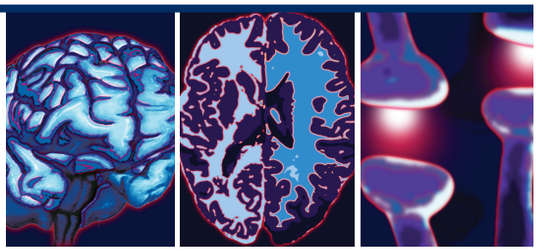

Study reveals inadequate depression screening in stroke patients

Canadian researchers find in a study population of 294 patients that neither those receiving antidepressants nor those requiring them receive adequate assesment while in rehabilative care.

A recent Canadian study has highlighted significant problems with the way antidepressants are prescribed in stroke patients. The findings, which were presented at the beginning of October 2012 at the Canadian Stroke Congress (Alberta, Canada), have revealed that many stroke patients are prescribed antidepressants without proper diagnosis, screening or reassessment; while those actually suffering from the condition may be overlooked for help. "A lot of people are being treated for depression, but we don't know if they're the right ones," explained Katherine Salter (Parkwood Hospital, Ontario, Canada), lead researcher in this study.

Depression is the most prevalent mental health issue following stroke with approximately 25% of stroke patients experiencing the condition, which is known to impair recovery. In this recent study, the medical charts of 294 stroke patients discharged from five in-patient rehabilitation programs in southwestern Ontario from September 2010 to March 2011 were examined to investigate patterns of depression screening and treatment in this population.

The medical charts revealed that, while 40% of patients were receiving antidepressants, only three out of the 294 had been formally screened, assessed and diagnosed with the condition beforehand. In addition to this lack of proper screening, the study also found that 100% of patients taking antidepressants upon admission to in-patient rehabilitation were still taking their medications upon discharge, with the majority not having been reassessed while in rehabilitative care. "No matter what the best practice recommendations say, if you're on an antidepressant when you show up, you will not likely be screened or assessed, but you will be given more drugs," commented Salter.

This apparent lack of screening and reassessment also means that those patients suffering from depression, but not receiving, any medication are likely to be overlooked while in rehabilitation. Their depression may be preventing them from participating in post-stroke therapy and they could be spending longer than otherwise necessary in rehabilitation or hospital.

The researchers behind this recent study suggest that the lack of screening may

"...the lack of screening may be caused by a lack of access to mental healthcare practitioners and reluctance by some clinicians to change their practice."

Future Medicine part of fsg

be caused by a lack of access to mental healthcare practitioners and reluctance by some clinicians to change their practice. Canadian Best Practice Recommendations for Stroke Care demand clear and formal steps for managing depression in this particularly at-risk patient group. "We need to be able to include psychological resources as part of our healthcare team. These professionals should be a central, integrated part of recovery," concluded Salter. It is hoped that such measures would produce more positive outcomes for stroke patients and their support networks.

Source: Heart and Stroke Foundation of Canada. Press release: www.eurekalert.org/pub_releases/2012-10/hasf-sfp092712.php

Researchers turn their attentions to views of children with ADHD

A recently published study has explored the views and experiences of children living with ADHD, revealing that many of them feel that medication does actually help them to control their behavior and improve decision-making. The study authors hope that their work will improve understanding of the disorder amongfamilies, doctors, teachers and the children themselves, as lead study author Ilina Singh (King's College London, UK) explained: "ADHD is a very emotive subject, which inspires passionate debate. Everyone seems to have an opinion about the condition, what causes it, and how to deal with children with ADHD, but the voices of these children are rarely listened to. Who better to tell us what ADHD is like and how medication affects them than the children themselves?"

> "...it is imperative that children are able to openly discuss the value of diagnosis and different treatments with a trusted professional."

The ADHD Voices on Identify, Childhood Ethics and Stimulants (ADHD VOICES) study, which was funded by the Wellcome Trust (London, UK), included 151 UK and US families with ADHD children. Participants were interviewed about ADHD, behavior and medications (e.g., methylphenidate/Ritalin®) and asked to consider these in the contexts of home, school, their peer groups and visiting the doctor in order to explore ethical and societal issues surrounding this disorder and its treatments.

Prescribing medication to children with ADHD is controversial; some argue that it can turn children into 'robots'. However, Singh believes that, if prescribed following a correct diagnosis of ADHD, stimulants can benefit the child, particularly if used alongside other interventions. The recent ADHD VOICES study appears to support this standpoint; children reported they feel medication improves their ability to make their own moral choices by making it more

PAR1: a potential gatekeeper of post-traumatic stress disorder

Recent research from the University of Exeter Medical School (Exeter, UK) has provided further insight into the mechanisms behind the development of post-traumatic stress disorder (PTSD), revealing that PAR1 in amygdala neurons could play an important role in preventing the development of a pathological fear response. The findings have been published online ahead of print in *Molecular Psychiatry*. While further investigation is required, the authors of the study note the exciting prospect that treatments modifying PAR1 action could one day be considered to treat PTSD.

Normally, before a traumatic event, PAR1 molecules are stimulatory towards firing of basal amygdala neurons, causing vivid emotions. However, following a traumatic event, the receptors instead send inhibitory signals, preventing the vivid emotional response; this is protective against uncontrollable fear and the development of PTSD when faced with harmless triggers after the initial trauma.

