271. Kratom: natural painkiller or herbal enemy?

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Objective: *Mitragyna speciosa*, colloquially known as kratom, is endemic to tropical Southeast Asia. The primary active alkaloids and μ receptor agonists are mitragynine and 7-hydroxymitragy- nine and the latter has 13-fold higher opioid receptor potency than morphine [1]. Knowledge of these components has led to kratom's marketing as an analgesic for chronic pain, reliever of opioid withdrawal symptoms, and anxiolytic. However, little formal study regarding the possible dangers of kratom use has occurred. Methods: Data was obtained from the Toxicology Investigators Consortium (ToxIC) case registry maintained by the American College of Medical Toxicology since 2010. Participating sites include over 50 locations in the US and three international locations. A descriptive analysis of this registry was conducted to report the epidemiology of kratom exposure.

Results: There were 15 exposures reported to ToxIC from April 2013 to August 2016. No analytic confirmation was performed. Of these exposures, 14 of 15 (93%) were male. The median age was 36 years with a range of 17 to 57 years. All exposures were oral in the form of tea, capsules, pills, or powder. In 8 of 15 (53%) cases, kratom was ingested with at least one other sub- stance. None of the cases were self-harm attempts. One death was reported with co-ingestion of quetiapine, lamotrigine, and paroxetine. When combined with alcohol, one patient developed cholestatic liver injury, while another developed multi-organ injury attributed to hypoxia after isolated kratom use. Among patients for whom data was available, the most commonly reported signs and symptoms included hypertension (2/10), tachycardia (3/10), seizures (2/11), agitation (3/11), respiratory depression (2/9), and central nervous system depression (6/11). In total, 40% of the patients received therapy with naloxone, sodium bicarbonate, and/or benzodiazepines.

Conclusion: To date, most published literature on kratom consists of case reports [2], introducing confounding factors regarding lack of quality control and drug interactions. This study provides systematically collected population data, highlighting the epidemiology of kratom exposures and potential adverse effects. At minimum, the available information suggests extreme caution when using kratom products, especially with other sub- stances. Further studies are needed to investigate the efficacy and safety, including addiction potential of kratom.

References

[1] Takayama H. Chemistry and pharmacology of analgesic indole alkaloids from the rubiaceous plant, *Mitragyna speciosa.* Chem Pharm Bull. 2004;52:916–928.

[2] Ulbricht C, Costa D, Dao J, et al. An evidence-based systematic review of kratom *(Mitragyna speciosa*) by the Natural Standard Research Collaboration. J Diet Suppl. 2015;10:152–170.