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Plenary Session II – Uterine and Fetal Blood Flow

Chairpersons:

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Response of utero-placental fetal blood flow to stress situation and drugs

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The utero-placental blood flow may be altered directly or indirectly by a variety of factors. These include stressful stimuli (e.g., amniocentesis, cordocentesis, altered uterine contractions, pain and anxiety of the mother, maternal hypotension, hypertension, hypoxia, hypercapnia and hypocapnia of a marked degree), analgesic and anesthetic to improve fetal condition in the presence of certain complications of pregnancy (e.g., IUGR, preterm labour and delivery, maternal hypertension and pre-eclampsia). When analysing the effects of these factors, one should separate those exerted on uterine blood flow from those elicited on umbilical blood flow. The response of utero-placental-fetal blood flow has been measured by a variety of direct and indirect methods, both in animals and humans. New techniques for studying the fetus in utero, including Doppler ultrasound, have allowed a precise evaluation of the effect of many pharmacologic agents on the utero-placental-fetal circulation. However, the results are often not consonant with those obtained from animal studies with the use of accurate direct measurements of utero-placental-fetal blood flow. The discrepancy may be attributed to differences in the methodology used, the obstetric situation, and the response of human as compared to animals.