

Pain in Cognitive Impairment, not Dementia-Related: Management

International Association for the Study of Pain



Individuals with intellectual disability often display pain in unusual ways. Subtle changes in behavior and appearance may be indicators of pain, as expressions of pain may be variable and idiosyncratic [8]. Depending on the cause of intellectual disability and various areas of the brain involved, the motivational-affective, cognitive-evaluative, and autonomic responses to pain can be affected [4]. This creates a misconception that people with intellectual disability are a homogenous group who are less sensitive to pain and have a higher pain threshold [1].

Pain recognition in cognitive impaired

People with intellectual disability may express pain differently, making its recognition highly subjective due to nonverbal indicators, which are not easily recognized given the subtlety or individuality of pain behaviors. As pain is a highly individualized and subjective phenomenon, potential indicators of pain include changes in physical and/or behavioral signs together with an understanding of the individual's typical abilities [13]. However, varied responses due to verbal and cognitive skills have limited the applicability of pain assessment tools in practice [31]. Therefore, there is a need for a variety of methods and measures of pain that are matched with the ability of the person being assessed. Within this process, baseline recordings should be part of each individual's annual health assessment where pain responses can be documented and reviewed for the benefit of unfamiliar healthcare professionals [14]. What needs to be considered is that pain needs to be assessed using a recognized and appropriate pain scale using a variety of modalities including: self-report, behavioral observation, and physiological measures depending on the individual and their communication abilities. In addition, atypical reactions to pain, such as laughing or making the same sounds whether excited, happy or in pain need to be considered [22]. Examples of available pain assessment instruments validated for children with intellectual disability include: the relatively simple and easy to use Individualized Numeric Rating Scale - INRS [27], Revised Face, Legs, Activity, Cry, Consolability - r-FLACC [32] and the more complex Paediatric Pain Profile - PPP [15].

For adults with intellectual disability, validated pain assessment instruments include: Non-Communicating Adult Pain Checklist – NCAPC [19], Pain and Discomfort Scale – PADS [2], Checklist of Nonverbal Pain Indicators – CNPI [7] and the Disability Distress Assessment Tool - Dis-Dat [26]. Inter-rater reliability of most pain assessment instruments is adequate, and construct validity estimated by correlating the outcomes of a new scale with those of an existing scale is sufficient [15,20,28]. While numerous pain assessment tools exist, however, what is essential is that an assessment is conducted in light of the ability to assess the person with intellectual disability on all aspects of the tool and that



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baseline observations have been recorded. This process ideally involves input from those who know the individual at baseline and when in pain. Determining individualized physical, physiological, behavioral and atypical reactions/observations are essential if pain is to be recognized and treatment delivered [25].

Pain management in cognitive impaired

In order to manage pain, an effective pain assessment and evaluation of pain sources is necessary. Conditions that cause nociceptive (acute) pain, for example fractures and dental problems, should be evaluated [10]. Gastroesophageal reflux disease is a major cause of pain in intellectual disability [9] and may be associated with vomiting, pneumonia, and dental problems. All of which are potentially painful [5]. Validated tools are available to quantify symptom frequency and severity of gastroesophageal reflux [3] and early detection and early treatment of gastroesophageal reflux is key to preventing pain and other symptoms. Besides nociceptive pain, neuropathic pain should be considered as a cause as well.

Neuropathic pain is a clinical description of chronic or recurrent pain caused by a lesion of the somatosensory nervous system. Symptoms could include pain resulting from non-painful stimulation with pain being described as a burning and electrical-like sensation. Neuropathic pain can also be more difficult to treat, and might respond better to other analgesics such as gabapentinoids and tricyclic antidepressants [11,12]. Some people with intellectual disability exhibit self-injurious behavior such as head banging or self-biting, and pain could be a causative factor (i.e. a way of expressing pain). The incidence of self-injurious behavior in children with autism can be as high as 50%, but only in a small percentage was a nociceptive pain source identified as a cause [23]. However, it has suggested that neuropathic pain is a trigger for self-injurious behaviors [24,29].

After pain assessment and recognition, the next step is prescribing adequate analgesic agents with appropriate dosing instructions. Pain management according to the World Health Organization [33] analgesic pain ladder can be followed. Pain is often difficult to treat and frequently requires ongoing assessment, review and titration and/or trial of drugs before a satisfactory outcome can be achieved [30]. Generally, people with intellectual disability receive less pain relief and two retrospective studies [17,18] identified that children with intellectual disability received lower doses of intraoperative opioids compared with controls. Malviya et al., [21] also reports 89% of physicians tend to prescribe sub-therapeutic doses of analgesics to children with intellectual disability.

Epilepsy is a very common comorbidity in intellectual disability and many people with intellectual disability will therefore need lifelong treatment with antiepileptic drugs (i.e. phenytoin, phenobarbital, carbamazepine) which may cause drug–drug interactions, since they are potent inducers of multiple cytochrome P450 enzymes. A pain management regime needs to be comprehensive, integrative, and involve all relevant persons. Attention should be given to multimodal interventions, which includes pharmacological and non-pharmacological treatments. Such interventions may include pharmacological, physical, social, psychological and spiritual approaches to address pain management at molecular, functional, behavioral, cognitive and affective levels [6]. Thereby, pain management interventions will vary according to pain etiology, patient characteristics and preferences, and in keeping with best practice guidelines. A structured approach incorporating an effective assessment of pain, identification of the source and type of pain, and accurate documentation is essential.



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Given the complexity of pain in the intellectual disability population, effective pain management requires a multidimensional approach and continuous reassessment to ensure a focus on quality of life indicators and not just reduction of pain. In addition, relevant individuals such as family/caregivers and the individual with intellectual disability themselves should be included in the assessment, management, and evaluation [6]. Consideration needs to be given to the lack of education and knowledge of intellectual disability, which are considered primary barriers to effective pain management.

Keypoints

- 1) The management of pain in people with intellectually disability involves many considerations in view of pain assessment difficulties, the high incidence of comorbidities, and the use of co-medication.
- 2) Adequate pain assessment is the cornerstone of pain management, and pain in people with intellectually disability benefits from use of validated pain assessment tools appropriate to the individual's level of ability.
- 3) Prescribers must be aware of the potential alterations in pharmacokinetics and pharmacodynamics of analgesics in in people with intellectually disability, such as drug–drug interactions with antiepileptic drugs.

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