

Cathinones; The Zombie's Drug

Final Project

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Introduction:

- Recently, a new kind of synthetic drugs have spawned becoming the fourth most consumed drug.
- Synthetic cathinones are mainly produced in China.
- They are commonly known as "bath salts", "bubbles", "meow meow"... among others.
- These drugs are consumed for their stimulant effects such as euphoria, socialization and sexual appetite.
- In some cases, overdose cause peculiar manifestations including pain inhibition and cannibalism, which have lead it to a high media impact.

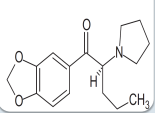
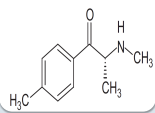
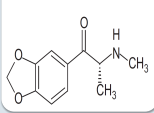
Aims and Methodology:

- To describe the main cathinones found in "bath salts" and their action mechanisms, as well as the effects of acute and chronic exposition.
- This project was based on papers from "pubmed" using "cathinones", "bath salts", "psychosis"..., as key words and taking in account their quality, contents and validity.

Origin:

- Synthetic cathinones are based on the structure of the natural cathinone present in the plant *Chata edulis*.
- Inhabitants from Arabian Peninsula and East Africa chew fresh leaves for its psychotropic effect.
- Long term consumption may cause keratotic oral lesions, acute coronary vasospasms, depression, insomnia, psychosis and amnesia.

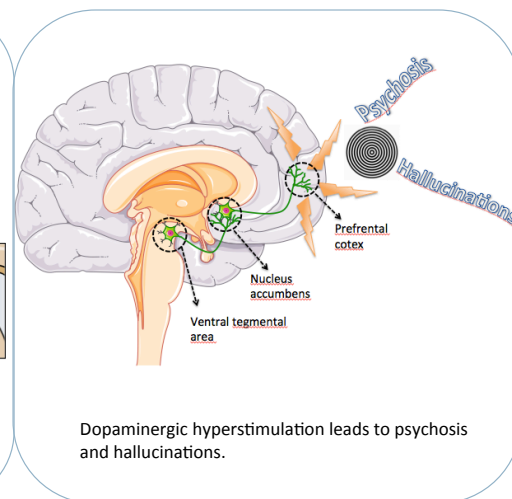
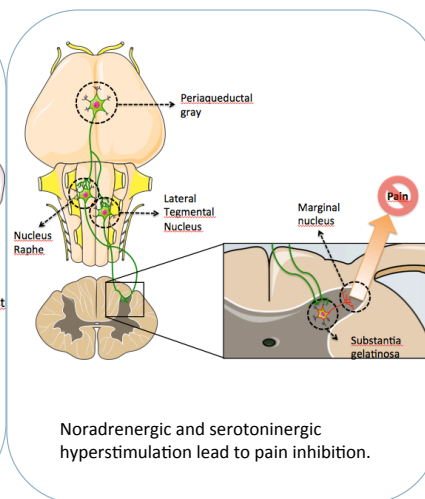
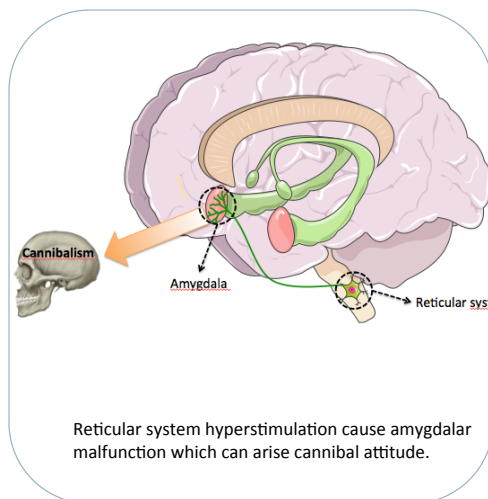
Main Molecules

MDPV	Mephedrone	Methylone
		
3,4-methylenedioxy-pyrovalerone	4-methylmetha-cathinone	3,4-methylenedioxy-metha-cathinone
Tertiary amine	Tertiary amine	Tertiary amine
Highly liposoluble	Highly liposoluble	Highly liposoluble
Monoamine uptake inhibitor	Monoamine uptake inhibitor	Monoamine uptake inhibitor

Detection:

- Cathinones are not detected by drug routine tests but they can be identified using gas chromatography/mass spectrometry or liquid chromatography/mass spectrometry techniques.
- A correlation between concentrations and the clinical effects is not yet available.

Acute Intoxication Effects



Cronic Intoxication:

- Although there is not many available data, the known effects of a chronic intoxication are depression, cognitive and emotional impairment, abdominal pain, rhabdomyolysis and renal injuries.
- Cocaine-like addiction has been also described as a long-term exposition effect.

Treatment:

- The treatment of the "bath salts" intoxication is basically symptomatic.
- The treatment consists on the administration of benzodiazepines as first step, and also antipsychotics can be used.

Conclusions:

Cathinones are an emergent designer drug structurally based on the natural cathinone from *Chata Edulis*. These drugs act on monoaminergic pathways causing both acute and chronic effects, including pain inhibition, cannibalism, psychosis and cocaine-like addiction. Further studies are needed to improve the current non-specific treatment as well as the lack of detection from routine test. Those studies could also reveal more about synthetic cathinones pharmacokinetics.