the potential implications for health and cancer therapy. Given the crucial role of the reward system in emotional processes, our findings offer a new mechanistic insight to the association between the patient's psychological state, physical health and cancer progression.

Concurrent Symposia

30. AN IMMUNE PATHOGENESIS OF PSYCHOSIS? EVIDENCE AND CHALLENGES FROM BENCH TO BEDSIDE

Rachel Upthegrove
University of Birmingham

Overall Abstract: The immune pathogenesis story of schizophrenia is gathering momentum, with increasing evidence from animal models, genetic, circulating biomarker and neuropathological studies. Potentially ground breaking new treatment approaches are proposed. However, it is vital that basic science and is equally matched by deep understanding of the complexity of clinical samples and management of multiple confounding factors when moving from bench to bedside. This presentation will pull together key speakers from a variety of fields, demonstrating the need for continued dialogue in translational, and reverse translational, approach. We will present findings from preclinical studies, genetic insights, longitudinal modelling of immune markers from population-based samples and detailed analysis from clinical samples. Data will include evidence of a prenatal immune activation and the potential transgenerational transmission of behavioural and neuronal abnormalities, co-variation of gene sets associated with both increased risk of schizophrenia and immune function (eg CSMD1, DPP4) together with CRP and peripheral inflammatory cytokine association with symptom profiles in both larger population and clinical samples. Thus, evidence presented will move from large data to fine grain analysis, animals to man and from bench to bedside.
We aim to provide insights into early pathophysiological processes and forward avenues of research to the ultimate aim of elucidating the immune dysfunction impact on psychosis and future avenues for effectiveness of treatment.

30.1 IMMUNE PATHOGENESIS OF PSYCHOSIS: THE CHALLENGE OF CO-MORBIDITY

Rachel Upthegrove*[,1], Carl Krynicki[1], Annalisa Gordianno[2], Carmine Pariante[2], Toby Rowland[3], Nicholas Barnes[1], Steven Marwaha[3], Benjamin Perry[3], Paola Dazzan[2], John Deakin[4]
[1]University of Birmingham; [2]Institute of Psychiatry, Psychology and Neuroscience, King's College London; [3]University of Warwick; [4]University of Manchester

Background: The immune pathogenesis story of schizophrenia is gathering momentum, with increasing evidence from genetic, circulating biomarker and neuropathological studies. New treatment approaches are being trialled. However immune dysfunction is not unique to schizophrenia, and circulating proinflammatory biomarkers identified in schizophrenia have also been identified in bipolar disorder and major depressive disorders. Similarly, in recent times there has been an increasing recognition of commonality across categorical diagnoses at a symptom level; as RDoC criteria acknowledge. For example, depressive symptoms are common in schizophrenia, hallucinations and delusional beliefs common in mood disorders and anhedonia a cross diagnostic challenge
Methods: This presentation will include data of altered circulating pro-inflammatory markers from recently completed meta-analysis in first episode psychosis, established schizophrenia and bipolar disorder, highlighting the potential pluripotent inflammation pathway to mental disorders and outline a circulating cytokine profile at the onset and development of mental disorder as related to symptom specific profiles.
Results: Data on circulating inflammatory makers as related to symptom profiles cross-sectional and longitudinally will also be presented from the recently concluded NIHR funded BeneMin (The Benefits of Minocycline on negative symptoms in early phase psychosis) study.
Discussion: Future research should recognise co-morbidity, adopt a dimensional approach, or investigate symptom specific biomarkers at early stages of illness with numbers large enough to explore an immune specific clinical profile. This knowledge is essential in the developing story of inflammation and psychosis with the most potential in decades to translate into tailored effective treatment options.

30.2 GENETIC VARIATION RELATED TO IMMUNE FUNCTION AND SCHIZOPHRENIA RISK: EVIDENCE FOR EFFECTS ON COGNITION

Gary Donohoe*[,1]
[1]NUI Galway

Background: Altered immune response is associated with many psychiatric disorders, but whether and how these changes confer increased risk remains unclear. In schizophrenia, robust association between illness risk and the MHC region general, and complement component 4 (C4) specifically, has been demonstrated, along with evidence from both gene enrichment and other genetic analysis highlighting the broader role of genetic variation in additional immune related networks to schizophrenia risk.
Methods: In a series of recent studies from our group, we examined the effects of immune-related genetic variation, based on gene ontology, implicated in neural function both behaviourally in samples of ~1200 cases and controls, and cortically in samples of ~150 cases and controls.
Results: We found that (1) increased predicted C4A RNA expression predicted poorer performance on measures of memory recall ($p=0.016$, corrected) and a pattern of reduced cortical activity in middle temporal cortex during a measure of visual processing ($p<0.05$, corrected); (2) variation in a curated gene set associated with both increased Schizophrenia risk and immune function (CSMD1, DPP4, SRPK2, TRIM8, STAT6, FES, EP300, TNFRSF13c) were associated with both variation in both episodic memory and general cognitive ability.
Discussion: Based on these findings we conclude that schizophrenia risk associated with variation within immune related genes is likely to be conferred at least partly via effects on cognition, and the molecular mechanisms involved may include effects on inflammatory response.

30.3 ASSOCIATION BETWEEN SERUM C-REACTIVE PROTEIN, POSITIVE AND NEGATIVE SYMPTOMS OF PSYCHOSIS IN A GENERAL POPULATION-BASED BIRTH COHORT

Golam Khandaker*[,1], Jan Stochl[1], Stanley Zammit[2], Robert Dantzer[3], Glyn Lewis[4], Peter B. Jones[1]
[1]University of Cambridge; [2]Cardiff University; [3]University of Houston in Texas MD Anderson Cancer Centre; [4]University College London

Background: An association between low-grade inflammation and symptoms commonly shared between psychiatric disorders may explain the trans-diagnostic effects of inflammation, and lead to novel mechanistic hypotheses. Schizophrenia includes diverse symptoms, but the relationship