**Third Annual RCPsych Neuroscience Spring Conference, March 2019**

Delegates gathered from around the UK for the eagerly anticipated Third Annual RCPsych Neuroscience Spring Conference in London. This year’s event focused on the ‘Genetics and Epigenetics of the Brain and Behaviour’, promising a jam-packed day of cutting-edge Neuroscience with presentations from researchers at the forefront of their field from across the globe.

We saw how schizophrenia may share the same genetic risks with the early onset neurodevelopmental disorders such as intellectual disability, ASD and ADHD. This ‘Neurodevelopmental continuum and gradient’ is a major challenge to our categorical diagnostic system’s validity and implies we should pay careful attention to our patients’ early development during assessments.

We learnt that polymorphisms, such as retrotransposons (‘jumping genes’), in the non-coding genome can affect gene expression patterns and responses to environmental challenges and are implicated in neuropsychiatric conditions.

We heard how significant advances in genomic studies of depression are helping our understanding of the underlying mechanisms in the development of depression and hopefully will support the development of more personalised therapies.

In a discussion around resilience to developing psychiatric disorders we learnt that fMRI studies reveal what could be a ‘brain signature’ for resilience to developing bipolar disorder in people exposed to high genetic and environmental risks. This has the potential to be harnessed to develop new, protective therapies.

Some fascinating, almost futuristic research with the potential to explain disorders of brain connectivity showed how ‘mini brain’ organoids from pluripotent stem cells enable *in vitro* modelling of neuronal migration, maturation and function in the human brain.

Meanwhile, data from behavioural studies demonstrated how adverse experiences in early life can manifest not just in altered and distressed behaviour, but also leave their mark on germ cells as an ‘epigenetic footprint’ that transcends generations, affecting descendants’ behaviour despite them not being directly exposed to the trauma.

The day was an unmissable opportunity for interdisciplinary conversation between researchers and clinicians about how Neuroscience can advance our understanding of mental illness and shape patient care in the future. It inspired me to ask questions, such as ‘What is the dynamic interplay between nature and nurture in the development of mental illness?’ ‘Why do relatives at high risk of mental illness not develop it?’ ‘How can trauma transcend generations?’ and many others.

The conference also marked the launch of the RCPsych ***Neuroscience Champions*** scheme, developed and coordinated by Dr Gareth Cuttle. This group of Psychiatric trainees will form a network across the UK to ensure that Neuroscience is properly integrated into their respective deaneries. We were fortunate enough to receive a bursary to attend the conference, and it was a fantastic opportunity to meet likeminded trainees from different regions excited about shaping the integration of neuroscience in our respective localities.

The 2020 Neuroscience Spring Conference will be on Friday 13th March at the RCPsych in London. Watch out for news later in the year, sign up and join the conversation about how Neuroscience is shaping the future of Psychiatry!

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