Objective
To identify the relationship between IUGR and the oxidant-antioxidant balance in the circulation and in the myometrium. We postulated that the activities of the oxidative stress parameters might change in pregnancies complicated with IUGR in comparison to the uncomplicated normal pregnancies and that such information would be relevant in understanding the mechanisms that protect against oxidative stress in the local microenvironment.

Methods
The oxidative stress markers, malondialdehyde (MDA), xanthine oxidase (XO), catalase (CAT) and superoxide dismutase (SOD) were investigated both in the serum and in human myometrium in 20 pregnant women with IUGR and in 20 with healthy pregnancy.

Results
In the IUGR group MDA and CAT concentrations were higher in the serum (p<0.02 and p<0.01, respectively) and lower in the myometrium (p<0.01) compared to the control group. XO and myometrial SOD values were comparable in both groups.

Conclusion
Hypoxia–reoxygenation, the resulting oxidative stress and myometrial defense mechanisms during pregnancy are critical in the development of IUGR. Whether the alteration demonstrated in maternal and placental antioxidant defences in IUGR is a primary or a secondary event requires further investigation with a larger multicenter studies.