



# Acute intoxications by New Psychoactive Substances (NPS): patterns of use and circumstances of exposure

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## Aim of the investigation...

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...is to identify which new psycho-active substances (NPS) lead to consultation of emergency units because of undesirable effects and to identify patterns of use and circumstances of consumption.

Part 1: retrospective evaluation\*

Part 2: prospective evaluation

\* Hermanns-Clausen M, et al Addiction 2013, 108:534-44;

# Retrospective evaluation (Part 1)

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## Methods:

- Retrospective inquiry in the Poison Center's database and re-evaluation of medical records

## Inclusion criteria:

- Intentional consumption of NPS, which lead to medical emergency treatment from January 2008 to June 2013.

## Aim of the investigation...

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Part 1: retrospective evaluation\*

Part 2: prospective evaluation

\* Hermanns-Clausen M, et al Addiction 2013, 108:534-44;

# Part 1: Results

The study covered 263 patients after consumption of NPS.

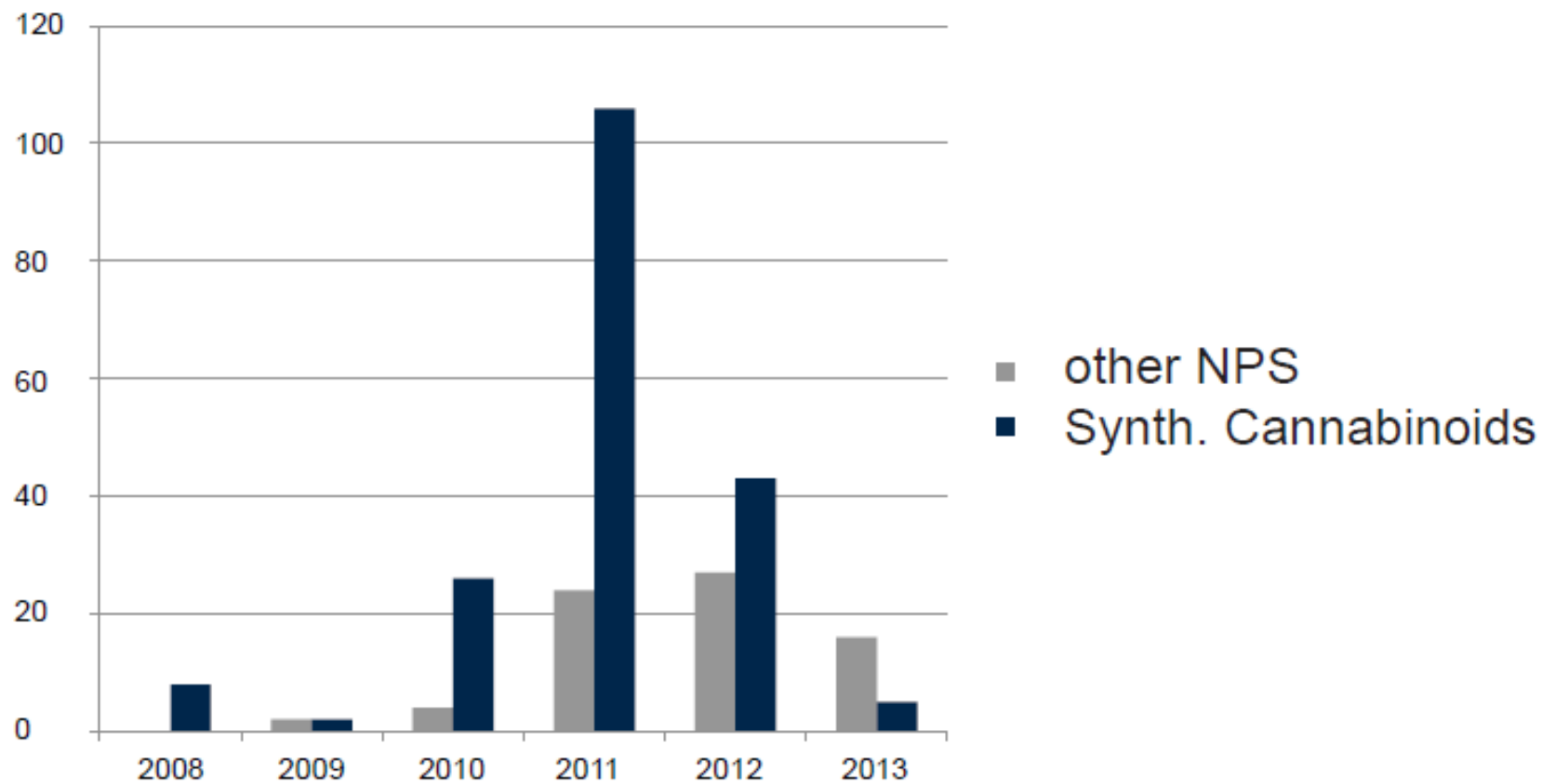


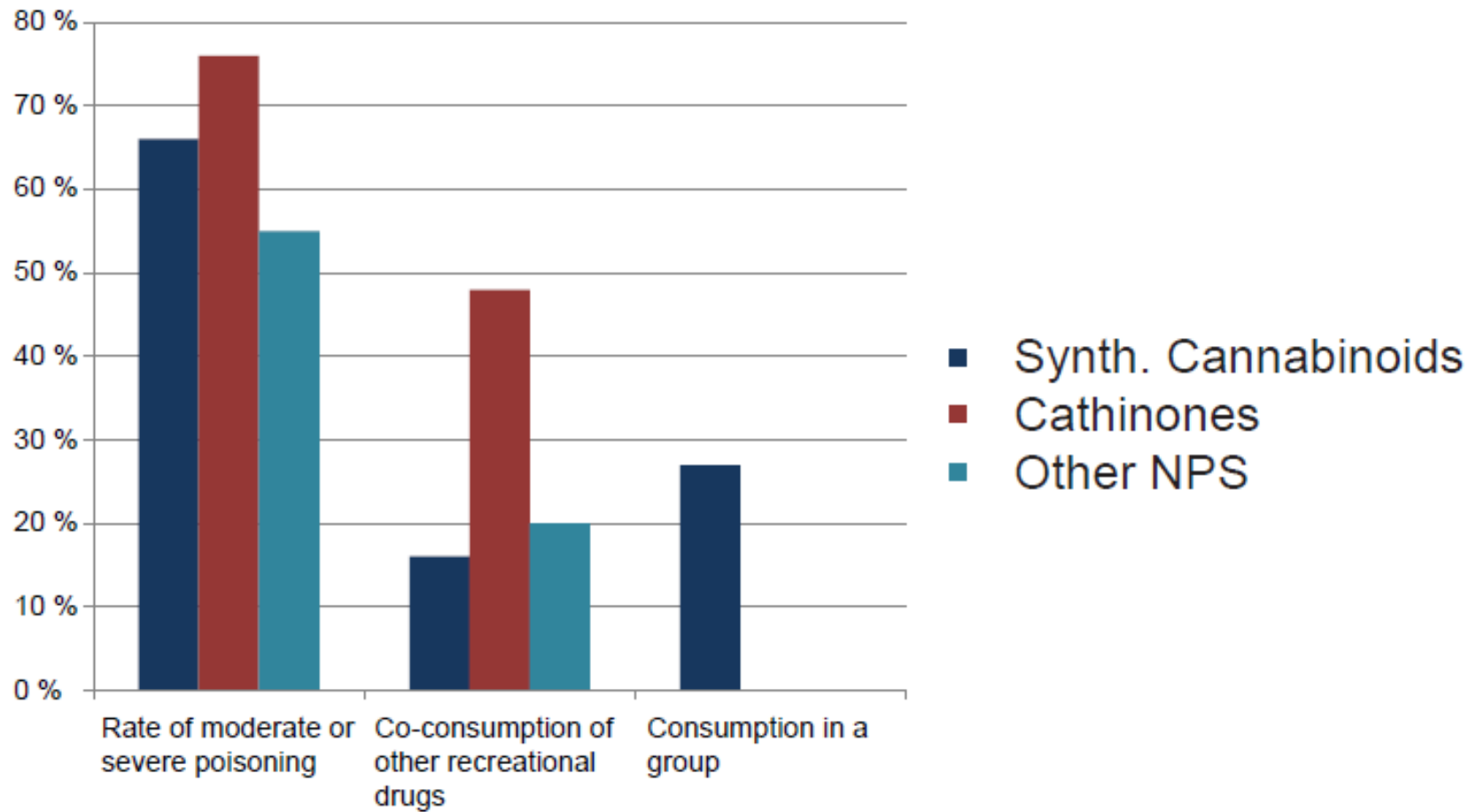
Figure 1: Number of poisoning cases / year (n=263)

