



# The Many Faces of ‘Molly’ – Methylone, MDMA and Other Substituted Amphetamines

Merriman M, O’Connor T, Wiegand TJ.

Department of Emergency Medicine, University of Rochester Medical Center, Rochester, NY, USA.

## Background

- There is a belief among users that ‘Molly’ is a pure form of MDMA (methylenedioxymethamphetamine) or ‘Ecstasy’
- In New York ‘Molly’ has been reported to contain a variety of other compounds
- Methylone is the beta-keto version of MDMA and has become known as a ‘research chemical’ and ‘bath salt’
- Methylone has reportedly been sold as ‘Molly’ or misrepresented as MDMA

## Purpose

- A case series of patients hospitalized after reported use of ‘Molly’
- Includes reason for use, clinical course and confirmatory testing when available

## Methods

- Review of patients hospitalized and evaluated by Medical Toxicology after reported use of ‘Molly’
- Patients presented to a single academic medical center over a two year period

## Results

- Eleven patients aged 18 to 42 (mean 23), 7 female and 4 male
- 8 were admitted, 3 were intubated and required ICU care
- Most were tachycardic, all were agitated and/or delirious
- Rhabdomyolysis occurred in 9
- Acute intoxication usually resolved after 12 hrs (range 6 to 24 hrs)
- 4 had specific urine testing for cathinones, 3 were positive for Methylone

- 8 had confirmed polysubstance use
- 10 were using recreationally and 1 was a suicide attempt
- Care was mainly supportive with benzodiazepines, fluids and cooling

## Discussion

- ‘Molly’ users were young and predominantly female in this cohort
- Intoxication presented as a mix of sympathomimetic and serotonergic findings, similar to other empathogenic amphetamines

## Conclusion

- Contrary to popular belief, ‘Molly’ contains a variety of chemicals, including methylone, with stimulant and hallucinogenic properties

### Characteristics, clinical presentation, treatment and outcomes of patients

Age	Gender	Claimed	Presentation	Temp	HR	BP	RR	MS	Urine	Methylone (ng/mL)	Labs	Treatments	Disposition
24	F	Methylone, heroin, GHB	EMS called by boyfriend for agitation and aggressive behavior	37.5	130	96/47	16	Confused, mumbling incoherently, fidgeting	Amp, Bdz, Coc, Thc, Opi	100	WBC 19.1, Cr 1.42, CK 547	Versed, Clonidine, Haldol, IVF, ABX for aspiration PNA	Admitted, symptoms resolved after 24 hours, discharged on day 3
21	M	Molly, EtOH	Seizure and AMS at a rave	40.8	164	132/67	15	Agitated, confused	Amp, Bdz	Negative	CK 37804 peak, WBC 19.9, Cr 1.60, elevated LFTs	Versed, Ativan, cooling, ETT for airway protection, IVF	Admitted to ICU, extubated after 2 days, discharged after 6 days
21	F	Molly	Found unresponsive on park bench	37	80	128/81	12	Intermittently somnolent and combative	Thc, Coc	Not tested	WNL	None	Discharged from ED after 8 hours
19	F	Molly, ecstasy, THC, EtOH	Swollen lower lip and tongue, drooling after partying all weekend	37	120	133/95	20	Intermittent somnolence and agitation	N/A	16000	WBC 18.5, CK 465	Ativan, Solumedrol, Pepcid, IVF	Admitted overnight and discharged next morning
21	M	Methylone	Anxiety and near syncope on the way to school	36.1	142	138/85	N/A	Anxious, agitated, hyperactive	N/A	Not tested	WNL	Adenosine initially, Valium	Discharged from ED after 6 hours
18	M	Molly (methylone), ecstasy, NBOMe	Agitated and altercation with security at concert, pepper sprayed	37.3	106	157/87	23	Agitated, paranoid, combative, hallucinating	Amp, Bdz, Coc, Thc	Not tested	CK 1337, lactate 4.4, WBC 14.8	Versed, Ativan, IVF, restraints	Admitted, symptoms resolved after 12 hours, discharged next day
20	F	Molly	Multiple seizures after OD on molly at a concert	39.7	138	134/56	25	Unresponsive, posturing, GCS 8	Amp, Bdz, Thc	Not tested	K 6.2, trop 0.07, CK 43400 peak, lactate 5.6, Cr 1.62	Versed, Ativan, cooling, ETT for airway protection, IVF, propofol	Admitted to ICU, extubated next day, discharged after 4 days
23	F	Molly	Collapse then seizure at a concert, AMS and combative	41.2	128	125/62	29	Minimally responsive, combative	Amp, Opi	Not tested	CK 3516 peak, lactate 3.9, Cr 1.66, trop 0.19	Ativan, Versed, phenobarb, cooling, ETT for airway protection, IVF	Admitted to ICU, extubated next day, discharged after 5 days
23	F	Molly, ecstasy, EtOH	Epigastric and midsternal CP after binge, +Upreg and spotting	36.6	57	92/59	18	Anxious, emotionally labile	Thc, Opi	150	CK 309, HCG neg, AG 19	IVF	Discharged from ED after 10 hours
22	F	Molly, LSD, THC, EtOH	MHA for AMS in home by police after 911 hang up	35.6	106	160/100	20	Perseverating, not following commands, hallucinations	Thc	Not tested	WBC 16.1, CK 146	Restraints, Ativan, IVF	MS not clearing after 12 hours, admitted then discharged later that day
42	M	Molly, cocaine	Brought in by friend for suicidality and agitation after coke binge	36.4	99		21	Agitated, disoriented, not responsive to questioning	Coc	Not tested	AG 23, CK 4241	Ativan, IVF	Admitted to BMSU then transferred to Psych on hospital day 3

