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A Lucky Baby: Maternal Valsartan Use During Pregnancy

ABSTRACT

Several published cases suggest that the use of angiotensin II receptor antagonists is fetotoxic during the third trimester, but not in early pregnancy. 41 years-old a woman with well-controlled chronic hypertension has been treated with valsartan 160 mg/day until pregnancy was diagnosed at 25 weeks of gestation. Then, valsartan was discontinued; alfa-metildopa 500 mg/ day was started. Dose of metildopa was intensified to 1000 mg/ day until taking under control of blood pressure. In our patient, amniotic fluid volume abnormalities and fetal anomalies were not observed until end of pregnancy on successive obstetric ultrasonography. After delivery, we did not observe neonatal renal disorder and other medical problems. Growth parameters of baby were within the normal range, and there was no evidence of developmental delay.
In our case, we presented a case of fortunate pregnant using valsartan, angiotensin II receptor antagonist (ARB), during her first and second trimester of her pregnancy.
Key Words: Fetal toxicity, pregnancy, valsartan

Şanslı Bir Bebek: Gebelik Sırasında Maternal Valsartan Kullanımı

ÖZET

Birçok yayınlanmış vaka sunumlarında gebeliğin ilk trimestirinde olmasa da 3. Trimestri süresince anjiyotensin II reseptör antagonistlerinin kullanımının fetotoksik olduğu bildirilmiştir. İyi kontrollü kronik hipertansif ve valsartan 160 mg kullanan 40 yaşında bayan bir hasta gebeliğinin 25. Haftasına kadar bu ilacı kullanıyordu. Sonrasında valsartan kesilmiş ve alfa-metildopa 1000 mg başlanmış ve dozu kan basıncı kontrolüne kadar titre edilmiştir. Hastada yapılan yapılan obstetrik ultrasonografide fetal ve amniyotik anormallik saptanmamıştır. Doğum sonrası izlemde ise bebekte neonatal tıbbi bir problem izlenmedi. Bebeğin büyüme parametrelerinde ve renal fonksiyonlarında bir anormallik gözlenmedi. Sonuç olarak, bizim vakamızda 1. ve 2. Trimester süresince anjiotensin II reseptör antogonisti kullanan şanslı bir gebe olgusunu rapor ettik.
Anahtar Sözcükler: Fetal Toksisite, Gebelik, valsartan

INRODUCTION

The fetal toxicity of angiotensin-converting enzyme inhibitors (ACEI) is now well known. Sartans, which are angiotensin II inhibitors, are supposed to have the same side effects on the fetus as like as ACEI because of their similar mechanism of action. This is supported by experimental and clinical data. Clinical presentation of fetal exposition to sartans varies from transient oligohydroamniosis to permanent renal failure, potentially complicated by Potter syndrome (1). Published cases suggest that the use of angiotensin II receptor antagonists is fetotoxic during mainly late period of pregnancy. The use of valsartan in human would be expected to cause fetal toxicity similar to that observed with angiotensin-converting enzyme inhibitors (2,3).

This toxicity includes reduced perfusion of the fetal kidneys, resulting in anuria, oligohydramnios, and subsequent pulmonary hypoplasia. In addition to functional adverse effects, in utero exposure to drugs may affect renal structure itself and produce renal congenital abnormalities, including cystic dysplasia, tubular dysgenesis, ischemic damage and a reduced nephron number (4,5).

CASE REPORT

41-year-old a woman administered to our clinic for pregnancy suspicion. Our patient has suffered for menstrual irregularity for long time approximately 3-4 years. Additionally, she has suffered for hypertension for 7 years. She had been using valsartan 160 mg/ day for 4 years. Her blood pressure seemed to be under control. After history taking, physical examination, and blood investigation, she was considered to be pregnant. The patient could not recognize to be pregnant by the time 20 weeks of gestation due to menstrual irregularities.

Valsartan was discontinued, and alfa-metildopa 500 mg/day was administered and intensified according to subsequent blood pressure measurements. On patient's obstetric ultrasonographic examination, amniotic fluid volume was normal. Renal function test of pregnant including creatine and blood urine nitrogen level of pregnant observed as normal. Fetal anomalies were not observed on fetal ultrasonographic examination. Our patient was followed up until and after delivery for fetal toxicity.

The patient has undergone to normal vaginal delivery. No obstetric complications were developed. She delivered a fetus of 2400 gr in weight, 51 cm in length and 37 cm in head circumference. Apgar score of fetus was 8. Renal function test of fetus had been observed as normal in neonatal period. We have followed up infant for 6 months for late complications. No any developmental and medical abnormalities were observed.

DISCUSSION

Exposure to sartans during the second part of pregnancy can lead to abnormalities similar to those observed after exposure to angiotensin-converting enzyme inhibitors, that is, reduced fetal kidney perfusion that may result in oligohydramnios and neonatal renal insufficiency (6,7).

Several previous reports of maternal exposure to AT1 antagonists during this period have been published. In some of these cases, fetal or neonatal death occurred; in some, pregnancy was terminated because of complete oligohydramnios or fetal abnormalities; in a few cases, renal insufficiency persisted until 1 year of age; kidney function was fairly normal at birth, and neonatal renal failure improved in the first year of life (8,9). In our case, we did not detect and observe any fetal toxicity due valsartan use.

In some cases, transient amnion fluid volume abnormalities were reported. Comparing to our case, Roger et al reported a case in which transitory fetal oliguria due to valsartan use between 19 and 21 weeks of gestation, Resolution of oliguria after discontinuing valsartan was observed (10). Berkane et al reported a case in which the adverse fetal effect of angiotensin II receptor antagonist treatment was reversed (11).

Briggs et al reported a case of oligohydramnios, pulmonary hypoplasia, very small placenta, and fetal death in pregnancy complicated by chronic hypertension and diabetes mellitus that had been treated through the first 24 weeks of gestation with valsartan and atenolol. They related that resolution of oligohydramnios to after discounting valsartan, and placental insufficiency to previous combination of valsartan and atenolol (12).

CONCLUSION

We recommend that maternal treatment with AT1 receptor antagonists be avoided during the second and third trimesters of pregnancy and that women who become pregnant while taking one of these medications be changed to an antihypertensive drug of a different class as soon as the pregnancy is recognized. If these agents are prescribed accidentally to a pregnant woman, monitoring of amniotic fluid volume after discontinuation of the AT1 antagonist can provide critical data for advising parents on pregnancy and fetal outcome.

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