Original Article

Bad Obstetric History : A Prospective Study

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Abstract

Background: Death of an infant in utero or at birth has always been a devastating experience for the mother and of concern in clinical practice. Perinatal mortality remains a challenge in the care of pregnant women worldwide, particularly for those who had history of adverse outcome in previous pregnancies. To assess the risk factors and outcome of pregnancies in cases of bad obstetric history (BOH) and compare the results with control group, this study was undertaken.

Methods: A prospective study from 2003 to 2007 was carried out in 79 pregnancies having BOH (history of unexplained stillbirth/ neonatal death, three or more consecutive abortions etc). Test group was analyzed in terms of age, gravida, parity, risk factors and outcome in terms of preterm delivery, stillbirth, mode of delivery, birth weight, pregnancy complications and fetal distress. These parameters were compared with a systematic, randomly selected sample from rest of the deliveries. Necessary advice and treatment was given in cases of hypothyroidism, hypertension, antiphospholipid antibody (APLA) syndrome, gestational diabetes and other risk factors.

Result: There was significantly higher incidence of malpresentations, hypertension, APLA, cervical incompetence, preterm deliveries and caesarean section in test group ($p< 0.05$). In this study, only 47 (59.49%) women out of 79 in BOH group were identified to have possible factor responsible for pregnancy losses. In 32 (40.51%), no probable causes could be identified. Nine (11.39%) patients were identified with more than one risk factor.

Conclusion: APLA, hypertension, malpresentation, cervical incompetence, preterm deliveries and caesarean section were found significantly more in BOH group. In a large percentage of pregnancies with BOH, the risk factors for adverse outcome were not identified but pregnancy outcome was generally good in subsequent pregnancies with optimal antenatal care and advice.

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Key Words : Bad obstetric history; Antiphospholipid antibody syndrome; Gestational diabetes; Stillbirth

Introduction

Pregnancy loss is a frustrating and challenging problem for couples and clinicians alike. Miscarriage is often associated with guilt, embarassment and depressive states. This is particularly true when the patient presents with subsequent pregnancy with added concerns of primary or secondary infertility, irregular menses, absent or irregular ovulation, a known history of uterine fibroids, a family history of miscarriage, advancing age, medical history and a prior history of pregnancy complications. It certainly warrants a detailed consultation and reassurance with a practitioner committed to pregnancy loss evaluation.

A significant immunologically mediated contributor to pregnancy loss is the anti-phospholipid antibody (APLA) syndrome. This syndrome reflects a subtle autoimmune condition that can lead to enhanced clot formation in certain micro vessels with low flow or low pressure. It is believed that APLA can bind to phospholipids in the lining of blood vessels, platelets and trophoblasts in the placenta, leading to thrombosis. When thrombosis occurs in the early microvasculature of the implanting placenta and endometrium, the pregnancy does not receive adequate nourishment, gas exchange or blood flow. An otherwise normal pregnancy can miscarry at any stage of pregnancy. Women with APLA are at higher risk in later pregnancy of pre-eclampsia, fetal growth retardation and fetal demise.

The emotional issues surrounding pregnancy loss become magnified exponentially when miscarriage occurs on a repetitive basis. When evaluation of women for recurrent pregnancy loss is done, an underlying contributing factor can be identified in 40-50%. If a contributing factor is found and treated, the prognosis for successful pregnancy outcome is typically around 80%. Even in couples where no underlying problem is found, the chances for a successful pregnancy can typically be in the 50-70% range. If a couple had a normal pregnancy and delivery previously, the prognosis tends to be better.

It is estimated that 50-60% of all first trimester pregnancy losses harbor a chromosomal abnormality,

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which leads to abnormal growth and development of the pregnancy. The large majority of these abnormal pregnancies fail in the first trimester. Maternal age is generally believed to be a significant factor leading to potentially abnormal egg development and genetic make-up of the pregnancy. In some instances, either the maternal or paternal chromosomal make-up can predispose couples to chromosomally abnormal pregnancies.

