Taiwanese Journal of Obstetrics & Gynecology 57 (2018) 13–17

Contents lists available at ScienceDirect

Taiwanese Journal of Obstetrics & Gynecology

journal homepage: www.tjog-online.com

Original Article

Maternal and fetal outcomes in pregnancies with pulmonary hypertension: Experience of a tertiary center

Zehra Nihal Dolgun*, Cihan Inan, N. Cenk Sayin

Department of Obstetrics and Gynecology, Faculty of Medicine, Edirne, Turkey

ARTICLE INFO

Article history:
Accepted 15 August 2017

Keywords:
Cardiology
Intrauterine growth retardation
Maternal mortality
Pulmonary hypertension
Pregnancy
Perinatal mortality

ABSTRACT

Objective: Pregnancies complicated with PHT are serious debates for obstetricians due to high maternal and fetal complication potentials. The aim of the study was to present our maternofetal outcomes in pregnant women with pulmonary hypertension.

Materials and methods: This study was performed using data extracted from the medical files of 23 pregnancies of 18 patients with PHT who were followed-up in the obstetrics and gynecology department.

Results: The average age was 27.09 ± 6.97 (range: 14–38) years. The most frequent maternal cardiac pathologies were cardiac valvular disease (mitral or aortic insufficiency) (n = 4), atrial septal defect (n = 3), mitral stenosis (n = 3), ventricular septal defect (n = 2) and arrhythmia (n = 2). Caesarean section and normal vaginal delivery were performed in 13 and 7 deliveries, respectively. Therapeutic dilatation and curettage was performed in 3 patients. Preterm delivery occurred in 4 pregnancies and there were 2 intrauterine growth retardations, 1 preeclampsia and 2 maternal pulmonary edemas. One patient underwent re-laparotomy 5 days after delivery due to uterine hematoma. Totally, 20 newborns (14 female, 6 male) were delivered. Most of the complications were seen in advanced PHT classes.

Conclusion: The care of the pregnant women with PHT necessitates a well-planned, multidisciplinary approach focusing on close monitoring before, during and after delivery. This approach may contribute to reduction of poor maternal and fetal outcomes.

© 2018 Taiwan Association of Obstetrics & Gynecology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Introduction

Pulmonary hypertension (PHT), is described classically as a mean pulmonary artery pressure >25 mmHg at rest or 30 mmHg with exercise. It has a poor prognosis and its diagnosis may be either missed or delayed. PHT may be accompanied by various diseases or conditions and brings about a remarkable risk for both the mother and the fetus. Pregnant women with PHT need careful monitoring with close collaboration of a multidisciplinary team. Even though specific treatment modalities are available in the management of PHT during pregnancy, majority of medications are contraindicated due to their teratogenicity [1].

During the course of pregnancy, pulmonary arterial pressure may rise in proportion with the cardiac output with a noteworthy increase in the afterload on the right ventricle and the patients may become symptomatic. Attributed to the deterioration of cardiac function, clinical findings consistent with right heart failure, angina and arrhythmia may occur. Symptoms can exist upon exertion or even at rest with respect to the severity of PHT before pregnancy. Risk for sudden death due to arrhythmia or pulmonary thromboembolism is especially increased in these patients [2–5]. High rates of fetal and maternal mortality and intrauterine growth retardations were also reported [6,7]. In these series, the vast majority of deaths occurred during labor, delivery or in the postpartum period as high as 30%–56%, especially in women with idiopathic PHT [7–10]. Since PHT patients have poor tolerance for pregnancy, many authors recommend its avoidance [8,11].

Considering different aspects of mortality and morbidity, the aim of the present study was to share our experience in pregnant women with PHT and to present our maternofetal outcomes to contribute for the establishment of a therapeutic strategy in these patients.

Materials and methods

This retrospective study was performed using the medical records of 23 pregnancies of 18 patients with PHT in the Obstetrics &

* Corresponding author. Department of Obstetrics and Gynecology, Trakya University Faculty of Medicine, Edirne, Turkey. Fax: +902842353451.
E-mail address: dr_nihaldolgun@hotmail.com (Z.N. Dolgun).

https://doi.org/10.1016/j.tjog.2017.10.032
1028-4559/© 2018 Taiwan Association of Obstetrics & Gynecology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Gynecology Department of our tertiary care center between January 2008 and December 2015. The approval of local Institutional Review Board was obtained prior to the study. Since this is a retrospective study, informed consent was not obtained. The study population consisted of Turkish women living in Thrace Region of Turkey.

Parameters involving basic descriptive, medical, cardiac and obstetrical data as well as maternofetal outcomes and complications were collected from the medical files. Standard procedures were followed in close collaboration with departments of pediatrics, cardiology, hematology, chest diseases, neonatology, intensive care unit and anesthesiology. Determination of the gestational age was made according to the last menstrual date and ultrasonography during the first trimester. In case of discrepancy >5 days between these modalities, ultrasonographic data was used. For fetal follow-up, ultrasound Doppler examinations were carried out transabdominally by Voluson ProExpert 730 (General Electric, Connecticut, USA), every two weeks.

