

Large animal models of materno-fetal interactions: Friday 6th July 14.30

One of the greatest killers in perinatal medicine today is intrauterine growth restriction (IUGR). The condition is associated with impaired placental perfusion, placental oxidative stress, a fall in nitric oxide (NO) bioavailability, decreased umbilical blood flow and fetal hypoxia. NO maintains umbilical blood flow and antioxidants increase NO bioavailability. However, it remains unknown whether antioxidant therapy can increase umbilical blood flow in healthy pregnancy, and/or protect placental perfusion and fetal growth in pregnancy complicated by adverse intrauterine conditions. This combined lecture and tour of the Barcroft Building will explain how the chronically-instrumented materno-fetal sheep preparation has contributed to our understanding of changes in the uteroplacental and fetal circulations in healthy and complicated pregnancy. We will highlight our current studies in ovine pregnancy using novel wireless data acquisition systems (CamDAS). These are able to record continuously maternal and fetal arterial blood pressure and blood flow in six circulations while the pregnancy develops under hypoxic conditions in custom-designed chambers.

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