

Exploring the effects of medical cannabis for chronic pain

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Dr Simon Erridge of Sapphire Medical Clinics discusses the therapeutic effects of medical cannabis for chronic pain, affecting 15.5 million people in England and why more evidence is needed to support greater patient access

In November 2018, medical cannabis was rescheduled in the UK, allowing for the prescribing of unlicensed products manufactured from the cannabis plant for the first time since 1973. Chronic pain is now the most common condition for which medical cannabis is prescribed, according to the UK Medical Cannabis Registry. ⁽¹⁾ Considering this increase in prescribing for eligible UK patients, it is important to understand the underlying science of how it affects the human body.

Medical cannabis is the term given to a broad spectrum of medications that can be derived from the cannabis plant. The cannabis plant is thought to contain more than 540 active pharmaceutical ingredients; however, the most abundant compounds are cannabidiol (CBD) and (-)-trans- Δ^9 -tetrahydrocannabinol (THC). ⁽²⁾ The main mechanisms of action of these are via the body's own cannabinoid system, which consists of molecules very similar to those found in the cannabis plant and receptors they bind to, causing downstream effects. One of the most important effects of this system is to regulate the firing of signals through nerves. ^(3,4) Some have therefore likened the endocannabinoid system to a dimmer switch for the nervous system.

What do studies say about prescribing medical cannabis for chronic pain?

In animal and cell-based studies, THC and CBD have been demonstrated to play a role through these mechanisms at all levels of the pain pathway. They can each act upon nerves which come from the peripheries of the spinal cord as well as those that travel through the spinal cord, reducing the intensity of pain signals that arrive in the brain. ^(4,5,6)

In addition, activation of cannabinoid receptors within the primary area of the brain that detects sensory information from the body, and the areas of the brain involved in emotional processing, modify the way the brain not only interprets pain signals that arrive from the spinal cord, but also the emotional impact of pain itself. ⁽⁵⁾ Despite increasingly well-defined lab-based research, there is a gap in our knowledge, notably in high-quality human studies. Despite this, authors have attempted to characterise the role that medical cannabis may play in chronic pain to support its increasing use for this condition globally.

The most comprehensive review of this evidence comes from a meta-analysis by researchers at McMaster University in 2021 which provided a recommendation to trial non-inhaled medical cannabis products if standard therapies had not provided sufficient benefit. ^(7,8) In addition to this evidence, researchers have begun to utilise the UK Medical Cannabis Registry to understand the outcomes of chronic pain patients prescribed medical cannabis in this country. In the most recent analysis, involving the study of 1,254 patients, changes were detected in pain severity and interference at up to six months of follow-up.⁽⁹⁾

In recent years, much has been made of the desire to transition away from prescribing opioid pain medications for chronic pain due to the lack of evidence of their effectiveness, but also the potential harm associated with their use. ⁽¹⁰⁾ Between 2017 and 2018, 13% of the adult population in England had received one or more prescriptions for opioid medications. ⁽¹¹⁾

Whilst progress has been made towards reducing the number of opioid prescriptions over recent years, NHS England is making further additional measures to tackle overprescribing of opioid medications through implementing new frameworks for General Practice. ⁽¹²⁾ Whilst a large emphasis on these plans is to provide psychological and social support mechanisms, an oversight is that there is a need to have adjunctive pain medications available to those people who do not respond to these interventions, or who are not able to engage with them due to the severity of their pain. However, there is a real dearth of options available to GPs and pain specialists. This is one reason why so much hope has been placed on medical cannabis for chronic pain treatment.

Should medical cannabis for chronic pain be recommended as a treatment option?

At present, there is simply insufficient evidence to recommend medical cannabis as a first-line treatment option before licensed medications that are used in the setting of pain. This means patients and doctors are stuck in the challenging position of having relatively few medications available to them. As the incidence of chronic pain continues to increase in an ageing population, the collective aim of medical cannabis researchers over the next five to ten years should be to perform high-quality randomised controlled trials across a broad spectrum of conditions which cause chronic pain.

Medical cannabis for chronic pain or any other condition is never going to be a panacea, but identifying if it can be used more effectively than it is at present will be an important step in improving the array of options available to these patients, who are typically faced with a worse quality of life.

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