The effect of pravastatin on fetal and utero-placental blood hemodynamics in early preeclampsia

1Third University Department of Obstetrics and Gynaecology, Hippokration General Hospital of Thessaloniki, Aristotle University of Thessaloniki, Thessaloniki, Greece. 2Division of Women’s Health, King’s College London, London, United Kingdom., Thessaloniki, Greece

Objective
To study the impact of pravastatin (20 mg/d) administration in pregnancies complicated by severe early-onset fetal growth restriction (FGR) on fetal growth and utero-placental blood hemodynamics as well as the perinatal outcome.

Methods
This was part of an ongoing prospective study of pregnancies complicated by severe early-onset FGR (before 33+0 weeks). Women were hospitalized for intensive fetal monitoring and pravastatin (20 mg/d, orally) was added to their treatment at the time of diagnosis of severe FGR. Detailed growth scans were performed weekly to estimate fetal weight and at least twice weekly to evaluate the amniotic fluid and for Doppler studies of the umbilical artery (UmA), middle cerebral artery (MCA), uterine artery (UtA) and ductus venosus (DV), until delivery. The primary aim was to study the evolution of the pulsatility index (PI) of UtA, UmA, DV, MCA, the cerebro-placental ratio (CPR) and the estimated fetal weight (EFW) on serial ultrasound evaluations.

Results
Overall, eleven pregnancies were included in this ongoing study, of which 8 were singleton and 3 were twin pregnancies. The mean gestational age was 27.4 (± 2.9) weeks at pravastatin initiation and 30.9 (± 2.7) weeks at delivery. The mean pregnancy prolongation period was 25.7 days. The mean UtA PI improved between days 0 and 14 (84.9 vs. 76.1 percentile respectively, P=0.05). There was no improvement in the fetal doppler studies.

Conclusion
In these preliminary data, pravastatin administration in cases with severe early-onset FGR was associated with an improvement of the mean UtA-PI.