Welcome to this review of the 2019 APS (Australian Pain Society) 39th Annual Scientific Meeting, held at the Gold Coast Convention and Exhibition Centre in Queensland, in the IASP Global Year Against Pain in the Most Vulnerable.

The meeting provided a programme that included mechanistic and clinical research spanning psychological, surgical, pharmaceutical, social and epidemiological domains. It provided attendees with the opportunity to learn from these sessions and also to meet and network with colleagues interested in pain management research. From the wealth of presentations, ten have been selected for inclusion in this Conference Review, which we hope you will find interesting and informative.

We look forward to receiving your comments and feedback, which are always appreciated.

Kind Regards,
Dr Tim Ho
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Applying psychological science for pain relief and opioid reduction across the continuum of care

Presenter: Darnall B, Stanford University, USA

Summary: A high-level overview of psychological science, including a number of large-scale ongoing national trials and its role in pain relief and patient-centred prescription opioid tapering in the US, was presented. There was also focus on digital behavioural pain medicine treatment platforms to scale access to low-cost, low-risk perioperative pain and improve the time to postoperative opioid cessation. The importance of patient-level, provider-level and environmental targets for creating a clinical cultural transformation in treating pain better and at lowest risk was also highlighted.

Comment: Professor Beth Darnall provided some cost-effective alternatives in delivering effective psychotherapy for chronic noncancer pain. Professor Darnall presented efficacy data on a single 2-hour session CBT that produced durable reductions in pain catastrophisation. It is exciting that there were also data on acute perioperative pain of this intervention, showing early cessation of opioids postsurgery. The clinical efficacy was backed up by functional MRI data showing increases in prefrontal grey matter volume in patients with chronic pain after CBT. Professor Darnall emphasised that everyone needs behavioural pain medicine, as prevention is better than managing problems.

Plenary Session 1

A focus on mechanisms: understanding the mediators of three psychosocial treatments for chronic low back pain

Presenter: Day M, The University of Queensland, Australia

Summary: Mechanism results were presented for a recently completed RCT that compared mindfulness meditation, cognitive therapy and mindfulness-based cognitive therapy in patients with chronic LBP. The findings provided an in-depth analysis of both shared and unique mediators to each of these approaches, and they were discussed within the context of the theoretical frameworks associated with the three treatments.

Comment: Dr Melissa Day presented evidence on the mechanism theory of evidence-based psychological treatments for chronic noncancer pain. CBT was thought to have specific mechanisms of reducing pain catastrophisation, and mindfulness-based therapy for increase in mindfulness. Dr Day presented data showing that CBT, mindfulness-based supportive therapy and mindfulness meditation are all equally significant for improving pain intensity, pain catastrophisation and mindful nonreactivity. This suggests that CBT, mindfulness-based supportive therapy and mindfulness have shared mechanisms (instead of individual specific mechanisms). Further association study showed that pain catastrophisation had a greater association than mindful nonreactivity in reducing pain interferences, suggesting that pain catastrophisation may be the critical target in the treatment of chronic noncancer pain. Further research is needed to validate this finding, and to address individualised treatment and more precise measures.

Plenary Session 1
Does improving dietary patterns and nutritional status within chronic pain management work?

Presenter: Collins C, University of Newcastle, Australia

Summary: The findings of a systematic review of current evidence for nutrition interventions targeting pain severity and intensity were the focus of this presentation. Four types of research study were identified, including trialling overall diet alterations, specific nutrients, dietary supplements and fasting. A meta-analysis of a subgroup of studies revealed significant reductions in pain with some nutrition interventions, with studies trialling alterations in overall diet or single nutrients having the greatest effect sizes. The importance and potential effectiveness of nutritional interventions for individuals with chronic pain were discussed, as were the results of a collaborative effort to address improving nutrition within the current person-centred model of care for chronic pain management, the promising results of a pilot intervention that randomised patients to personalised dietary consultations from an accredited practising dietitian, and practical recommendations for improving dietary patterns and nutrition-related health in patients with chronic pain.

