PAIN IN BIPOLAR DISORDER

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It's widely accepted that pain can have a negative impact on mental health, especially chronic pain, which is commonly associated with depression. Likewise psychopathology can result in somatisations and pain symptoms. The 'chicken-or-egg' debate for this association can be explained by the diathesis-stress model, which describes the trajectory of an illness results from an interaction between biological vulnerability and environmental stresses. The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue injury, or described in terms of such damage". Inherent in this definition is the fact that pain is just as much an emotional experience as a sensory one. It's easy for practitioners trained in a purely biomedical model to overlook the importance of the emotional component of pain but as our understanding of the pathophysiology of pain evolves, the importance of psychosocial factors are becoming more evident.

There are a number of ways to classify pain. Most commonly by its chronicity; acute pain lasting less than three months, or chronic pain lasting longer than three months or longer than the expected normal time for healing to occur; or by its mechanism either nociceptive or neuropathic. This classification assists in management as each subgroup of pain has its own specific biopsychosocial considerations. On a biological level the move from acute to chronic pain involves the changes in spinal synaptic pathways leading to central sensitisation. Central sensitisation is a state of increased gain within the pain neural network and is clinically evidenced by hyperalgesia, increased response to painful stimuli, allodynia, normally non-noxious stimuli perceived as painful, spontaneous pain, pain with no stimulus and secondary hyperalgesia, painful area spreads beyond the boundaries of the injured area.

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It's estimated that approximately 30% of patients with bipolar disorder also experience chronic pain. Unfortunately, patients with severe mental illness, such as bipolar, historically have not received adequate physical healthcare, and even though they're more likely to experience a multitude of painful conditions they're less likely to get adequate pain management. Pain can significantly reduce quality of life and ability for patients to engage fully in social, leisure and occupational activities. Many of these activities may have been coping mechanisms used to maintain mental wellness. Pain symptoms are likely to

worsen psychiatric symptoms, compounding the disability even further. In addition, there's also an extremely high association between migraine and bipolar disorder, and recently it has been uncovered that fibromyalgia and bipolar may have similar underlying pathophysiology and also have high rates of comorbidity.

It's therefore important for all healthcare providers to be mindful of pain symptoms in bipolar disorder. Routine screening for pain symptoms should be part of any bipolar assessment. As pain is a subjective experience it's difficult to assess. There are however, multiple self-report tools that are widely accepted and validated for their use in pain assessments. See table below. According to Turk and Dansi the aim of the pain assessment is to be able to answer the following three questions:

- What is the extent of the disease or injury?
- What is the magnitude of the illness?
- Is the behaviour appropriate to the disease or illness?

PAIN ASSESSMENT MEASURE	SELF REPORT TOOL
Pain Intensity	Visual analogue scale Verbal rating scale Numerical rating scale
Pain Quality	SF – MPQ2 NPS (Neuropathic Pain Scale)
Location	Pain Drawing
Daily Function	ODI (Oswestry Disability Index) PDI (Pain Disability Index)
Pain Beliefs	SOPA (Survey of Pain Beliefs)
Pain Coping	PCS (Pain Catastrophising Scale)
Fear of Pain	TSK (Tampa Scale for Kinesiophobia) FABQ (Fear Avoidance Beliefs Questionnaire)

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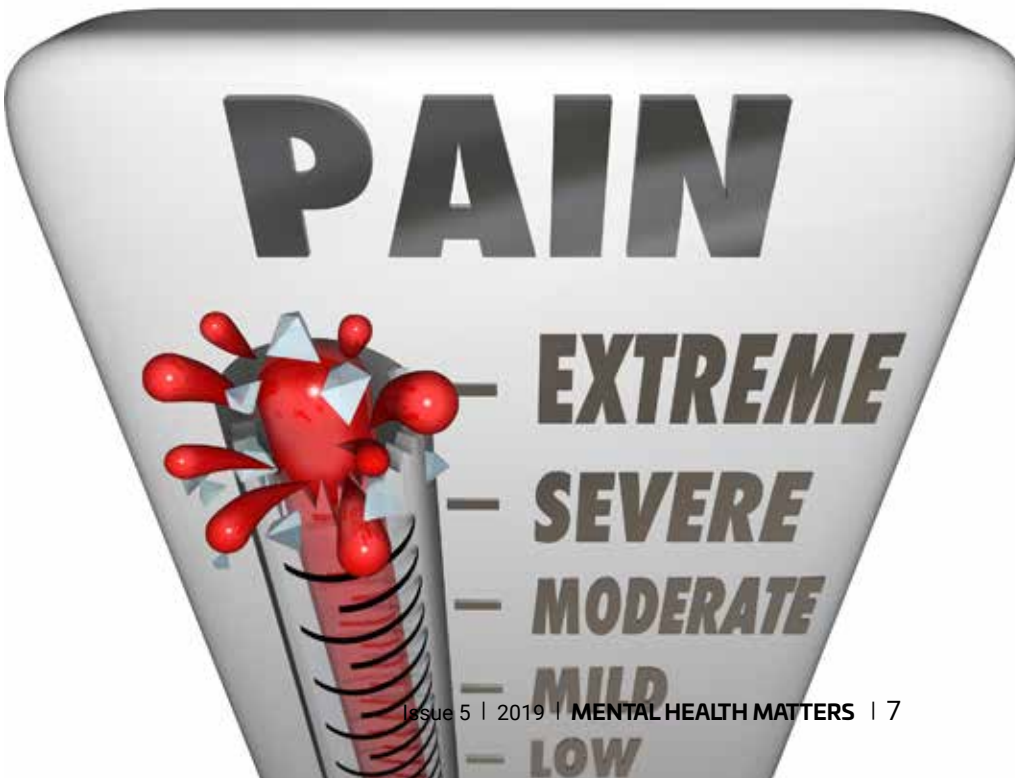
It's clear from this that the traditional biological pain assessment, which includes location, severity, radiation, onset, duration, relieving and aggravating factors and associated symptoms, is not adequate. The assessment also needs to probe the psychosocial aspects of the pain to gauge the impact on daily activities, coping mechanisms, patient's beliefs on treatment and causes of pain and the role the pain plays in the patient's life.