Most of our patients had been diagnosed with PHT prior to gestation so they were consulted to cardiology clinic at their first trimester. Pregnancy termination was offered to pregnants who wouldn't tolerate pregnancy by cardiology and obstetrics clinics. According to these suggestions only one patient, New York Heart Association (NYHA) class IV, terminated her two consecutive first trimester gestations after one term vaginal delivery. Other pregnants who were offered termination chose to continue the gestations. Echocardiography was performed and routine cardiopulmonary evaluation was carried out monthly by cardiology department. Patients were informed to be careful about additional cardiac demands and were advised to avoid maneuvers that cause inferior vena cava compression and reduction of venous return to heart due to the cardiorespiratory limitations. As indicated in the relevant literature, patients were advised to admit to the hospital in the second trimester due to the increased likelihood of preterm labor and other complications [12]. All the cases consulted to cardiology clinic at their 3rd trimester and asked about the appropriate route of delivery. The patients who were scheduled for cesarean section had anesthesiology consultation prior to surgery. Monitorization of fetal heart rate was performed twice a week before labor and continuously during labor and all deliveries were performed by a senior attending obstetrician. Since arterial hypoxia can cause vasoconstriction and worsen the hemodynamic outcomes of pregnancy, oxygen was administered in order to keep pulmonary arterial oxygen pressure above 70 mmHg. In this series, anticoagulation and antibiotics were given in 11 patients, eight patients received tocolytic treatment including magnesium sulfate (6 g/20 min loading dose followed by 2 g/hr maintenance therapy), ritodrine hydrochloride (50 mcg/min IV infusion) (which also known to decrease cardiac preload) and nifedipine (30 mg oral loading dose followed by 10 mg/4 h). Anticoagulation is recommended to decrease the risk of venous thromboembolism in patients with restricted cardiopulmonary reserve [13]. In this purpose we started 6000 anti-Xa IU/0.6 ml enoxaparin sodium daily to every patient from the first day of fetal heart beats established. The drug continued during pregnancy and stopped 12 h prior to delivery. After delivery when the bleeding risks were eliminated all our patients were transferred to cardiology clinic for appropriate warfarin treatment.

Pregnant women who had already diagnosed or newly diagnosed as PHT, followed-up and delivered in our clinic included in the study. The ones who were not followed or did not deliver in our center were excluded.

Results

According to the NYHA classification of functional status in PHT five pregnant women were in Class I, three pregnant women were in Class II, five pregnant women were in Class III and five women were Class IV (Table 1). The clinical classifications of patients were also presented on the same table [14].

As shown in Table 1, the average age was 27.09 ± 6.97 (range: 14 to 38) years, in our series. The median gravidity and parity were 2 (range: 1 to 5) and 1 (range: 0 to 4), respectively. Pulmonary hypertension had been diagnosed during pregnancy in 2 cases (11.1%), whereas the vast majority of PHT patients (16/18; 88.8%) had been previously identified. The most frequent maternal cardiac pathologies were cardiac valvular disease (mitral or aortic insufficiency) (n = 4), atrial septal defect (n = 3), mitral stenosis (n = 3), ventricular septal defect (n = 2) and arrhythmia (n = 2). Five patients had undergone mitral valve replacement and three patients had undergone aortic valve replacement prior to their pregnancies. Mean pulmonary arterial systolic pressure was 45.8 ± 16.05 mmHg (range: 30–80). Average duration of pregnancy was $32^{2/7}$ weeks (range: $6^{6/7}$–$40^{3/7}$). There were two twin pregnancies and the remaining was comprised of singleton pregnancies. Chronic renal failure (n = 1), thrombocytopenia (n = 1), thyroiditis (n = 1), preeclampsia (n = 1), nephrotic syndrome (n = 1) and hypothyroidism (n = 1) were the additional morbidities detected in the study group. Echocardiography demonstrated that ejection fraction was greater than 60% in eight patients and grade 2 tricuspid insufficiencies were diagnosed in seven cases. Preterm delivery occurred in four pregnancies and there were two intrauterine growth retardations. Caesarean section (CS) and normal vaginal delivery (NVD) were performed in 13 and 7 deliveries, respectively. Four patients who had previous CS, five patients who had requested tubal ligation, and four patients in preterm labor were terminated via CS. Seven women whose spontaneous contractions started and had an uncomplicated labor, delivered vaginally. In three pregnant women, therapeutic dilatation and curettage was safely carried out due to missed abortion and patients' request. In terms of complications, one patient suffering from excruciating inguinal pain on postoperative day 5, underwent re-laparotomy due to uterine hematoma. Totally, 22 newborns (15 female, 7 male) were delivered and 20 of these are still alive and healthy; whereas the remaining 2 infants were lost to follow-up. The median Apgar score on 1st minute was 9 (range: 3–9), while it was 10 (range: 8–10) on 5th minute. Detailed characteristics of pregnancies according to the NYHA classification of functional status in PHT were showed at Table 2.

Discussion

The current study was carried out to evaluate our maternofetal outcomes in pregnant women with PHT. Our results have shown that an uncomplicated course of pregnancy and favorable clinical results are available in pregnant women with pulmonary hypertension. Thus, we suggest that meticulous care, close follow-up and collaboration of a multidisciplinary team provide satisfactory maternal and fetal outcomes in pregnant women with PHT.

The incidence of pregnancies affected by PHT is 1.1/100,000 women [9]. PHT progressively leads to right ventricular strain and subsequent right heart failure, attributed to the increased pulmonary vascular resistance and right ventricular afterload increase. In case of chronic PHT, hypertrophy of the right ventricle causes increased oxygen consumption, poor contractility and right heart failure [15]. In the relevant literature, despite improvement in survival rates owing to new treatment regimens and utilization of effective multidisciplinary approach, high rates of maternal complications and mortality as high as 56% have been reported because of adverse circulatory and hematological changes that occur in pregnant women with PHT [9,16]. Moreover, fetal risks including prematurity, growth retardation and increased perinatal mortality

Download English Version:

https://daneshyari.com/en/article/8784418

Download Persian Version:

https://daneshyari.com/article/8784418

Daneshyari.com