Comment: Ms Claire Collins remarked that there is a lack of evidence thus far for popular dietary regimens for chronic pain (e.g. 5:2 diet, ketogenic diet), and for supplements (e.g. single nutrient, phytounitrogen). A previous systematic review (42 RCTs) of omega 3 (EPA/DHA >1.5) showed mild reduction in pain of 0.8 points on a visual analogue scale with the strongest evidence in rheumatoid arthritis. However, Ms Collins reminded us that dietary habits may reduce inflammation (e.g. healthy food habit, fibre 30 g/day, water 2 L/day) and increase lean body mass (protein >1 g/kg, healthy fat with <7% saturated fat and consumption of complex carbohydrates). Ms Collins discussed her feasibility study on a massive online open course, showing dietary telehealth consultations and weight loss diet consultations, with the goal of changing dietary habit, reduced pain interference, improved pain efficacy and reduced catastrophisation. A further full-powered RCT is pending. Ms Collins discussed an online resource for a free online healthy eating quiz (http://healthyeatingrequir.com.au) to improve diet quality, which has been shown to reduce the all-cause mortality risk by 17–42%. Furthermore, by managing bodyweight, aiming for a 5–10% reduction, we may reduce the risk of diabetes by 50%.

Low back pain: what would a paradigm shift look like?

Presenter: Hush J, Macquarie University, Australia

Summary: Evidence regarding the ways in which the paradigm of primary-care management of acute LBP may be shifted was examined in this presentation. There was discussion on the utility of complex intervention development methodologies, including codesign by clinicians and patients, and a model of person-centred multimodal care designed to address individual biopsychosocial contributors to LBP was proposed.

Comment: Associate Professor Julia Hush reminded us that LBP represents a high global burden of disease and a leading cause of disability. Interestingly, the prevalence of LBP between 1990 and 2010 remained unchanged at 9.4%, but the burden of disability due to LBP significantly increased during the same period of time, despite significant research and advances in medical/surgical treatment. Associate Professor Hush discussed the limitation of current research to reflect the biopsychosocial factors. New research paradigms are needed, including complex intervention development, intervention mapping, cluster randomised trials, reference trials and n of 1 trials. Associate Professor Hush discussed the feasibility of a pragmatic study of an individualised multidisciplinary pain programme ‘My back, My plan’ at Macquarie health. This new paradigm of research will facilitate the transformation of education and provide treatment models to improve outcomes, patient experiences and provider experiences and reduce costs.

Pain management in CALD communities

Presenters: De Sousa M, Chen M & Brady B

Summary: This workshop outlined recent innovative work, undertaken in NSW and in South-East Asian countries, that has addressed the challenges of delivering pain management within CALD (culturally and linguistically diverse) communities, including: i) challenges and strategies for chronic pain assessments for CALD communities associated with the implementation of culturally-adapted physiotherapy programmes in south-western Sydney; ii) practical solutions for implementing a Chinese language pain self-management programme in south-eastern Sydney; and iii) current initiatives for developing and establishing pain services in south-east Asian countries.

Comment: Ms De Sousa reminded us of the challenges of delivering self-management programmes for chronic pain patients of CALD backgrounds, and the barriers of conflict in belief, expectation, trust, health literacy, lack of trained personnel and funding. Agency for Clinical Innovation reports in 2015 showed that the need of chronic pain management in CALD communities was not met due to lack of bilingual clinicians. Ms De Sousa presented an alternative option of a brief programme delivered by a nonclinician. In NSW there have been 20 programmes (n=159) run for CALD chronic pain patients. Ms De Sousa also presented data from Malaysia showing improved pain, disability and catastrophisation with a pain self-management programme. PMRI, IASP and ASEQ have collaborated in the training and setup of a supporting pain management programme in South East Asia. Ms Meng Chen shared her personal success in three Chinese-speaking CALD brief pain programmes. She reported some challenges she faced in implementing the group programme, namely the concept and practice of relaxation, expression and language of chronic pain and documentation. Overall, the feedback was positive with reported improvements in understanding and management of chronic pain, sense of hope and reduced bothersomeness. Ms Chen suggested that preprogramme sessions, having support from pain clinic and peer support group via WeChat after, have been helpful in the implementation. Ms Bernadette Brady raised the high fall-to-attend and dropout rates in the CALD population in chronic pain management programmes, despite the presence of an interpreter. Ms Brady emphasised that cultural adaptation extends beyond language, and other elements need to be considered, including patient explanatory framework, cultural value, health literacy and cultural biases, and individualised programmes to address these elements are needed. PRISM is a dynamic tool that assesses the relationship between pain and other values (e.g. spirituality, family, work). Ms Brady presented a study on the PRISM tool (pictorial representation of illness and self-measure) for assessment in CALD patients with severe musculoskeletal pain and interferences, showing better adherence and treatment retention rates with noninferior outcomes in patient satisfaction and Depression Anxiety Stress Scales.

