

Butane Hash Oil Burns Associated With Marijuana Liberalization in Colorado

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BACKGROUND

Butane hash oil (BHO), also known as “honey oil”, “amber”, “glass”, “shatter”, “wax”, or “dab”, is a potent marijuana concentrate, containing more than 90% tetrahydrocannabinol (THC), (Figure 1). BHO is easily manufactured using highly volatile butane as a solvent (Figure 2).

RESEARCH QUESTION

What is the prevalence of hydrocarbon burns associated with BHO manufacture since marijuana liberalization in Colorado?

METHODS

We conducted a cross sectional study utilizing the National Burn Repository to examine all hydrocarbon burns admitted to the University of Colorado Hospital Burn Center from January 1st, 2008 through August 31st, 2014. Medical records for patients admitted for hydrocarbon burns associated with marijuana were reviewed.

Figure 1: Butane Hash Oil (BHO)



RESULTS

- Twenty-nine patients with BHO burns had 31 admissions to the burn unit during the study period.
- Zero cases presented in the 21 months prior to medical liberalization, 19 (61.3%) during the 51 months encompassing medical liberalization, and 12 (38.7%) in 8 months of legalization.
- Majority of cases were Caucasian (72.4%) males (89.7%).
- Median age was 26 (range 15-58).
- Nearly all were flash burns due to explosions within an enclosed space (91%).
- Median total-body-surface-area (TBSA) burn size was 10% (TBSA range 1-90%).
- Median length of hospital admission was 10 days.
- Most had upper extremity burns (97%) and/or burns to the head or neck (66%).
- Six required intubation for airway protection (21%).
- Nineteen required skin grafting, 8 required wound care only, 1 required surgical fracture repair, and 1 required surgical debridement.

DISCUSSION

Liberalization and subsequent legalization of marijuana in Colorado has resulted in increased prevalence of hydrocarbon burns due to production of BHO. In this cohort, most patients were young, white men in their 20s. Patients burned approx 10% of their body, typically stayed in the hospital over one week and required surgical intervention in more than two-thirds of cases.

CONCLUSIONS

Hydrocarbon burns associated with hash oil production have increased since liberalization of marijuana policy in Colorado. A combination of public health messaging, standardization of manufacturing processes, and worker safety regulations are needed to decrease the risks associated with BHO production.

Figure 2: Butane Hash Oil Apparatus

Marijuana plant material is tightly packed into a cylinder with perforations at the bottom. A solvent, such as butane, is poured over the plant material. The solvent extracts THC and is collected in a heating vessel beneath the cylinder. The resulting liquid is heated at low temperature to remove the solvent from the THC extract.