A common aspect of the evaluation to uncover causes for miscarriage will typically involve inspection of the macro and the micro environment within the uterus. If a pregnancy does occur, the endometrium must develop optimally to provide ongoing attachment and nourishment for the developing pregnancy. Any process, which interferes with normal embryo-endometrium interaction can lead to pregnancy failure.

Acquired problems could include polyps, fibroids and adhesions, which even if small, could interfere with an otherwise normal pregnancy. Congenital uterine problems include the septate uterus, bicornuate uterus or a T-shaped uterus (related to in-utero diethylstilbestrol (DES) exposure).

Gestational diabetes mellitus (GDM) is defined as abnormal glucose tolerance during pregnancy. GDM can be associated with significant morbidity and mortality in the fetus and newborn.

Recurrent miscarriage (RM ≥ 3 consecutive early pregnancy losses) affects around 1% of pregnancies. Parental chromosomal anomalies, maternal thrombophilic disorders and structural uterine anomalies have been directly associated with recurrent miscarriage. However, in the vast majority of cases the pathophysiology remains unknown.

Material and Methods

A prospective study was carried out from 2003 to 2007 in 79 pregnancies having BOH (history of stillbirth/ neonatal death, three or more consecutive abortions etc). Test group was analyzed in terms of age, gravida, parity, risk of preterm delivery, intra uterine growth retardation (IUGR), stillbirth, mode of delivery, birth weight and fetal distress. These parameters were compared with a systematic, randomly selected sample of 300 from the rest of total 1500 deliveries. Necessary advice and treatment was given in cases of hypothyroidism, hypertension, APLA syndrome, GDM and other risk factors. Statistical analysis was done using Fisher's exact test.

Results

Incidence of BOH was found to be 5.27%. Table 1 shows that there was no significant difference between two groups regarding age, parity, body mass index and birth weight of newborn (p>0.05).

Table 1

Comparison between BOH group and control group

	Control group n=300	BOH group n=79	t value of difference	p value
Age				
Mean	25.078	25.4557	-0.913	0.1817
SD*	3.2363	3.2769		
BMI				
Mean	24.3982	22.9437	4.731	0.9999
SD	3.5125	2.0539		
Parity				
Mean	1.3809	1.2435	1.555	0.9390
SD	0.6690	0.7059		
Birth weight				
Mean	2.9726	2.8873	1.441	0.9244
SD	0.3743	0.4896		

*SD-Standard deviation.

Table 2 is the comparison between two groups in maternal and fetal complications. APLA (10.13% vs 4%, p<0.05), hypertension (20.25% vs 5.33%, p<0.01), malpresentation (7.59% vs 2.33%, p<0.05), cervical incompetence (5.06% vs 0%, p<0.01), preterm deliveries (17.72% vs 6.33%, p<0.01) and caesarean section (62.02% vs 22.67%, p<0.01) were found significantly more in BOH group. Though hypothyroid (7.59% vs 5%, p>0.05), GDM (2.53% vs 2.33%, p>0.05), premature rupture of membranes (PROM) (15.19% vs 10.33%, p>0.05), fetal distress (11.39% vs 8.67%, p>0.05) and meconium stained liquor (MSL) (18.99% vs 15%, p>0.05) were found more in BOH group but none of them were found to be statistically significant.

Discussion

Overall incidence of BOH in literature is variable with large etiological heterogeneity. Depending on age of the parents and many other confounding variables e.g. repeated biochemical pregnancy losses, inclusion of two successive pregnancy losses in the test group may lead to different results and conclusion. There is strong evidence that patients with few miscarriages (two) are different from those with many miscarriages (four or more) with regard to etiological factors [1, 2]. Two early miscarriages are experienced by so many women that it should be considered a normal phenomenon that is most likely caused by de-novo fetal chromosome abnormalities occurring twice by chance. Fifty percent of culturable tissue samples from miscarriages occurring sporadically have chromosome abnormalities. On the other hand, the theoretical risk of experiencing recurring pregnancy loss (RPL) as a consequence of consecutive chromosome-abnormal miscarriages declines rapidly with the number of pregnancy losses and in accordance with this, the overwhelming majority of abortuses from patients with four or more miscarriages are found to have normal karyotype [3-5]. In this study incidence of BOH was found to be 5.27%, including 21 (1.4%) for