

Long-Term Buprenorphine Treatment for Kratom Use Disorder: A Case Series

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Conflicts of Interest

Financial Relationship:

- Viktoriya R. Broyan: employed by Ideal Option, PLLC
 - Ideal Option provides medication-assisted treatment, primarily for patients with opioid use disorder.
- Jessica K. Brar: medical student at Elson S. Floyd College of Medicine in Washington State University
 - Completed a paid summer research internship at Ideal Option

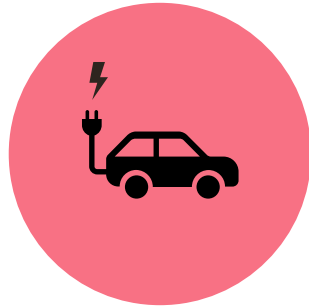
Background

- Opioid overdose death rates have been increasing within the past few years, accounting for 47,600 American deaths in 2017.
- More recently, there has been an increased use of alternative substances (such as kratom) which can also produce central nervous system effects.
- Opioid agonist therapy with buprenorphine has been identified as an effective treatment modality against many illicit substances.
 - However, current literature includes only a few, small (sample sizes of 1-2) case reports regarding treatment of kratom use disorder with buprenorphine.

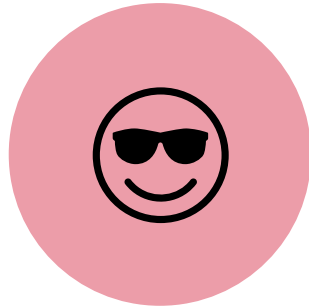
What is Kratom?

- Kratom (*Mitragyna speciosa*) is an herbal supplement available in multiple forms:
 - Leaves
 - Powder
 - Extract
 - Pills
 - Capsules
- Most importantly, kratom is composed of:
 - **Mitragynine:** acts as a partial agonist at the mu-opioid receptors and as an antagonist at the kappa-opioid receptors
 - **7-hydroxymitragynine:** acts as an opioid receptor agonist and antagonist at the mu and kappa opioid receptors, respectively





< 5g
Energized



5 – 15g
Euphoric



> 15g
Sedated

Kratom Use

- **Increasing reports of kratom exposure and use in the US:**
 - Legal status
 - Addictive potential
 - Increasing popularity
 - Comparable price
 - Accessibility
 - Used for pain and withdrawals

The Problem

Individuals with regular kratom use can become dependent, and/or experience cravings and withdrawals.



Methodology

- Patients were included in this case series if they identified kratom as their *primary* substance of use and were subsequently treated with buprenorphine.
- **Target variables analyzed for each patient included:**
 - ✓ Past length and average daily dose of kratom
 - ✓ Buprenorphine induction dose
 - ✓ Stabilizing and current buprenorphine dose
 - ✓ Current outpatient appointment frequency
 - ✓ Urine definitive drug test results
 - ✓ Duration of treatment
 - ✓ Current treatment status

Case Series

- 28 patients were identified with kratom as their primary substance of abuse:
 - 11 females
 - 17 males
 - Age range: 24 to 53 years (average: 36 years)
- On average, patients used 92 grams of kratom per day before seeking treatment
 - History of kratom use ranged anywhere from 1 month to 25 years

Results

Buprenorphine Induction Dose

	# of patients
1 mg	1
2 mg	1
4 mg	6
6 mg	1
8 mg	10
12 mg	5
16 mg	3
20 mg	1

Stabilizing Buprenorphine Dose

	# of patients
4 mg	3
8 mg	3
10 mg	1
12 mg	7
16 mg	12
18 mg	1
20 mg	1

Last/Current Buprenorphine Dose

	# of patients
0.25 mg	1
2 mg	2
4 mg	2
6 mg	1
8 mg	3
12 mg	2
16 mg	12
14 mg	2
18 mg	1
20 mg	2

- 20 out of 28 patients are still receiving maintenance treatment
 - 6 patients were lost to follow-up due to missed appointments
 - 1 tapered down to 0.25mg of buprenorphine and self-discharged
 - 1 moved out of town
- Patients not lost to follow-up have been in ongoing treatment anywhere from 4.5 months to 22 months
 - Majority of the patients are seen every 2 weeks

Results continued

Past Kratom Use (g/day)	Number of Patients	Stabilizing BUPNx dose
0-10	3	10 mg
11-20	4	12 mg
21-30	2	8 mg
31-40	1	16 mg
41-50	1	10 mg
51-60	7	15 mg
61-70	-	-
71-80	2	16 mg
81-90	-	-
91-100	1	12 mg
101-110	-	-
111-120	2	16 mg
>121	4	12 mg



There was no correlation between stabilizing buprenorphine dose and past average daily dose of kratom

Conclusion

- Largest case series exploring buprenorphine treatment for kratom use disorder.
- Findings suggest that buprenorphine can be an effective treatment option.
 - This is especially important since kratom is being used in place of traditional opioids.
- Treatment should be tailored to each individual, to determine the appropriate buprenorphine dose

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