Treatment of Refractory Supraventricular Tachycardia with Amiodarone: A Case Report

Refrakter Supraventriküler Taşikardinin Amiodaron ile Tedavisi: Olgu Sunumu

Refrakter Supraventriküler Taşikardi / Refractory Supraventricular Tachycardia

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Özet

Çoğu fetal taşiaritmi benign olmakla beraber bazıları non-immün hidropsa ve fetal kalp yetmezliğine neden olarak doğum öncesinde veya sonrasında ölümle sonuçlanabilir. Amiodaron klas 3 antiaritmik ilaç olup refrakter fetal aritmilerin tedavisinde kullanılabilir. Bu olguda digoksine direçli supraventriküler taşikardinin amiodaron ile tedavisini sunduk. 26 gebelik haftasında olan hasta kliğiniğimize hidrops fetalis ön tanısıyla yönlendirildi. Yapılan ayrıntılı sonografi ve fetal EKO sonucunda beraberinde ek yapısal ve kardiyak anomali bulunmayan izole 220 atımlı supraventriküler taşikardi tespit edildi. İlk olrak digoksin tedavisi başlandı. Tedavinin 3. gününde hidropsun ve taşikardinin sebat etmesi nedeniyle oral amiodaron eklendi. Günlük 200 mg amiodaron tedavisi 32. haftaya kadar devam etti ve bu süre zarfında taşikardi tekrarlanmadı. Tedavi edilmeyen supraventriküler taşikardiler ölümcül olabileceği için acilen tedavisinin başlanılması gerekmektedir. Amiodaron hem tek başına hem de diğer antiaritmik ilaçlar ile kombine edilerek supraventriküler taşikardilerin tedavisinde kullanılabilir. Fetal ve maternal yan etkileri nedeniyle yakın izlem gerekmektedir.

Anahtar Kelimeler

Fetal Aritmi; Hidrops; Amiodaron

Abstract

Most fetal tachyarrhythmias are benign but some types cause non-immun hydrops and fetal heart failure and result in prenatal and postnatal death. Amiodarone, a class 3 antiarrhythmic drug, can use treating for refractory fetal arrhytmias. A pregnant referred to our department at 26 weeks' with hydrops fetalis. We detected supraventicular tachiacardia at 220 bpm and there was no further cardiac and structural anomaly. First of all digoxin treatment was initiated. Oral amiodarone was added when tachicardia and hydrops fetalis persisted 3 days after digoxin treatment. a pregnant delivered at 32 weeks' and we did not see recurrence of supraventicular tachiacardia with treatment of amiodarone 200 mg per a day. Untreated SVT can be mortal and treatment should start immediately. Amidarone can use treating SVT alone or combination with antiarrhythmic drugs considering maternal and fetal side effects.

Keywords

Fetal Arrhythmia; Hydrops; Amiodarone

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Introduction

Most fetal tachyarrhythmias are benign but some types cause non-immun hydrops and fetal heart failure and result in prenatal and postnatal death [1]. Therefore, management of fetal arrhytmias is important. Fetal arrhytmias can be diagnosed by using M-mode and doppler echocardiography.

Universally, digoxin is the the most common first-line antiarrhythmic drug for prenatal arrhythmias [2]. If digoxin fails, the best drug or combination of drugs is uncertain. Amiodarone (AMD), a class 3 antiarrhythmic drug, can use treating for refractory fetal arrhythmias [3,4].

This study reports a case, refractory fetal supraventriculer tachycardia (SCT) with non-immun hydrops who was treated with amniodarone successfully.

Case Report

A pregnant referred to our department at 26 weeks' with hydrous fetalis. We detected SVT at 220 bpm and there was no further cardiac and structural anomaly. First of all digoxin treatment was initiated. Oral amiodarone was added when tachicardia and hydrops fetalis persisted 3 days after digoxin treatment. Amiodarone was given 400 mg two times first day. The initial dose was decreased 400 mg a day after 3:1 atrioventricular block was developed. Digoxin plus amiodarone treatment continued for 7 days after reaching the appropriate dose. Hydrops was disappeared at eleventh day of treatment Amiodarone dose decreased 200 mg per a day when hydrops was disappeared and. fetal heart rate decreased normal range(135 bpm). We continued amiodarone treatment till preterm birth at 32 weeks and birth weight was 1880 gr. Postnatal electrocardiography was normal and no cardiac anomally was detected. No goitre and overt hypothyrodism were present in the neonate.

Discussion

Supraventricular tachicardias are not seen commonly, but it is important to detect and treat prenatally because of their results. Prior studies demonstrated that amiodarone (alone or in combination) was effective and slightly safe in treatment of fetal tachiarrhythmias with or without fetal hydrops [3-5].

Amiodarone, a class 3 antiarrhthmic drug, can treat refractory SVT successfully given by three routes (fetal intraperitoneal injections, direct umbilical vein and maternal oral) [4]. Because of the risk of procedures maternal oral/intravenous therapy should use first treatment of amiodarone [4,6]. Such as many antiarrhythmic drugs, minor side effects of amiodarone have been reported, including headache, vomiting and nausea, fatigue, sleep disturbance. amiodarone is an iodine-rich drug that may infrequently cause thyroid problems. Also congenital goiter, hypothyroidism and hyperthyroidism, fetal bradycardia, and growth or psychomotor retardation have been reported fetal side effects of AMD in prior studies [7,8].

In this study we reported refractory SVT with hydrops who was treated with amiodarone plus digoxin. The treatment was started with digoxin alone at 26 weeks', AMD was added 3 days later when tachiacardia and hydrops was persisted. AMD was given maternal oral route. Major maternal side effect was not seen but fatigue and headache seemed transiently. A pregnant delivered at 32 weeks' and we did not see recurrence of SVT with treatment of amiodarone 200 mg per a day. Prior studies reported preterm deliveries associated with AMD treatment as in our study [1,4]. Thyroid hormone status were determined after delivery by a radioimmunassay technique. The infants thyroid hormone levels were normal.

In conclusion, untreated SVT can be mortal and treatment should start immediately. Amidarone can use treating SVT alone or combination with antiarrhythmic drugs considering maternal and fetal side effects.

Competing interests

The authors declare that they have no competing interests.

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Figure 1. fetus had supraventricular tachycardia with 220 bpm



Figure 2. non-immun hydrops fetalis in transverse abdominal view



Figure 3. 3:1 atrioventricular block developed during amiodarone therapy (400 mg twice a day)



Figure 4. fetus had normal heart rate (135 bpm) after decreasing the dosage of amiodarone (400 mg per a day)