

Paediatric chronic pain

Paul M Rolfe

Abstract

Chronic pain in childhood is common and if untreated may lead to significant pain-related disability, emotional disturbance and poor school attendance. These children and adolescents are often successfully managed outside of specialist paediatric pain management clinics in a wide range of clinical settings. However, some children require the expertise of a multidisciplinary pain management team in a dedicated paediatric centre. Following multidisciplinary assessment an individualized pain management plan is agreed with the family. Treatment options can be classified into pharmacological, physical and psychological therapies. The aim of treatment is to facilitate a restoration of function for the child, working with the family as a whole.

Keywords Chronic pain; paediatric; pain assessment

Royal College of Anaesthetists CPD Matrix: 2E03, 2D05, 3E00

Introduction

Although there are many similarities in terms of the assessment and management of children with persistent pain when compared to adult practice, children and adolescents are a distinct group that present different challenges to professionals involved in their care. Persistent pain in the paediatric population is extremely common, particularly in girls. It is important to state that the vast majority of these patients are managed outside of specialist paediatric pain clinics, both in primary and secondary care, making it essential for a wide range of professionals, including pain physicians with a predominant adult practice, to have an appreciation and understanding of pain management principles in this group.

There is a wide variation in the availability and provision of specialist paediatric pain services nationally within the UK. This is common amongst many other developed healthcare systems. Centralization of specialized paediatric services often means there is a significant geographical distance for the family to travel to a suitable place of treatment. This may be a significant barrier to progress if there is no access to suitable local services. As a consequence, untreated persistent pain may lead to significant pain-related disability, emotional disturbance and poor school attendance. Referral to a specialist clinic should be prompted if a child fails to respond to local therapy provision.

Persistent pain in childhood

Children and adolescents are a unique and diverse group. Not only are they dependent on their families and carers, financially

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Learning objectives

After reading the article, you should be able to:

- explain the multidisciplinary assessment of chronic pain in children
- outline the non-pharmacological therapies used to treat chronic pain in children
- discuss the commonly used drugs to treat chronic pain in children

and practically but also emotionally. Although adolescence is the peak time for presentation, children of any age may develop chronic pain and exhibit a wide spectrum in terms of their development, understanding and emotional maturity. They are also required to be in appropriate education until they are 18 years old.

Engagement, education and treatment of the family as a unit is fundamental to successful therapy. The chronic pain may be related to a chronic medical condition (e.g. juvenile idiopathic arthritis) or follow a particular illness, surgery or trauma such as in complex regional pain syndrome (CRPS). It is common not to be able to identify a definite medical explanation for many of chronic pain presentations in childhood. Headaches, functional abdominal pain and musculoskeletal pain are the most common chronic pains experienced by children and adolescents. It is important to stress that the lack of a medical diagnosis should in no way minimize a professional's appreciation of the severity of the pain or the effect it has on their lives. Terms such as 'psychological pain' are particularly unhelpful and without evidence. Psychological factors undoubtedly play a part in all pain experiences, as explained by the biopsychosocial model of pain. The overall primary goal of pain management is to facilitate a restoration of function, rather than necessarily reduce pain in its own right.

Pain assessment

The gold standard for pain assessment is an initial multidisciplinary consultation with the child and their family, ideally at a single meeting. Local resources, expertise and particular service model will influence which professionals are involved but a typical team will include a pain physician, physiotherapist, clinical psychologist, specialist pain nurse and occupational therapist. Collaboration with a paediatrician in multidisciplinary discussions is imperative, not only for specific medical expertise, but also for support with potential safeguarding concerns that may arise.

The initial consultation, which usually requires over an hour, is an opportunity for members of the team to meet the family, take a detailed history and examine the child. The key components of the consultation are outlined in [Box 1](#). Frequently the team will have a round table discussion after this initial discussion before presenting the family with an individualized pain management plan, tailored to their specific needs and identify potential treatment options.

