Cannabis and cannabis-based medicines

Potential benefits and risks to health

Report of a Working Party 2005

Royal College of Physicians
Setting higher medical standards

7 Summary and conclusions

7.1 Cannabis has been used for centuries as a medicinal compound for a number of ailments without objective evidence of efficacy. Significant numbers of patients with multiple sclerosis, chronic pain and epilepsy have tried cannabis. Some continue to use cannabis for the relief of symptoms and report benefit.

7.2 The main active ingredient of cannabis is tetrahydrocannabinol (THC), but a number of other natural and synthetic compounds, called cannabinoids, are known to act on the same receptors in the body.

7.3 The body has its own endocannabinoid system. It produces its own cannabinoids, and two types of cannabinoid receptor (CB_1 and CB_2) with different and distinct tissue distributions have been identified. The physiological role of endocannabinoids is currently the subject of considerable research.

7.4 THC is rapidly absorbed into the bloodstream after inhalation. Oral ingestion is more delayed and subject to greater inter-individual variation in blood levels. Application to the oromucosal surface, for example by sublingual spray, may be a more suitable route of administration. Recognised undesired effects include unpleasant psychic reactions, intoxication and temporary impairments of skilled motor and cognitive functions. The practice of allowing patients to self-titrate their dose against symptoms can help to circumvent this problem and does not result in escalating doses.

7.5 There is good evidence that cannabinoids regulate appetite through the CB_1 receptor. A preparation of THC (Marinol®) is approved in the USA as an appetite stimulant for the treatment of AIDS-related wasting. Treatment with a synthetic drug, called rimonabant, which acts to block CB_1 receptors leads to weight reduction. Interestingly, this drug may have the potential to affect appetite for particular foods (research in progress), and other cravings, such as for tobacco.

7.6 There have been randomised placebo-controlled clinical trials of oral and sublingual cannabis preparations and pure THC for the treatment of multiple sclerosis and chronic pain but none are conclusive. There is some evidence for relief of spasticity and neuropathic pain and for improvement in sleep. There are data suggesting that long-term treatment with THC may have a beneficial influence on the course of multiple sclerosis but further studies are needed; one such study of oral THC is being funded by the MRC. Further studies in pain are warranted.

7.7 There is evidence that exposure to cannabis in adolescence is associated with subsequent psychotic illness. However, the patient population that might use cannabis as a medicine is generally older than those at risk of cannabis-induced psychosis.

7.8 Although THC appears to be a relatively safe drug in adults, the same cannot be said of cannabis smoke. Clinical trials exploring the health benefits of THC using alternative methods of delivering the drug are to be encouraged.

7.9 It is important to distinguish between the recreational use of cannabis and the use of cannabis-based medicines. As our understanding of the physiological role of the endocannabinoid system improves, new opportunities for manipulating it pharmacologically are likely to emerge. In addition to targeting cannabinoid receptors, medicines that boost endocannabinoid function by slowing the inactivation of these substances are being explored.[79] Furthermore, new therapeutic indications for cannabis-based drugs are on the horizon. Blocking CB_1 receptors to reduce appetite is one example and other ongoing studies are exploring the value of targeting CB_2 receptors for pain relief and treating inflammation. Blocking both receptor subtypes may protect against osteoporosis.