## Part 1: Results

|                     | Synth. Cannabinoids             | Synth. Cathinones                        | Other NPS*                |
|---------------------|---------------------------------|------------------------------------------|---------------------------|
| Number of patients  | 190                             | 59                                       | 14                        |
| Age (Median; range) | 18; 12-46                       | 28; 18-55                                | 22; 13-34                 |
| Gender ratio (male) | 83 %                            | 97%                                      | 86%                       |
| Route of exposure   | Inhalation (94 %)<br>Oral (6 %) | Oral (56%)<br>Nasal (24%)<br>Other (20%) | Oral (85%)<br>Nasal (15%) |

\*Altogether 11 different NPS were consumed, f. e. 2C-E (3), 2C-D (2), 2C-P (1)

# Part 1: Results



# Part 1: Conclusion

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The young and not so experienced users of synthetic cannabinoids (in particular adolescents) seem to be especially under risk of developing acute poisoning. Consumption in a group possibly increases risk of intoxication. Herbal blends may appeal to Cannabis users, such as adolescents.

Consumers of cathinones seem to be most likely experienced users with a high rate of co-consumption of illegal substances, as reported from the nightlife scene [1].



# Prospective evaluation (Part 2)

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## Inclusion criteria:

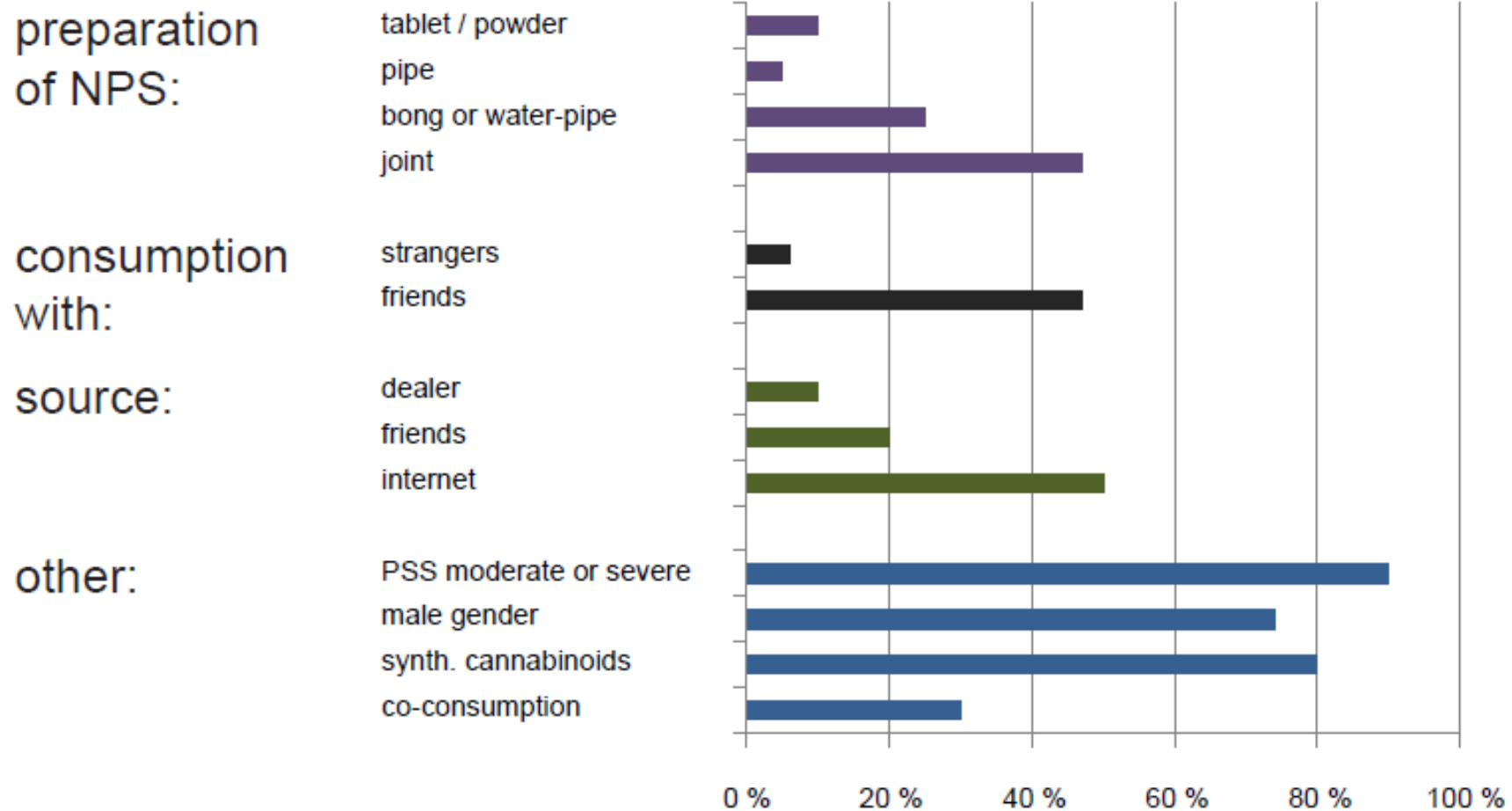
- Emergency medical treatment after self-reported consumption of NPS
- Informed consent for study participation

## Methods:

- Questionnaire about pattern of consumption and circumstances of exposure