An initial age appropriate explanation of chronic pain is a key part of this first meeting, which will be built on subsequently by

Components of initial multidisciplinary consultation

Parent and child questionnaires prior to meeting, e.g. PedsQL, PI-ED
Introductions of the team and family

Explanation of MDT meeting, assessment process and pain management plan

Detailed pain history from child and family (using age appropriate language):

- site, character, intensity, radiation, associated symptoms
- aggravating and relieving factors

Identification of pain associated disability

- poor sleep, reduced activity and social interactions, anxiety, low mood

Assessment of coping skills e.g. identify repeated attendances to the hospital emergency department

Other relevant medical history and a developmental history as appropriate

Investigations and specialist consultations to date

Establish which therapeutic modalities, including medications have been tried previously

Current medications and allergies

Family structure/domestic situation

Current school and educational performance/attendance

Identify other agencies which have been involved e.g. social worker, CAMHS, school nurse

(it is useful to seek permission to share information between professionals at this point)

Examination of the child by doctor and physiotherapist

It is sometimes useful for parents to have an opportunity to speak to a member of the team away from the child, which can often be done before the team discussion

MDT meet without family

- Confirm all necessary investigations/opinions are complete
- Agree initial pain management plan

MDT meet with family

- Initial pain explanation
- Each member of the team will discuss their contribution to pain management plan
- Family input into plan
- Answer any outstanding questions or concerns

Box 1

team members. If there is diagnostic uncertainty, then this must be addressed at this point. Repeated investigations, often by multiple medical specialities are frequently encountered by children on their journey before they are referred to a specialist clinic. Investigations later on may cause confusion or at worse undermine the success of a pain management approach. There should be an acceptance from the family that no further tests or referrals to other specialities for a 'missed diagnosis' are necessary. This is fundamental in setting the scene of facilitating functional restoration through multidisciplinary pain management, which is a joint responsibility between professionals, the family and the child.

Several health-related quality of life (HRQOL) questionnaires, physical function measures and other questionnaires are frequently used to establish a baseline and repeated at various intervals to determine progress. Specific examples are given in [Table 1](#).

Treatment of chronic pain in children

Broadly speaking, the treatment options for chronic pain can be classified into pharmacological, physical and psychological treatments, as summarized in [Table 2](#). It should be emphasized, however, that although different professionals that make up the team bring their specific skills that are traditional to their discipline, the boundaries are less well defined in practice. For instance, the whole team will employ components of cognitive behavioural therapy (CBT) in their interactions with the child and their family yet a much smaller proportion will have formal psychological treatment with a clinical psychologist. These techniques are fundamental to such topics as pain education, goal setting, sleep hygiene, distraction and identifying solutions to practical problems like management of flare ups.

An understanding of why pain is often persistently experienced in the absence of an identifiable injury or abnormality is essential and some degree of pain education is a necessary component of all pain management plans. This is often delivered as individualized sessions, using age appropriate metaphors and activities such as drawing or play. This message is reinforced at subsequent visits by the team.

Pharmacological strategies

Much of the evidence for medication use in children with chronic pain is extrapolated from our experience with adults and many medications are used outside of their license. Commonly used drugs and appropriate doses are summarized in [Table 3](#). The prescriber should ensure that there is a robust assessment of the efficacy of any analgesic medication given with a plan to wean and discontinue if there is no clear benefit. Adverse effects from medication such as sleepiness and impaired cognitive ability may have a further significant impact on performance and attendance at school, which in turn may compound existing pain related disability and social isolation from peers.

This is particularly pertinent to the use of opioid medications in children for non-malignant chronic pain. In common with adult practice, children frequently present to the pain service on significant doses of opioids that have been escalated to high doses, with correspondingly severe adverse effects. This situation implies that the pain is not opioid sensitive and the medication should be weaned carefully and discontinued. The weak opioid tramadol, which is available as an orodispersible tablet, may be useful in some clinical settings given its other effects on serotonergic and noradrenergic pathways. It also has a 'ceiling' dose of 1–2 mg/kg four times daily, thereby limiting the upper dose, which is more difficult with other opioids such as morphine. A twelve hour modified release preparation also exists – this may provide smoother analgesia or help prevent waking with pain during the night.

Anti-neuropathic drugs such as the tricyclic antidepressants (TCAs) and gabapentinoids may be useful for neuropathic pain. Some of the causes of neuropathic pain in children are listed in [Table 4](#). There is also some evidence for the use of TCAs in non-

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