 12.87% for abruptio placentae. Önderoğlu et. al.[7] revealed that 326 out of 513 pregnant women

who had a stillbirth were multiparous, and the most common cause of death (32,5%) was maternal hypertension. However, Gürel et al.[3] reported that 29.5% of stillbirths were resulting from preeclampsa and eclampsia. In our study, 73.63% of mothers with stillbirth delivery was multiparous, and stillbirth was related with gestational hypertension in 33.78% of cases ($p<0.001$). Ahlenius et al.[8] found microfarcts in their placental analysis of stillbirths related with pregnancy-induced hypertension.[8] Pregnant women with c arbonhydrate intolerance have an increased risk of stillbirth.[9] The incidence of intrauterine exitus associated with pregnancy and diabetes had been reduced from 12% down to 0.4%.[10] In our series, the ratio of stillbirth associated with gestational diabetes melllitus and pregestastional diabetes melllitus was 1.3%.

In conclusion, we have found that the most frequent three causes of stillbirths were gestational hypertension, fetal anomalies and abruptio placentae. Our birthstill rate with 49.14 per thousand, alone, is higher than the perinatal mortality rate in our population, which mainly results from the fact that we are a reference center. Also, insufficient antenatal care service provided by the primary and secondary centers in our region may be one of the reasons raising our rate. Improved antenatal care services in the primary and secondary centers, detection of high-risk pregnancies in earlier gestational weeks and taking the necessary medical precautions may contribute to decreases in the birthstill rate.

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