

Can Pravastatin/L-arginine therapy improve placental perfusion in singleton pregnancies?

Juriscic A, Juriscic Z

University of Belgrade Medical Faculty, Narodni Front University Clinic, Beograd, Serbia

Objective

Analysis of therapeutic effects of pravastatin /L-arginine therapy on improvement of placental perfusion and decrease of umbilical artery vascular resistance in singleton pregnancies with increased umbilical artery pulsatility index for gestational age.

Methods

In this study 12 pregnant patients, with isolated increased umbilical vascular resistance and normal uterine artery doppler findings, were included. Pravastatin 40mg / L-arginine 1500mg per day, was administered when umbilical artery pulsatility index was measured above limits for gestational age. Patients were scanned in 2-4 week interval to follow up changes in vascular resistance in umbilical artery.

Results

12 pregnant patients had singleton pregnancy. Median gestational age, when increased umbilical vascular resistance was detected and therapy introduced, was 23 weeks (18-30 weeks). Therapy was introduced when PI values in the umbilical artery were above normal limits for gestational age. Improvement of umbilical artery PI values was confirmed in 11 patients. Median period of improvement in umbilical circulation was 2 weeks. Fetal cerebral, aortal, renal circulation and uterine arteries vascular resistance remained normal throughout pregnancy. Median gestational age at delivery was 40 weeks. Median 1/5 min Apgar score was 9/10. 11 neonates were born without signs of intrauterine asphyxia. Mean neonatal weight was 3331±389g. In one patient, who had normal umbilical artery vascular resistance until 30th week, therapy was introduced after significant rise of umbilical artery PI to 1.5. Fetal condition was intensively monitored and umbilical artery PI values continued to rise until 35 weeks when AEDV occurred. Fetal cerebral circulation showed initial blood redistribution towards central nervous system. Pregnancy was carefully monitored and, when cardiotocographic monitoring indicated imminent asphyxia, cesarean section was performed at 35 weeks of pregnancy. Neonatal weight was 2400g, Apgar score was 7/8. Histopathological examination of the placenta confirmed placental infarction.

Conclusion

In patients with isolated increased umbilical artery vascular resistance, increased placental perfusion and decreased vascular resistance in umbilical arteries was achieved after administration of Pravastatin 40mg/L-arginine1500mg daily. Administration of this therapy reduced the incidence of premature delivery due to fetal asphyxia.