

## Notes on ASC2015

The Australasian Schizophrenia Conference (ASC) held in Melbourne (23-25 September 2015) showcased a dazzling array of cutting edge science. ASC2015 was a partnership between the Schizophrenia International Research Society (SIRS) and the International Congress on Schizophrenia Research (ICoSR) led and under-written by Psychosis Australia. The convenor, Prof Patrick McGorry assembled a stellar group of international and local speakers who covered the entire spectrum from basic neuroscience to practice based and service research.

ASC2015 was opened by two deeply moving narratives from people with lived experience of schizophrenia, Greg Ralls (a mining engineer and author) and Mary Griffith, wife and carer of Jeremy Oxley of the 1980's rock band the Sunnyboys. The first science-based presenter was Charles Schulz, Professor of Psychiatry at the University of Minnesota who described recent advances in biomarker research showing that the measurement of a broad range of proteins in the blood can now give valuable diagnostic information. Rene Kahn at the University of Utrecht then reviewed recent neuroimaging studies which have consistently demonstrated that subtle brain changes accompany the development of schizophrenia, some of which are genetically determined and others reflecting the progress of the illness. Importantly, Prof Kahn presented reassuring data that these changes are unlikely to be related to the adverse effects of medication. Professor James Meador-Woodruff of the University of Alabama described studies showing that in schizophrenia altered brain function may be related to the way brain cells transport and position many different types of neuroreceptors, a dysfunction that is potentially reversible. The next speaker, Lisa Dixon, Professor of Psychiatry at Columbia University described the barriers to evidenced-based service delivery innovation. An important reflection was that sometimes service innovation should proceed in parallel with collection of research evidence though a clear "line of sight" between evidence and practice innovation needed to be maintained to ensure that ineffective practice is weeded out as soon as emerging evidence fails to support its usefulness. Alison Yung, Professor of Psychiatry at University of Manchester gave an update on research into the ultra high risk group, drawing attention to the prevalence of impaired psychosocial function in this group irrespective of whether individuals transition to psychotic illness or not and the risk factors associated with poor function, including severe childhood maltreatment.

Epidemiological research featured strongly at ASC2015. An important symposium reviewed the latest findings from the National Survey of Psychotic Disorders which drew attention to the unmet needs of people living with psychosis, particularly in relation to physical health, rehabilitation, and social exclusion (loneliness). James Scott, Associate Professor at University of Queensland reviewed longitudinal cohort studies on the clinical significance of transient psychotic-like experiences in otherwise healthy young people, noting that for a small minority these were risk factors for a broader range of mental ill-health than just psychosis, and that occasionally their occurrence may be indicators of past childhood trauma, developmental disorder, or substance use. Scott Clark, Senior Lecturer at University of Adelaide described how advanced statistical analysis can be applied to clinical data to identify individuals with risk factors for psychosis who will actually develop psychotic illness thereby guiding and targeting preventive intervention.

Flavie Waters, Associate Professor at University of Western Australia reviewed current psychological models explaining hallucinatory experiences, and showed that auditory hallucinations were not

specific to schizophrenia and that much could be learned from research into other brain conditions producing auditory and other types of hallucinations. Thomas Whitford, Senior Lecturer in Psychology at the University of New South Wales, presented his research on a psychological model of psychotic symptoms which proposes that such symptoms result from an inability of the brain to suppress activation in response to self-generated thoughts and sensations, causing the individual to experience them as if externally generated. The importance of this psychological model is that it maps onto neural models of brain function which indicate that when an individual initiates behaviour a forward feedback collateral “copy” of the intended action is neurally generated to suppress other brain cells from encoding the behaviour as externally generated.

Carol Tamminga, Professor of Psychiatry at University of Texas described her laboratory’s focus on molecular pathology in hippocampus, the key part of the brain that orchestrates the laying down and retrieval of memories, and how this pathology may be critical to the experience of delusions and hallucinations. The major findings presented concerned evidence of selective reduction of activation in a sub-region of the hippocampus called the dentate gyrus, resulting in excessive activation of pyramidal cells in another sub-region of the hippocampus called CA3. Because this imbalance is related to changes in the glutamatergic rather than dopaminergic system, Prof Tamminga’s research adds weight to the notion that excessive subcortical dopamine release, the main target of antipsychotic drugs, may be driven by a primary pathology in the glutamatergic system which current drug treatments do not correct.

There were several plenary and symposium sessions devoted to service research and innovation. Eric Chen, Professor of Psychiatry at the Hong Kong University described how effective services for first presentation patients with psychosis could be achieved with very modest resources. Compared to historic controls, patients receiving these services had fewer days in hospital and better occupational outcomes. Importantly, these services were needed and effective in the large number of patients who present over the age of 25 years. Of interest were findings that patients tended to stop medication and relapse because they associate the need to continue medication with the perception of non-recovery, their view that they were unlikely to relapse, and because they attributed residual cognitive deficits to their medication rather than their illness. These findings have relevance to the design of psychoeducational packages for early psychosis programs. Jackie Curtis, Clinical Director of Youth Mental Health in South Eastern Sydney described the develop of their services targeting the physical health of first presentation psychosis patients. These included regular metabolic monitoring, lifestyle interventions, early introduction of the anti-diabetic agent metformin in those who gain weight, and work force education in prioritising physical health in mental health services. Mario Alvarez, Associate Professor at University of Melbourne reported on the progress of interventions delivered by social media for the ongoing support of young people with psychotic illness. All speakers emphasised the need to include consumers in research from the outset of any project designed to improve service delivery.

In addition to the plenary highlights, there were many outstanding symposia and excellent brief oral and poster presentations. A symposium on neuroinflammation suggested that some of the neurodevelopmental findings in schizophrenia could be related to maternal immune activation during pregnancy, and that there may be a subgroup of patients with schizophrenia in whom immune activation is a driver of the progression of their illness and that anti-inflammatory drug treatment may improve their cognitive function. Another symposium on sex steroids presented

evidence that modulation of the oestrogen receptor in particular had direct effects on the dopaminergic system, and this may explain sex differences in the incidence of schizophrenia. Another symposium reported intervention studies aiming to correct deficits in mismatch negativity, and in turn improve psychosocial function in schizophrenia. Among the many world-class brief oral and poster presentations, there were a number of exemplary presentations. Dr Colm McDonald (Ireland) reported on MRI-indexed brain volume deficits that appear to be associated with cognitive decline in schizophrenia; and that these deficits are not reversed by clozapine treatment. Dr Cassandra Wannan (Australia) reported evidence that although overall cognitive function appeared to stabilise after recovery from the first episode of psychosis, selective cognitive functions (e.g., visuo-spatial associative memory) continued to show progressive deterioration, analogous to the MRI brain volume changes reported by Prof Kahn. Hannah Myles (Australia) found that sleep studies reveal sleep apnoea in many obese patients taking clozapine, sleep apnoea being a remediable cause of disabling comorbidity.

David Meldrum made the important announcement that Psychosis Australia will auspice the next Australasian Schizophrenia Conference in Sydney in 2017 and that Associate Professor Anthony Harris at Sydney University will play a leading coordinating role. David Meldrum indicated that the intention was to build on the impact of ASC 2015, to foster the collaboration between SIRS, ICoSR, and Psychosis Australia, and to broaden the scope of the next conference to have a greater focus on bipolar disorder. At the closing session of ASC2015 Stan Catts thanked Patrick McGorry, the Program Committee, and the Pathanon Group for making ASC2015 such a superb educational event. Anthony Harris called for immediate feedback and input from ASC2015 delegates to guide the development of the 2017 Conference.

Written by Stan Catts  
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