Expert Committee on Drug Dependence

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World Health Organization

Expert Peer Review for AB-CHMINACA

1. Comments based on the review report

a. Evidence on dependence and abuse potential

AB-CHMINACA is a synthetic cannabinoid receptor agonist (SCRA) with an aminoalkylindazole structure. Similar to other SCRAs, AB-CHMINACA is sold and used as a 'legal' substitute for cannabis.

The Critical Review Report states that no animal or human studies of AB-CHMINACA regarding dependence potential have been published. The critical review quotes a drug discrimination study for number of SCRAs, including AB-CHMINACA in mice. All compounds tested substituted for Δ9-THC. Rank order of potency correlated with CB1 receptor-binding affinity. Of the tested compounds, AB-CHMINACA produced full, dose-dependent substitution for Δ9-THC and was 16 times more potent than Δ9-THC. There is no evidence from scientific studies to indicate abuse potential in humans.

b. Risks to individual and society because of misuse

The critical review report discusses the similarity of acute effects of THC and SCRAs such as AB-CHMINACA. These include: relaxation, euphoria, lethargy, depersonalisation, distorted perception of time, impaired motor performance, hallucinations, paranoia, confusion, fear, anxiety, dry mouth, conjunctival injection ("red eyes"), tachycardia, and nausea and vomiting. In some cases, the effects are reported to be more pronounced/severe in SCRAs.

The review also indicates that compared to cannabis, severe and fatal poisoning appears to be more common with SCRAs. Poisoning may include rapid loss of consciousness/coma, cardiovascular effects (such as hypertension, tachycardia, bradycardia, chest pain, myocardial infarction, and stroke), seizures and convulsions, vomiting/hyperemesis, delirium, agitation, psychosis, and aggressive and violent behaviour. Sudden death has also been reported.

The review also reports that during the period 2014 – 2017, a total of 7 acute intoxications and 31 deaths with confirmed exposure to AB-CHMINACA in European countries. In 7 of the deaths, AB-CHMINACA was either reported as a cause of death or contributing to the death.

The critical review describes many published studies from 2014 to 2017 of SCRAs intoxication including analytically confirmed cases involving AB-CHMINACA.As per review report, in a non-fatal toxicity case in Florida, 24 Patients demonstrated acute delirium and 14 patients had seizures. Ventilator support and ICU-level care was required in 5 patients. The presence of AB-CHMINACA, or one of its predicted metabolites was confirmed in 15 of 21 cases.

As per the available evidence, a series of cases presented at an Emergency Department in the year 2015, the most common SCRA present was MDMB-CHMICA and also AB-CHMINACA. A case of intoxication with a mix of new psychoactive substances was reported in 2016. Findings suggest that two SCRAs (AB-CHMINACA, AB-FUBINACA) and 3 synthetic cathinones (alpha-PHP, alpha-PVP and 4-CMC) were only detected in urine but also in stomach content, with the exception of 4-CMC (only urine). Also a case study of an individual who suffered from diabetic ketoacidosis, following consumption of synthetic cannabinoids has been reported in 2015. The results suggest the presence of 11 SCRAs (AB-CHMINACA, AB-FUBINACA, AM-2201, 5F-AMB, 5F-APINACA, EAM-2201, JWH-018, JWH-122, MAM-2201, STS135 and THJ 2201) in, blood from a femoral vein. The review also discussed a fatal case in which use of AB-CHMINACA is associated with non-cardiogenic pulmonary edema. Analyses of blood revealed high levels of AB-CHMINACA mL and its metabolites along with trace amounts of three other SCRAs (5-fluoro-AMB, FUB-PB-22 and AB-FUBINACA).

c. Magnitude of the problem in countries (misuse, illicit production, smuggling etc)

The critical review states that similar to other SCRAs, AB-CHMINACA is sold and used as a 'legal' substitute for cannabis. It has cannabimimetic effects in doses lower than the doses of Δ9-tetrahydrocannabinol (THC). The most common way of using it is by smoking a joint or vaping through an e-cigarette. People who use AB-CHMINACA may include recreational users, high-risk drug users, and groups who experiment with the substance (such as psychonauts). Furthermore, individuals who are subject to drug testing (such as people in drug treatment, prisoners, and drivers) may use AB-CHMINACA because routine drug tests/screens will be unable to detect SCRAs.

The review also indicates that around 2014, AB-CHMINACA appeared on the international drug markets. Since then investigators in Japan, Hungary and USA have

looked at the presence of SCRAs in persons suspected of driving under the influence of drugs (DUID) and persons involved in traffic incidents.

In Japan, between 2012 and 2014, 214 cases of motor vehicle collisions were attributed to the use of illegal drugs. The investigated cases showed that AB-CHMINACA was involved in 11 cases. It was also detected in blood in 4 cases and in urine in 3 cases.

In Hungary, during 2014-2015 blood and/or urine samples of 1252 suspected drivers were analyzed for traditional illicit drugs and for novel psychoactive substances. The findings suggest that around 37% of the tested drivers' impairment was proven based on the legal criteria of Hungary. Cannabis was the most frequent used drug and the use of SCRAs was found to be much lower (AB-CHMINACA and MDMB-CHMICA).

In USA (2014), 58 suspected DUID cases were reviewed that were positive for the SCRAs (AB-CHMINACA or AB-PINACA). Out of these, AB-CHMINACA was detected in 33 cases.

In the review there are indications that there is limited data for AB-CHMINACA, but SCRAs are being increasingly used by vulnerable groups, such as prisoners. Hence the social risks might share similarities with other SCRAs. Reports suggest that this has caused new health and social problems.

d. Need of the substance for medical (including veterinary) practice

There is no medical or veterinary use of AB-CHMINACA at the present time.

e. Need of the substance for other purposes (e.g. industrial)

AB-CHMINACA has no industrial use.

f. Measures taken by countries to curb misuse

The critical review indicates that AB-CHMINACA is a controlled substance in countries like Austria, Belgium, Bulgaria, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Japan, Latvia, Lithuania, Luxembourg, Norway, Poland, Slovakia, Slovenia, Sweden, Switzerland and Turkey. It is placed under temporary control in USA.

g. Impact if this substance is scheduled

There are no known therapeutic or industrial applications for AB-CHINACA and it is not listed on the WHO Model List of Essential Medicines. Therefore, there may be no impact if this substance is controlled.

2. Are there absent data that would be determinative for scheduling?

Experimental data on dependence potential in animals and humans could provide some assistance in scheduling.

3. Other comments or opinions

None

4. Expert reviewer's view on scheduling with rationale

AB-CHMINACA is a synthetic cannabinoid receptor agonist (SCRA). It is clandestinely manufactured and sold under a variety of brand names. It has cannabimimetic effects in doses lower than the doses of Δ9-tetrahydrocannabinol (THC), which is listed as Schedule II substance in accordance with the Convention on Psychotropic Substances of 1971. Sufficient evidence of abuse potential of AB-CHMINACA in humans is lacking. Its mode of action suggests the potential for dependence and likelihood of misuse. Preliminary data collected from literature indicated that this substance may cause substantial harm and that it has no medical use. There is an evidence of increase in number of persons using AB-CHMINACA in many countries globally with reported fatal and non-fatal cases. In view of its serious risk to public health, AB-CHMINACA should be placed under international control in Schedule II of the 1971 Convention on Psychotropic Substances.