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**Abbreviations used in this issue:**

ACT = acceptance and commitment therapy; CBT = cognitive behavioural therapy; NRS = numerical rating scale; RCT = randomised clinical trial.

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**Welcome to issue 52 of Pain Management Research Review.**

Research from the US VA (Veteran's Affairs) healthcare system reporting on the success of integrating an interdisciplinary chronic pain care intervention into primary care begins this issue. US veterans are also the target of research reported in two of the other papers included in this issue. These two papers look at changes in pain intensity following discontinuation of long-term opioid therapy, and the value of ACT (acceptance and commitment therapy) in individuals at risk of chronic pain and opioid use following orthopaedic surgery. Promising results for nurse-delivered CBT (cognitive-behavioural therapy) in the management of patients with chronic back pain are also reported.

I hope the research covered in this issue helps to keep you up to date. You are welcome to send any comments or feedback you have to the email address below.

Kind Regards,

Dr Tim Ho
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**The Integrated Pain Team: a mixed-methods evaluation of the impact of an embedded interdisciplinary pain care intervention on primary care team satisfaction, confidence, and perceptions of care effectiveness**

**Authors:** Purcell N et al.

**Summary:** These researchers conducted qualitative semistructured interviews of 61 primary care providers, primary-care team members and organisation stakeholders, as well as supplementary quantitative surveys of 65 providers, to compare those that had referred patients to an interdisciplinary chronic pain care intervention (Integrated Pain Team) with those that had not. Most interviewees reported that chronic pain care was improved by the intervention, via provision of a comprehensive pain treatment plan, education on opioid risks and descriptions of multimodal treatment options. The care team members reported better patient education and reductions in emotionally charged interactions with patients, while providers reported that the intervention allowed them to focus their time on other health concerns. However, there was no indication from the supplemental survey that the intervention improved providers’ confidence in their own pain care skills or in their relationships with their patients with chronic pain.

**Comment:** This is a qualitative semistructured interview and quantitative survey of primary-care team members in one regional US Veteran’s Affairs healthcare system, showing a perceived need for a multimodal biopsychosocial intervention with an integrated pain team. Providers in the primary care setting often lack confidence in their ability to provide the best possible pain care independently, with the time restriction. I note that the primary criticism was that the integrated pain team did not take over referred patients’ care or for a longer period of time. Further interventions to achieve the right balance between primary care provider empowerment and supplemental support by the integrated pain team are needed.

**Reference:** Pain Med 2018;19:1748–63

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**EC_{50} of epidural ropivacaine combined with dexmedetomidine for labor analgesia**

**Authors:** Zhang W & Li C

**Summary:** Sixty full-term primiparas received 10mL of ropivacaine with or without dexmedetomidine 0.5 µg/mL for induction of epidural anaesthesia in this research, with the aim of comparing EC_{50} (median effective concentration) values for ropivacaine; ropivacaine doses were set using the up-and-down sequential allocation method, starting with a 0.1×0.01% gradient. The EC_{50} of ropivacaine was lower when combined with dexmedetomidine than when given alone (0.062% vs. 0.083% [p<0.05]).

**Comment:** A previous study by Wangping et al. showed that the optimal dose of epidural dexmedetomidine added to epidural 0.1% ropivacaine was 0.5 µg/mL. This is a prospective cohort study (n=60) of labour analgesia in full-term nulliparous women in spontaneous labour, showing that adding 0.5 µg/mL dexmedetomidine to epidural ropivacaine (10mL) decreased the EC_{50} from 0.083% to 0.062%, using the up-and-down method. This is consistent with a previous study by Polley et al. showing an EC_{50} for ropivacaine alone of 0.089% and a previous study by Aveline showing coadministration of clonidine 60µg reduces the EC_{50} of ropivacaine from 0.081% to 0.035%.

**Reference:** Clin J Pain 2018;34:950–3

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Clinical indications associated with opioid initiation for pain management in Ontario, Canada

Authors: Pasricha SY et al.

Summary: Clinical indications associated with opioid initiation, along with characteristics of initial patient prescriptions, were reported for a retrospective cohort of patients from the population of Ontario who started prescription opioids for pain management over a 12-month period. From a total of 653,993 individuals, 575,512 starting opioids were successfully classified into 23 clinical indications covering the following six clusters: dental (23.2%), postsurgical (17.4%), musculoskeletal (12.0%), trauma (11.2%), cancer/palliative care (6.5%) and other (17.7%). Patients with postsurgical pain had the highest daily doses, including 40.5% receiving ≥50mg morphine equivalents, and those with musculoskeletal pain received the most initial prescriptions with a duration of >7 days (34.2%).