Topical Concurrent Session 1B
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*Analgesia not solely derived from opioid agonism. †S8 analgesic.

#Meta-analysis to assess non-inferior efficacy and tolerability in moderate to severe pain (p<0.001 for all events) in patients with chronic knee osteoarthritis or low back pain. ††In Physical and Social Functioning and Role Physical (SF-36 outcomes, p<0.008)

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CONTRAINDICATIONS: Known hypersensitivity to tapentadol or any component of PALEXIA SR, conditions in which mu-opioid receptor agonist activity is contraindicated (e.g. significant respiratory depression and acute or severe bronchial asthma or hypoxia; confirmed or suspected paralytic ileus; acute severe liver disease; patients with head injury brain tumours, a history of seizures, or any condition that increases risk of seizures, moderate hepatic impairment or biliary tract disease, including acute pancreatitis, use in pregnancy (Category C), should not be used during breastfeeding. Not recommended for children <18 years old. May impair ability to drive or operate machinery INTERACTIONS: Care should be taken when combining with mixed opioid agonist/antagonists or partial mu-opioid agonists; additive CNS depression with concomitant administration of other mu-opioid receptor agonist analgesics, general anaesthetics, phenothiazines, other tranquillisers, sedatives, hypnotics or other CNS depressants (including alcohol and illicit drugs) – reduction of dose of one or both agents should be considered; contraindicated in patients who are receiving MAO inhibitors or who have taken them within the last 14 days. Isolated case reports of serotonin syndrome when used in combination with serotonergic drugs (see full PI). ADVERSE EFFECTS: Very common (≥10%): Dizziness, somnolence, headache, nausea, constipation. Common (≥1% to ≤10%): Decreased appetite, anxiety, decreased mood, sleep disorder, nervousness, restlessness, disturbance in attention, tremor, muscle contractions involuntary, flushing, dyspnoea, vomiting, diarrhoea, pruritus, hyperhidrosis, rash, asthenia, fatigue, feeling of body temperature change, mucosal dryness, oedema. Postmarketing: suicidal ideation, angioedema, anaphylaxis and anaphylactic shock.


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Managing the opioid dependent patient with chronic pain – learning by case-based discussions

Presenters: Harris N & Hogg M

Summary: This interactive workshop was designed to explore the management of complex pain cases using case-based discussions with focus on acute and chronic pain in individuals with opioid dependence. There were also discussions on relevant legislative issues and innovative approaches to treatment. Attendees were encouraged to bring relevant de-identified cases with them for discussion.

Comment: Dr Newman Harris reminded us that comorbid psychiatric disorder and substance use disorder are common in the chronic pain population on long-term opioid treatment. Dr Harris presented a challenging case of an elderly patient with chronic mixed nociceptive/hyperalgesic back pain and comorbid major depressive disorder on high-dose chronic opioid treatment, in the setting of multiple medical comorbidities (including respiratory and renal system). Dr Harris presented studies demonstrating that anxiety/depression is correlated with increased pain intensity, increased drug craving in addicted patients and increased impulsivity. He discussed the TROUP study showing that chronic opioid use is more common in patients with mental health disorders and substance use disorders, with larger doses and longer periods. Dr Harris discussed the potential reason for this, such as severity of the condition, self-medication for distress and enabling by busy clinicians.

Dr. Malcolm Hogg presented a case discussion of neuropathic back pain on high-dose opioids, with clinical evidence of uncontrolled use, compulsive and harmful use in a rural setting. He raised the issue of the lack of support of addiction medicine specialists and pain specialists in rural settings. Dr. Hogg discussed possible advantages of quantitative serum drug screening as objective evidence of prescription drug abuse in selected cases: SafeScript (real-time monitoring) has been introduced in Victoria and provides a central database for doctors and pharmacists, and is integrated into practice software. SafeScript screens for all 58 drugs, benzodiazepines, 2 drugs and quetiapine, and will be mandatory by June 2020. It will be interesting to see further data from SafeScript. Dr. Hogg also discussed variability of guidelines regarding advice on the capacity to drive for patients on opioids. In the UK, impairment of driving is discussed with all patients on oral morphine equivalent daily doses of >200mg. Previous study showed impaired driving with acute low-dose methadone/buprenorphine use. A review of current guidelines for driving may be needed.

