REVIEWING “APINACA”, AN EMERGENT SYNTHETIC CANNABINOID RECEPTOR AGONIST

FN, Dinamarca 1, L. Galindo 1,2,4, M. Grefill 1,2, M. Campillo 1, V. Pérez 1,2,4, M. Terrens 1,2,4, M. Farré 2,3,4

1. Institut de Neuropsiquiatría i Addiccions, Parc de Salut Mar, Barcelona, Spain.
2. Institut Hospital del Mar d’Investigacions Mèdiques, Barcelona, Spain.
3. Servei de Farmacologia Clínica, Hospital Germans Trias i Pujol, Barcelona, Spain.
4. Universidad Autónoma de Barcelona, Bellaterra, Spain

Introduction

Since 1990 there is an increase in the synthesis and in some cases the preclinical evaluation of new molecules that act on the cannabinoid synthesis, but no one has been marketed as a medicine. Recently, with the proliferation of New Psychoactive substances (NPS), an important number of synthetic cannabinoid appeared in the “legal high” market as Spice or other names. There is almost no research available and, despite its widespread use, the animal or human pharmacology of substances is unknown.

Objective

Reviewing literature for exposing the history and current state of knowledge of the AKB-48 molecule.

Material and methods

A review of the publications of the molecule is done by searching for keywords “AKB-48” “AKB48” “APINACA” “Synthetic cannabinoids” in Pubmed and Google scholar.

Results - Review

The dose needed to produce the desired effect is actually unknown and also have not been described any clinical utility (4). Adarsh S. and colleagues conducted the first characterization of their metabolism in vitro, in a sample of human hepatocytes, describing 17 new metabolites of phases I and II, including glucuronidated metabolites, permitting the identification of the substance in urine analysis for forensic and clinical use 

Clinical aspects

The AKB-48, or APINACA, was firstly reported in Japanese herbal smoking blends in 2012 (1), nevertheless the origin of the nomination is thought to be in Thailand.

One of the differences with earlier JWH-type synthetic cannabinoids, is that the molecule has an indazol ring connected to an adamantyl group through a carbamido linkage (2).

Conclusions

The European Early Warning System (EWS) informs specially an increase in the detection of new cannabinoids that are sold like “legal alternatives” of marijuana.

APINACA is currently not under international control and, as we can see in this review, there is lack of evidence and it has been described a potential harm. Further characterization of pharmacodynamics and pharmacokinetics of the compound is needed and also it’s necessary to know the actual epidemiology of the use of this substance in order to determine the impact of its consumption and provide more information in understanding the cannabinoid system.

References

[1] Uchiyama N, Kawamura M, Kikura-Hanajiri R, Geda Y (2012). Identification of two new-type synthetic cannabinoid, N-(1-adamantyl)-1-pentyl-3H-indole-3-carboxamide (APICA) and N-(1-adamantyl)-1-pentyl-3H-indazole-3-carboxamide (APINACA), and detection of five synthetic cannabinoids, AM-1220, AM-2233, AM-1241, CB-13 (CRA-13), and AM-1248, as designer drugs in illegal products. Forensic Toxicol 30(2): 114-125

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