Comment: This is a retrospective population-based cohort study (n=653,993) of new users of prescription opioids, from April 2015 to March 2016, showing postsurgical patients were started on higher doses (≥40%) on >50mg oral morphine equivalents; ≥25% on >90mg oral morphine equivalents) and musculoskeletal pain patients receiving longer durations of prescriptions (≥33% for greater than 7 days). A previous study by Shah suggested that shorter prescription durations (3–7 days) are associated with less long-term use. Higher doses have been associated with risk of overdose death, depression, road trauma and falls. This study validates previous literature that acute pain accounts for the majority of opioid initiations. Further efforts to inform the downstream risk and to review prescribing patterns are needed.

Reference: Pain 2018;159:1562–8

Abstract

Cannabis and cannabinoids for the treatment of people with chronic noncancer pain conditions

Authors: Stockings E et al.

Summary: This was a systematic review and meta-analysis of 91 publications covering 47 RCTs and 57 observational studies investigating the use of cannabinoids for noncancer pain in a total of 9958 participants; 48 studies examined neuropathic pain, seven fibromyalgia, one rheumatoid arthritis and four other chronic noncancer pain indications. The pooled RCT data showed that compared with placebo, cannabinoids were associated with significantly higher event rates for a 30% reduction in pain (29.0% vs. 25.3%), but the difference for a 50% reduction in pain did not reach statistical significance (18.2% vs. 14.4%), and also a higher rate for all-cause adverse events (81.2% vs. 66.2%). The standardised mean difference for the pooled change in pain intensity was −0.14 (95% CI = −0.20 to −0.08), equivalent to a 3mm greater reduction on a 100mm visual analogue scale compared with placebo. No significant impact on physical or emotional functioning was seen, and there was low-quality evidence of improved sleep and patients' global impression of change scores.

Comment: This is a review of 104 studies (47 RCTs and 57 observational studies; n=9958) on cannabis (smoked, oral, spray of THC and/or CBD) for mixed chronic pain conditions (neuropathic pain, rheumatoid arthritis, fibromyalgia, visceral pain), suggesting moderate evidence for a reduction in pain, with an NNT for a 30% reduction in pain of 24 and an NNH of 6. The GRADE rating for evidence of benefit or adverse effects was very low or moderate. Lumping all chronic pain syndromes together does not help with interpretation of the results, given the heterogeneity of the pain mechanisms. Most studies were of short duration, with a median duration of 8 weeks; hence the long-term efficacy and safety are unclear. Further research to provide high-quality evidence is needed to guide decisions about cannabis for chronic pain.

Reference: Pain 2018;159:1932–54

Abstract

Changes in pain intensity after discontinuation of long-term opioid therapy for chronic noncancer pain

Authors: McPherson S et al.

Summary: This retrospective study identified data for 551 US veterans who had discontinued long-term opioid therapy; data were acquired for the 12-month periods before and after discontinuation. The estimated mean NRS pain score at discontinuation was 4.9. Declines in pain intensity during the 12 months after discontinuation were small and did not reach statistical significance (p=0.14). There were four pain trajectory classes characterised by pain levels after discontinuation, namely no pain, and mild, moderate and severe clinically significant pain, for which the respective average pain scores at discontinuation were 0.37, 3.90, 6.33 and 8.23. Each of these classes was characterised by pain trajectories in which pain reduced slightly over time, with the greatest postdiscontinuation pain reductions seen in patients in the mild and moderate pain trajectory categories.

Comment: This is a retrospective cohort study of Veteran’s Affairs patients (n=551) with and without substance use disorder (51% and 49%, respectively) showing that discontinuation of long-term opioid therapy (in 2012) did not worsen pain intensity for patients, particularly for those with mild-to-moderate pain at the time of discontinuation, over 12 months on average. However, pain intensity differed between patients, ranging from subclinical pain to severe pain, suggesting differences in individual responses. Pain interference and quality of life were not assessed in the study. This is consistent with a previous study by Krebs showing long-term opioid therapy was not associated with improved function or pain intensity, and was associated with increased adverse effects. This is useful evidence to discuss with patients regarding outcomes of opioid tapering.

Reference: Pain 2018;159:2097–104

Abstract

What do clinicians consider when assessing chronic low back pain? A content analysis of multidisciplinary pain centre team assessments of functioning, disability, and health

Authors: Bagraith K et al.

