Medical Marijuana Is Safe and Has Societal Value

"Cannabinoids have a remarkable safety record, particularly when compared to other therapeutically active substances."

Paul Armentano is the deputy director of NORML (National Organization for the Reform of Marijuana Laws). In the following viewpoint, he underscores the impressive safety record of medical marijuana to treat a number of debilitating and chronic medical conditions. Armentano surveys the unprecedented scope of global research on the uses, efficacy, and safety of medical marijuana, pointing out that researchers believe the drug not only treats disease, but can also modify it. Armentano expresses hope that medical marijuana has broader applications than researchers could imagine years ago.

As you read, consider the following questions:

1. According to a 2010 German report, how many controlled studies assessing the safety and efficacy of marijuana have there been since 2005?
2. How many published papers does the author say there are on the therapeutic value of cannabinoids?
3. According to a 2005 World Health Organization review, how many recorded cases of cannabis overdose have there been?

Despite the ongoing political debate regarding the legality of medical marijuana, clinical investigations of the therapeutic use of cannabinoids are now more prevalent than at any time in history.

For example, in February 2010 investigators at the University of California Center for Medicinal Cannabis Research publicly announced the findings of a series of randomized, placebo-controlled clinical trials on the medical utility of inhaled cannabis. The studies, which utilized the so-called 'gold standard' FDA clinical trial design, concluded that marijuana ought to be a "first line treatment" for patients with neuropathy and other serious illnesses.

Among the studies conducted by the Center, four assessed smoked marijuana's ability to alleviate neuropathic pain, a notoriously difficult to treat type of nerve pain associated with cancer, diabetes, HIV/AIDS, spinal cord injury and many other debilitating conditions. Each of the trials found that cannabis consistently reduced patients' pain levels to a degree that was as good or better than currently available medications.

Another study conducted by the Center's investigators assessed the use of marijuana as a treatment for patients suffering from multiple sclerosis. That study determined that "smoked cannabis was superior to placebo in reducing spasticity and pain in patients with MS, and provided some benefit beyond currently prescribed treatments."

Global Research into Medical Marijuana
Around the globe, similarly controlled trials are also taking place. A 2010 review by researchers in Germany reports that since 2005 there have been 37 controlled studies assessing the safety and efficacy of marijuana and its naturally occurring compounds in a total of 2,563 subjects. By contrast, most FDA-approved drugs go through far fewer trials involving far fewer subjects.

While much of the renewed interest in cannabinoid therapeutics is a result of the discovery of the endocannabinoid regulatory system, some of this increased attention is also due to the growing body of testimonials from medical cannabis patients and their physicians. Nevertheless, despite this influx of anecdotal reports, much of the modern investigation of medical cannabis remains limited to preclinical (animal) studies of individual cannabinoids (e.g. THC or cannabidiol) and/or synthetic cannabinoid agonists (e.g., dronabinol or WIN 55,212-2) rather than clinical trial investigations involving whole plant material. Because of the US government's strong public policy stance against any use of cannabis, the bulk of this modern cannabinoid research is predictably taking place outside the United States.

**Combating Disease**

As clinical research into the therapeutic value of cannabinoids has proliferated—there are now an estimated 20,000 published papers in the scientific literature analyzing marijuana and its constituents—so too has investigators' understanding of cannabis' remarkable capability to combat disease. Whereas researchers in the 1970s, 80s, and 90s primarily assessed cannabis' ability to temporarily alleviate various disease symptoms—such as the nausea associated with cancer chemotherapy—scientists today are exploring the potential role of cannabinoids to modify disease.

Of particular interest, scientists are investigating cannabinoids' capacity to moderate autoimmune disorders such as multiple sclerosis, rheumatoid arthritis, and inflammatory bowel disease, as well as their role in the treatment of neurological disorders such as Alzheimer's disease and amyotrophic lateral sclerosis (a.k.a. Lou Gehrig's disease). In fact, in 2009, the American Medical Association (AMA) resolved for the first time in the organization's history "that marijuana's status as a federal Schedule I controlled substance be reviewed with the goal of facilitating the conduct of clinical research and development of cannabinoid-based medicines."

Investigators are also studying the anti-cancer activities of cannabis, as a growing body of preclinical and clinical data concludes that cannabinoids can reduce the spread of specific cancer cells via apoptosis (programmed cell death) and by the inhibition of angiogenesis (the formation of new blood vessels). Arguably, these latter findings represent far broader and more significant applications for cannabinoid therapeutics than researchers could have imagined some thirty or even twenty years ago.

**The Safety Profile of Medical Cannabis**

Cannabinoids have a remarkable safety record, particularly when compared to other therapeutically active substances. Most significantly, the consumption of marijuana—regardless of quantity or potency—cannot induce a fatal overdose. According to a 1995 review prepared for the World Health Organization, "There are no recorded cases of overdose fatalities attributed to cannabis, and the estimated lethal dose for humans extrapolated from animal studies is so high that it cannot be achieved by ... users."
In 2008, investigators at McGill University Health Centre and McGill University in Montreal and the University of British Columbia in Vancouver reviewed 23 clinical investigations of medical cannabinoid drugs (typically oral THC or liquid cannabis extracts) and eight observational studies conducted between 1966 and 2007. Investigators "did not find a higher incidence rate of serious adverse events associated with medical cannabinoid use" compared to non-using controls over these four decades.

That said, cannabis should not necessarily be viewed as a 'harmless' substance. Its active constituents may produce a variety of physiological and euphoric effects. As a result, there may be some populations that are susceptible to increased risks from the use of cannabis, such as adolescents, pregnant or nursing mothers, and patients who have a family history of mental illness. Patients with hepatitis C, decreased lung function (such as chronic obstructive pulmonary disease), or who have a history of heart disease or stroke may also be at a greater risk of experiencing adverse side effects from marijuana. As with any medication, patients should consult thoroughly with their physician before deciding whether the medical use of cannabis is safe and appropriate.

Further Readings

Books


Periodicals

• Nicole Brochu "Teen Pot Smokers? Don't Blame Medical Marijuana Laws," Sun Sentinel (South FL), February 1, 2011.


• Jodie Sinnema "Painful Battle for Pot Was Worth the Fight," Montreal Gazette, December 9, 2011.


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