"The discovery that the same receptor can either awaken neurons or 'switch them off' depending on previous trauma and stress experience, adds an entirely new dimension to our knowledge of how the brain operates and emotions are formed," explained lead author Robert Pawlak (University of Exeter Medical School).

In this recent study, PAR1-deficient mice developed a pathological fear response to even mild, adversive stimuli, suggesting the important role of PAR1 in the prevention of such a reaction. The researchers propose that this is caused by an experience-specific dynamic shift between distinct G protein-coupling partners: prior to conditioning, coupling of PAR1 to both Gαq/11 and Gαo proteins was observed. However, increased PAR1–Gαo coupling occurred following fear conditioning.

"We are now planning to extend our study to investigate if the above mechanisms, or genetic defects of the PAR1 receptor, are responsible for the development of anxiety disorders and depression in human patients," concluded Pawlak. "There is more work to be done, but the potential for the development of future therapies based on our findings is both exciting and intriguing."

Source: Bourgognon JM, Schiavon E, Salah-Uddin H *et al.* Regulation of neuronal plasticity and fear by a dynamic change in PAR1–G protein coupling in the amygdala. *Mol. Psychiatry* doi:10.1038/mp.2012.133 (2012) (Epub ahead of print).

difficult to make the 'wrong' choice and they do not feel that they are turned into "robots".

The study also revealed that there is often little meaningful contact between the child and their doctor, leading to a poor understanding by the child about their condition and medication. It was found that ADHD clinic appointments tended to concentrate on side-effect checks (e.g., weighing and measuring) rather than asking the children questions. "Given the ethical concerns that arise from ADHD diagnosis and stimulant drug treatment, it is imperative that children are able to openly discuss the value of diagnosis and different treatments with a trusted professional," stated Singh.

The study concludes with recommendations for parents, doctors and teachers about how they can help improve a child's understanding of ADHD in order to improve their lives.

Source: Wellcome Trust. Press release: www.wellcome.ac.uk/News/Media-office/Press-releases/2012/WTP040447.htm

Two studies shed further light on bipolar disorder genetics

Two separate studies from King's College London's Institute of Psychiatry (IoP; UK) and The Scripps Research Institute (TSRI; FL, USA) have recently added to our knowledge of the genetic basis of bipolar disorder (BP). The UK researchers performed one of the largest ever genetic replication studies of bipolar affective disorder, while the US team focused their attentions on genetic variants in the cAMP signaling pathway, which has been previously implicated in BP genetics. The findings from both endeavors could one day be used to inform the development of new treatments.

At the IoP, researchers studied 2562 BP cases and 25,439 controls gathered from seven cohorts, in which individuals had undergone either genome-wide association or individual genotyping of rs2251219 and tagging of SNPs across the *PBRM1* gene. Variations in this gene locus have previously been identified in genome-wide association studies as being associated with risk of BP, in addition to other psychiatric phenotypes, such as major depressive disorder and schizophrenia.

This recent IoP study confirmed a significant association of rs2251219 with BP using the researchers' own dataset and a meta-analysis of previously published studies. The study also examined the link between this variant and schizophrenia using similar methods on a separate dataset; however, no significant association was revealed. *PBRM1* encodes a chromatin-remodeling protein, adding to the increasing interest in the role of epigenetics in the development of BP.

In the USA, a team at TSRI has identified several new variants in genes associated with BP type I (the most common and severe form) and BP type II. Previous studies have suggested the involvement of the cAMP signaling pathway in BP, and this recent study focused on genetic variants within this pathway.

"As far as I know, this has not been done before – to query a single signaling pathway," explained Ron Davis, who led the recent research at TSRI. "This is a new approach. The idea is if there are variants in one gene in the pathway that are associated with BP, it makes sense there would be variants in other genes of the same signaling pathway also associated with the disorder."

Davis and his team looked at 1172 type I patients, 516 type II patients and 1728 BP-free controls, examining SNP, haplotype and SNP × SNP interactions for associations with BP. Several statistically significant associations between *PDE10A* gene variants and BP type I were identified, as well as between *DISC1* and *GNAS* variants and BP type II. *PDE10A* expression is seen in the striatum – the brain area associated with learning and memory, decision-making and motivation – which could mean this gene will be of particular interest in future research.

These two BP genetics studies both bring further information to the table regarding the genetic basis of this highly heritable disorder, widening the range of genetic variants that could be explored as potential therapeutic targets in the future.

Sources: Vassos E, Steinberg S, Cichon S *et al.* Replication study and meta-analysis in European samples supports association of the 3p21.1 locus with bipolar disorder. *Biol. Psychiatry* 72(8), 645–650 (2012); McDonald ML, MacMullen C, Liu DJ, Leal SM, Davis RL. Genetic association of cyclic AMP signaling genes with bipolar disorder. *Transl. Psychiatry* 2, e169 (2012); Elsevier. Press release: www.alphagalileo.org/ViewItem.aspx?ItemId=124951&CultureCode=en; The Scripps Research Institute. Press release: www.scripps.edu/news/press/2012/20121010davis.html

– All stories written by Sarah Miller

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