Summary: These researchers set out to map the content of multidisciplinary pain centre clinical assessments to the ICF (International Classification of Functioning, Disability and Health) instrument to: i) identify and compare the content of clinical multidisciplinary team assessments using a cross-disciplinary framework; and ii) examine the validity of the ICF’s LBP-CS (Low Back Pain Core Set) content. They recorded and transcribed multidisciplinary team (pain medicine, psychiatry, nursing, physiotherapy, occupational therapy and psychology) assessments, from which concepts were extracted and linked to the ICF. Seven multidisciplinary team assessments consisted of 42 discipline-specific assessments with 241,209 transcribed words, from which 8596 concepts were extracted. With the exception of physiotherapy, around half of each discipline’s assessments (49–58%) were focussed on contextual factors (i.e., the person and environment). The extracted concepts covered 115 second-level ICF categories, including 73 of 78 LBP-CS categories.

Comment: The ICF has been used to guide the Initiative on Methods Measurement and Pain Assessment in Clinical Trials (MMPACT). This is a qualitative examination of routine multidisciplinary team assessments (n=7) at a tertiary multidisciplinary pain centre, showing that all components of the assessment are linkable to the content of the ICF LBP-CS (body functions, activity/participation, environment). This suggests the validity of the content of the LBP-CS to comprehensively describe patients with chronic lower back pain. Clinically, this may be useful to guide and document assessments using a cross-disciplinary language. Further research is warranted.

Reference: Pain 2018;159:2128–36

Abstract
Before prescribing, please review the Product Information available at www.seqirus.com.au/PI

MINIMUM PRODUCT INFORMATION: PALEXIA® SR (tapentadol hydrochloride) INDICATION: Moderate to severe chronic pain unresponsive to non-narcotic analgesics.

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 hypercapnia, confirmed or suspected paralytic ileus; acute intoxication with alcohol; hypnagogic, centrally acting analgesics or psychotomimetic drugs; patients who are receiving MAO inhibitors or who have taken them within the last 14 days. PRECAUTIONS: Monitor for signs of abuse and addiction; repeated administration may lead to tolerance; withdrawal symptoms could occur after abrupt discontinuation; not recommended in patients with increased intracranial pressure, impaired consciousness, or coma and severe renal or severe hepatic impairment; caution in patients with impaired respiratory functions, 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 tranquilisers, 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 (≥1/10): dizziness, somnolence, headache, nausea, constipation; Common (≥1/100 to <1/10): Decreased appetite, anxiety, depressed mood, sleep disorder, nervousness, restlessness, disturbance in attention, tremor, muscle contractions involuntary, flushing, dyspnoea, vomiting, diarrhoea, dyspepsia, pruritus, hyperhidrosis, rash, asthenia, fatigue, feeling of body temperature change, mucosal dryness, oedema. Postmarketing: suicidal ideation, angioedema, anaphylaxis and anaphylactic shock.


PBS Information: Restricted benefit. Chronic severe disabling pain not responding to non-narcotic analgesics. Authority required for increased maximum quantities and/or repeats. Refer to PBS schedule for full restricted benefit and authority information.
Catastrophizing, solicitous responses from significant others, and function in individuals with neuropathic pain, osteoarthritis, or spinal pain in the general population

Authors: Glette M et al.

Summary: This research sought to evaluate associations between catastrophizing and perceived solicitous responses and psychological function, physical function and insomnia severity in individuals from the general population with neuropathic pain (n=34), osteoarthritis (n=78) or spinal pain (n=222). A secondary aim was to investigate the moderating impact of diagnosis on any associations that were detected. Significant associations were found between catastrophizing and both reduced psychological and physical function (explaining 24% and 2% of the variance, respectively). Both catastrophizing and perceived solicitous responding were significantly, uniquely associated with insomnia severity (explaining 8% of the variance), while a significant negative association was seen between perceived solicitous responding and insomnia severity. Moderator analyses revealed that the association between catastrophizing and psychological function was greater for spinal and neuropathic pain than for osteoarthritis pain, and that the association between catastrophizing and insomnia was greater for spinal and osteoarthritis pain than for neuropathic pain. There were no significant interactions detected.

Comment: This is a population-based, cross-sectional descriptive study (n=334) showing that catastrophizing (Pain Catastrophizing Scale) was strongly associated with all function measures, using regression analysis. A previous review by Quartaana has suggested a robust relationship between catastrophisation and poor pain-related outcomes. Surprisingly, perceived solicitous responding (West Haven-Yale Multidimensional Pain Inventory) from a significant other was associated with reduced insomnia severity. Perhaps individuals feel more relaxed/supported with spouses providing higher levels of solicitous responses. This study provides further evidence that psychological factors such as catastrophisation have predictive value in the function in chronic pain patients.