Healthcare providers need to be competent and cautious in prescribing safe and effective analgesia for these vulnerable patients to manage the complexity of pain in the context of mental health. Many of the medications commonly prescribed for bipolar also have the added benefit of being effective in chronic pain and drug interactions which needs to be considered when prescribing. Special consideration of the pharmacokinetics of lithium is important. Lithium has a narrow therapeutic range placing the patient at increased risk of both under and over dosing. Lithium is excreted renally, depending heavily on the glomerular filtration rate to drive this. An alteration in this will influence the steady state plasma concentration unless a simultaneous dose adjustment is made. Non-steroidal anti-inflammatories, both selective COX2, example celecoxib, and non-selective COX2, example ibuprofen, inhibitors, reduce the GFR by reducing the prostaglandin synthesis in the glomerulus. In a person with a large renal reserve, this might not have much of an effect on lithium levels - however in a patient with less renal reserve from chronic kidney disease, who is slightly hypotensive and taking antihypertensive agents this might precipitate lithium toxicity.



The table below lists common classes of agents used to treat painful conditions and considerations in bipolar disorder.

DRUG CLASS	INDICATIONS IN PAIN	CONSIDERATION IN BMD
Paracetamol	1st line agent in both acute and chronic pain	Well tolerated
NSAIDS Eg. Ibuprofen, celecoxib	Mild to moderate acute pain. Special consideration of its use in patients with peptic ulcer disease, renal dysfunction and those at high risk for cardio vascular disease	Nsaids may increase the plasma concentration of Lithium resulting in toxic levels. Extra caution should be taken in patients taking anti-hypertensives due to the potential for nephrotoxicity
Opioids Eg Codeine, Oxycodone, Morphine	Moderate to severe acute and chronic pain. Usually a second or third line agent in chronic or neuropathic pain	Consideration of abuse potential and addiction in at risk individuals Synergystic drug effects may increase drowziness
Atypical Opioids Tapentadol, Buprenorphine, Tramadol	Moderate to severe acute and chronic pain	Increased chance of somnolence Small risk of inducing hypomania/mania Risk of serotonin syndrome if coadministered with other serotonergic agents (eg. SSRI's)
Gabapentinoids – (α2δ subunit ligands) Eg. Pregabalin, Gabapentin	Chronic Pain Neuropathic pain conditions	Synergystic drug effects may increase drowziness
NMDA receptor antagonists Eg. Ketamine	Mainly used in an inpatient setting, and under specialist care	May have a beneficial effects in BMD
Anticonvulsants	Specific pain conditions – Carbamazepine for Trigeminal neuralgia	
Topical Agents Eg lignocaine, capsaicin	Certain neuropathic pain conditions eg. Herpes Zoster	Well tolerated
Tricyclic Antidepressants Eg. Amitriptyline	Chronic Pain, Neuropathic pain	Consideration to synergistic effects with other serotonergic agents
SNRI Eg Duloxetine	Chronic pain, neuropathic pain	Consideration to synergistic effects with other serotonergic agents Can induce mania in bipolar disorder, use only with mood stabilizing cover

Luckily pharmacological agents are not the only weapon available to manage pain. Single interventions have been shown to have at best only modest improvements in pain and so pain is best managed in a multi-disciplinary environment. Basic psychoeducation about pain and management is an important starting point. Cognitive behavioural therapy has the most evidence to support its use in pain and combined with mindfulness activities can help manage the psychological aspects of pain.

Physical therapies such as physiotherapy, occupational therapy and biokinetics should be considered for myofascial pain and biomechanical problems, whilst social work and occupational therapy might assist with occupational and social issues related to the pain.

Complementary and alternative medicines (CAM) such as acupuncture, Yoga, Ayurveda and Chinese medicine shouldn't be discounted. Whilst their efficacy in pain is difficult to study they may have beneficial effects. A Cochrane review on 145 Complimentary and Applied Medicines found that insufficient evidence to support their use in 56% but a positive effect in 38%. Lastly, interventional techniques, such as epidural injections and rhizotomies, may be considered once more conservative measures have failed.

The connection between bipolar disorder and pain is complex and multifactorial. It's not only psychiatrists and mental health professionals that need to be aware of the potential complications. GP's, neurologists, anesthetists, dentists, physiotherapists, orthopeadic surgeons or anyone dealing with pain in bipolar patients need to be competent in prescribing appropriate and adequate pain medication. Furthermore, non-medication options of pain management shouldn't be overlooked. MHM

References available upon request