- Toxicological analysis, if serum and/or urine samples are available
- Clinical course, treatment and outcome

## Part 2: Interim Results

19 patient were included so far; Age 13-42 years (Median 16)



# Timeline and Deliverables

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## Retrospective evaluation from May 2013 on

- First results published [2,3], additional results presented on scientific meetings in May 2014 [4,5]
- Ongoing analysis especially of analytically confirmed cases

## Prospective observational study started in July 2013

- Experienced poly-drug users like the Cathinone consumers seem to be more suspicious of (legal) consequences than unexperienced users of synth. cannabinoids → cause for denial of study participation
- Number of cannabinoid intoxications reported to PC decreased in 2013  
... participation rate is currently low

2. Hermanns-Clausen M, et al Addiction 2013, 108:534-44;  
3. Hermanns-Clausen M et al Drug Test Anal. 2013 5:790-4

4. Kithinji J et al <http://www.egms.de/static/de/meetings/sgkj2014/14sgkj02.shtml>  
5. Kithinji J, et al Clin Tox 2014. 52:359

# Conclusion and Perspectives

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Data from intoxicated patients are a very important source for identifying certain substances as well as user groups and patterns of consumption and of drug use causing EMT.

The identification of early signs of intoxication will be useful for developing specific approaches in secondary prevention.

Analytical evidence and a thorough clinical examination is a prerequisite to better assessment of acute toxicity of certain NPS in humans

Thank you for your attention!



## Acknowledgements

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