Reference: J Pain 2018;19:983–95
Abstract

Acceptance and commitment therapy for prevention of chronic postsurgical pain and opioid use in at-risk veterans

Authors: Dindo L et al.

Summary: US veterans undergoing orthopaedic surgery deemed to be at risk for chronic pain were randomised to treatment as usual with (n=44) or without (n=44) participation in a 1-day ACT workshop in this pilot study. Compared with treatment as usual alone, the inclusion of ACT was associated with more rapid achievement of pain and opioid cessation; these outcomes were moderated by postoperative complications, with complication-free participants obtaining greater benefit from ACT. Outcomes were also better with increased acceptance of pain and values-based behaviour (processes that are targeted in ACT).

Comment: This is an RCT (n=88) of 1 day of ACT preoperatively for veterans at risk of chronic postsurgical pain/predicted opioid use, showing faster cessation of pain and opioid use. At-risk patients were defined as having severe preoperative pain or moderate preoperative pain with anxiety/depression. ACT looks at reactions to noxious sensation and at shifting unhelpful thoughts (e.g. ‘I can’t bear this’), feelings (e.g. hopelessness) and behaviours (e.g. avoidance) to acceptance and mindfulness, and engagement in meaningful activity. It would be exciting to have preventative psychotherapy for chronic postsurgical pain prevention. Validation with a larger scale RCT is warranted.

Reference: J Pain 2018;19:1211–21
Abstract

Randomized controlled trial of nurse-delivered cognitive-behavioral therapy versus supportive psychotherapy telehealth interventions for chronic back pain

Authors: Rutledge T et al.

Summary: Patients with daily chronic back pain for >6 months were randomised to 12 sessions of nurse-delivered CST over 8 weeks (n=30) or supportive care matched for frequency, format and time (n=31). Significant improvements were seen in the CST arm for change from baseline in mean RMDQ (Roland Morris Disability Questionnaire) score (primary outcome; from 11.4 to 9.4 [p<0.05], mean NRS score (from 4.9 to 4.0 [p<0.05]) and patient CGI (Global Impressions Scale) with 39.1% of participants reporting they were ‘much improved’ or ‘very much improved’. The supportive care group also experienced improvements in mean RMDQ score from baseline (from 11.1 to 9.1 [p<0.05]) and mean NRS score (from 5.0 to 3.8 [p<0.05]), with 26.7% of participants reporting being ‘much improved’ or ‘very much improved’ on the CGI. There were no significant between-group differences.

Comment: This is an RCT (n=30) showing efficacy of a nurse-delivered telehealth behaviour intervention (8 hours total) focusing on self-management for patients with chronic lower back pain. The nurses were trained by pain psychologists. The delivery of the CST sessions followed a personalised protocol, including components such as pain education, pacing/relaxation, sleep, pain cognition, pain behaviour, self-management and maintenance. Using primary-care nurses to disseminate behaviour treatment for chronic pain patients may further improve access. Further study is warranted.

Reference: J Pain 2018;19:1033–9
Abstract

A randomised trial of serratus anterior plane block for analgesia after thoracoscopic surgery

Authors: Park MH et al.

Summary: Patients undergoing thoracoscopic surgery were randomly assigned to 30mL of 0.375% ropivacaine (evaluable n=42) or no block (evaluable n=42) in this trial. Compared with the control group, serratus anterior plane block was associated with a lower intraoperative remifentanil dosage (0.12 vs. 0.16 mg/h [p=0.016]), less postoperative fentanyl consumption over 24 hours (3.8 vs. 5.7 µg/kg [p=0.000004]), a lower worst postoperative median pain score over 24 hours (p=0.027) and decreased dissatisfaction with pain management (p=0.0038), with no significant impact on nausea, vomiting, dizziness or length of hospital stay.

Comment: This is an RCT (n=89) showing preoperative serratus anterior plane block reduced pain and fentanyl use at 24 hours after thoracoscopic pulmonary resection compared with sham. Block at the serratus anterior plane could provide analgesia of the hemithorax by blocking the lateral cutaneous branch of the intercostal nerve. In this study, 15mL of 0.375% ropivacaine was injected underneath the serratus anterior muscle at the fifth and seventh ribs in the mid axillary line, with ultrasound guidance. This may provide an alternative to thoracic epidural or paravertebral block.

Reference: Anaesthesia 2018;73:1260–4
Abstract

Pain Management Research Review