TLRS EXPRESSION IN THE PLACENTA DURING LABOUR AND PREECLAMPSIA
A. Abdulsid, A. Fletcher, F. Lyall

Introduction
The mechanisms that are involved in maintaining a human pregnancy to term, and the switches that lead to a normal labour and pregnancy outcome or indeed an adverse outcome such as miscarriage, preeclampsia, fetal growth restriction or preterm labour, are complex but the role of the placenta is crucial to them all. TLR family members are expressed differentially in a variety of cells and tissues. Toll-like receptors (TLR) are the principal signalling molecules through which mammals’ sense infection, so called innate immunity.

Aim
The aim of this study was to examine the spatial expression of TLRs in placentae obtained from women who delivered by caesarean section, and normal vaginal delivery, by defining precise sampling zones. The second aim was to determine the expression of TLRs in normal pregnancy and preeclampsia, both in labour and non-labour.

Methods
Samples were obtained from 12 sites within each placenta: 4 equally spaced apart pieces were sampled from the inner, middle and outer placental zones. Non-labour, labour and preeclampsia placentas were studied. TLRs gene expression was analysed by RT-PCR using validated TagMan® Gene Expression assay.

Results
There was a neglctable expression of TLR9 and 10 in the human placenta. There was a significant increase in TLR1 expression in the labour control compared to labour preeclampsia groups at the inner and middle sites (p=0.04, p=0.002). TLR5 expression was significantly increased in the non-labour group compared to labour group at the middle zones (p=0.004). No other differences were found.

Conclusion
TLRs may play a role in the pathology of preeclampsia.