

Pruritus

Itching (pruritus) is a common symptom associated with numerous skin diseases, as well as a secondary symptom of numerous serious conditions such as renal failure and liver disease. Itching, unlike other skin sensations, is generally a result of CNS activities and typically goes untreated by standard medical therapies.

A review of the scientific literature reveals three clinical trials investigating the use of cannabinoids in the treatment of pruritus. Writing in the August 2002 issue of the *American Journal of Gastroenterology*, investigators from the University of Miami Department of Medicine reported successful treatment of pruritus with 5 mg of THC in three patients with cholestatic liver disease.[1] Prior to cannabinoid therapy, subjects had failed to respond to standard medications and had lost their ability to work. Following evening cannabinoid administration, all three patients reported a decrease in pruritus, as well as "marked improvement" in sleep and were eventually able to return to work. Resolution of depression was also reported in two out of three subjects. "Delta-9-tetrahydrocannabinol may be an effective alternative in patients with intractable cholestatic pruritus," investigators concluded.

The following year, British researchers reported in the June 2003 issue of the journal *Inflammation Research* that the peripheral administration of the synthetic cannabinoid agonist HU-211 significantly reduced experimentally-induced itch in 12 subjects.[2] Investigators had previously reported that topical application of HU-210 on human skin reduced experimentally-induced pain and acute burning sensations.[3]

Most recently, researchers at Wroclaw, Poland's University of Medicine, Department of Dermatology, reported that application of an endocannabinoid-based topical cream reduced uremic pruritus and xerosis (abnormal dryness of the skin) in hemodialysis patients.[4] Three weeks of twice-daily application of the cream "completely eliminated" pruritus in 38 percent of trial subjects and "significantly reduced" itching in others. Eighty-one percent of patients reported a "complete reduction" in xerosis following cannabinoid therapy.

In light of these encouraging preliminary results, some dermatology experts now believe that cannabinoids and the cannabinoid system may represent "promising new avenues for managing itch more effectively." [5]

REFERENCES

- [1] Neff et al. 2002. Preliminary observation with dronabinol in patients with intractable pruritus secondary to cholestatic liver disease. *American Journal of Gastroenterology* 97: 2117-2119.
- [2] Dvorak et al. 2003. Histamine induced responses are attenuated by a cannabinoid receptor agonist in human skin. *Inflammation Research* 25: 238-245.
- [3] Dvorak et al. 2003. Cannabinoid agonists attenuate capsaicin-induced responses in human skin. *Pain* 102: 283-288.
- [4] Szepietowski et al. 2005. Efficacy and tolerance of the cream containing structured physiological lipid endocannabinoids in the treatment of uremic pruritus: a preliminary study. *Acta Dermatovenerologic Croatica* (Croatia) 13: 97-103.
- [5] Paus et al. 2006. Frontiers in pruritus research: scratching the brain for more effective itch therapy. *Journal of Clinical Investigation* 116: 1174-1185.