Topical Concurrent Session 2A

Understanding opioid harm: insights gained from Australian data

Presenters: Gisew N & Hogg M

Summary: Postmarketing Australian data from the National Drug and Alcohol Research Centre on pharmaceutical opioids were examined in this presentation, which asked what the appropriate service responses to opioid use in the community should be. Clinical implications for persistent pain practitioners were explored and there were discussions based around in-hospital and community service responses to opioid use in the community should be. Clinical implications for persistent pain of interest included: clinical management of chronic pain; i) the lack of evidence for opioid effectiveness in chronic pain and the individual and societal issues associated with opioid use; ii) the role of NGF in chronic pain; and iii) the clinical development of novel approaches to target NGF in chronic pain management.

Comment: Dr. Gisew discussed the lack of evidence for opioid effectiveness in chronic pain and the individual and societal issues associated with opioid use. Dr. Hogg also discussed variability of guidelines regarding advice on the capacity to drive for patients on opioids. In the UK, impairment of driving is discussed with all patients on oral morphine equivalent daily doses of >200mg. Previous study showed impaired driving with acute low-dose methadone/buprenorphine use. A review of current guidelines for driving may be needed.

Pharmacological management of low back pain: guideline recommendations, evidence and implications

Presenter: Lin C, University of Sydney, Australia

Summary: This presentation updated the current international clinical guidelines’ recommendations on the pharmacological management of LBP, with a review of the evidence that has informed the recommendations. The implications for practice and future research were also discussed.

Comment: The current guideline recommendations for acute LBP are moving away from pharmacotherapy and focusing on nonpharmacological treatments. Associate Professor Christine Lin presented data on paracetamol (acetaminophen), anticoagulants and opioids for acute LBP. She showed us data from an RCT that paracetamol was not effective for acute LBP (William 2014). The data from a pregabalin RCT were also disappointing (Mathisen 2017), showing lack of efficacy and increased adverse events when compared with placebo. She also discussed data on increasing pregabalin misuse (Crossing 2018). Associate Professor Lin concluded that paracetamol is not recommended for acute LBP, and that recommendation for pregabalin should be reconsidered. A further RCT by Associate Professor Lin looking at oxycodone versus placebo for acute LBP at 6 weeks with follow-up at 1 year is on the way. I look forward to future updates of her study outcomes.

Plenary Session 2

Emerging targets in chronic pain: understanding nerve growth factor (NGF)

Presenter: Langford R, St Pancras Clinical Research, UK

Summary: This symposium on emerging novel potential therapeutic targets for chronic pain consisted of i) the classifications, epidemiology and unmet needs in the clinical management of chronic pain; ii) the lack of evidence for opioid effectiveness in chronic pain and the individual and societal issues associated with opioid use; iii) the role of NGF in chronic pain; and iv) the clinical development of novel approaches to target NGF in chronic pain management.

Comment: Professor Langford updated us on the development of NGF antibodies. NGF is produced by cells (e.g. muscle, epithelial cell, glia, immune cells) and is induced by proinflammatory cytokines; it is elevated in both acute and chronic pain conditions. Increased NGF levels were found in synovial fluid in OA, rheumatoid arthritis and disc injury. NGF binds to TKA receptors and modulates intracellular signalling (e.g. CGRP, BDNF), and increases membrane permeability and upregulates ion channels (e.g. ASIC, TRPV), thus increasing neural excitability. NGF antibodies block nerve fibre sprouting in murine arthritis model. A previous mouse study showed that anti-NGF 10 mg/kg has been efficacious for normal inflammatory fracture pain. Tanezumab, an anti-NGF antibody, was developed and has been shown to downregulate elevated NGF levels to normal levels in a chronic pain model. However, the development of NGF antibodies was put on hold in 2008 due to reported cases of what was thought to be osteonecrosis. This was then demonstrated to be mostly accelerated OA, and rare cases of osteonecrosis were mostly related to concurrent NSAID use (>90 days a year). Clinical hold was lifted in 2012 with a risk mitigation strategy in place (NSAID <60 days, and no pre-existing rapidly progressive OA). The phase 3 safety and efficacy trial was at completion for OA and chronic LBP. I look forward to the data from the phase 3 trial.

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