CUOGS Conference 2026 Winning Abstracts

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Evaluating the impacts of maternal illicit substance use during pregnancy on outcomes

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Background: Illicit substance use during pregnancy poses serious risks for both mother and child, linking to adverse pre- and peri-natal outcomes and potential long-term cognitive, behavioural, and psychiatric effects in exposed children. This study examines the maternal and neonatal impacts of illicit substance use on pregnancy outcomes.

Methods: Patient records from a tertiary hospital (2023-2024) were identified using ICD-10 codes for pregnancy complications, delivery outcomes, and substance use (including cannabis). Eligible records were manually reviewed, and data were extracted on demographics, clinical variables, substance use patterns, mental health, smoking, domestic violence, specialist referrals, pregnancy and delivery outcomes, and social care involvement.

Results: Thirty-nine women aged 18–44 years (mean 28.9, SD 6.7) were included. Cannabis was the most common substance (n = 31), with smaller numbers using cocaine, opioids, alcohol, or benzodiazepines. Mental health comorbidity was frequent – particularly anxiety/depression (n = 21), PTSD (n = 10), and personality disorders (n = 8). Most engaged with specialist services (n = 18) and maternity liaison (n = 26). Smoking occurred in 27 pregnancies. Complications included preterm birth (n = 4), placental disorders (n = 5), intrauterine growth restriction (n = 5), and antepartum foetal demise (n = 2). Deliveries were mainly spontaneous vaginal (n = 47), with 18 caesareans and 8 instrumental births. Social care removal occurred in 8 cases.

Discussion: Complication rates were high: 5% of pregnancies ended in stillbirth and 13% in other adverse outcomes, reflecting risks from drug use and associated lifestyles. Common mental health comorbidity highlights a key intervention point. Strengthening mental health and addiction services may reduce harm to mothers and neonates and improve outcomes.

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Keywords: Obstetrics & Gynaecology, Maternal substance use, Pregnancy outcomes, Neonatal outcomes.

Miscarriage Hijacks Transcriptional Dynamics in the Endometrium

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Miscarriage is a common mechanism of pregnancy loss during the first 20 weeks of gestation. Epidemiological studies highlighted a significant reduction in the probability of live birth per menstrual cycle following a single

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miscarriage, regardless of birth, prompting investigation into the mechanism and effects of miscarriage in the endometrium (Kolte et al., 2021). This study investigates the effect of miscarriage on transcriptional dynamics within and between cycles.

Paired biopsy transcriptomic data from 161 patients for two menstrual cycles were normalised for tissue heterogeneity and post-ovulation LH+ time variation. Exploratory analysis of intracyclical and intercyclical dynamics were conducted using dimension reduction, regression, and network-based analysis.

It is found that five or more miscarriages can distort the individual uniqueness of the transcription profile. No significant trends in intracyclical gene expression with miscarriage was seen. Intercyclical change in expression of transcripts involved in inflammatory pathways had greater variance with increased miscarriage whilst the opposite was seen for decidualisation. Consistent changes in general structure of gene networks were observed with increasing miscarriage. Pathway-level analysis indicated inflammatory genes as the only pathway enriched at high module switch rates. Differential coexpression analysis highlighted correlation of TRAJ and U6snRNA, SPRR2D and AHI1 becoming significantly weaker with increasing miscarriage.

Miscarriage establishes genetic memory which potentially leads to reduction in control of inflammatory pathways while in turn making decidualisation more rigid, it less responsive to the dynamic endometrium. Methods were developed here for pinpointing specific transcripts responsible for the effect of miscarriages which should be applied to larger datasets.

Reference

Kolte, A.M., Westergaard, D., Lidegaard, Ø., Brunak, S. & Nielsen, H.S. (2021). Chance of live birth: a nationwide, registry-based cohort study. *Human Reproduction*. 36 (4), 1065–1073. https://doi.org/10.1093/humrep/deaa326.

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