

CHEMICAL AGENTS USED IN PUBLIC DEMONSTRATIONS CONTROL ON CIVILIANS, PRISONERS AND MILITARY TRAINING

AGENTES QUÍMICOS USADOS NO CONTROLE DE MANIFESTAÇÕES POLÍTICAS EM CIVIS, PRISIONEIROS E TREINAMENTO MILITAR

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Submissão: 20/07/2023

Aprovação: 13/08/2023

ABSTRACT:

The objective of this study is to demonstrate that the use of chemical weapons to reinforce law enforcement is highly questionable and its side effects can lead individuals to death.

Chemical weapons were widely used in the First World War and their prohibition was only established by the Geneva Convention in 1925.

The Chemical Weapons Convention (CWC), complements the Geneva Protocol and restricts the production of these chemical agents only for medical, pharmaceutical, scientific research and protection purposes, authorizing their use for law enforcement, including for security control purposes. domestic disturbances.

Brazil is a signatory, having joined in 1997.

Since the end of the last century, information has been disseminated that some gases would be safe and useful for law enforcement, and this idea has been widely used by the Governments of countries for law enforcement.

Thus, despite the convention determining the prohibition of chemical weapons in war, their use is permitted in law enforcement. The permitted substances are classified as “riot control agents” or riot control agents (RCAs).

A riot control agent is defined as any chemical not listed on a schedule that can produce sensory irritation or disabling physical effects rapidly in humans and that disappear within a short period of time after cessation or exposure. It generates side effects that can lead to death.

The safety of the RCA is questionable as it is based solely on animal and healthy military voluntaries tests.

The magnitude of toxic effects varies individually and also depends on the degree of exposure.

KEYWORDS: Chemical weapons. Prohibition of chemical weapons in wars. Riot Control Agents (RCA) – Side effects.

RESUMO:

O objetivo do presente estudo é demonstrar que o uso de armas químicas para reforçar a aplicação da lei, é bastante questionável e seus efeitos colaterais podem levar indivíduos à morte.

As armas químicas foram amplamente utilizadas na Primeira Guerra Mundial e a sua proibição somente foi estabelecida na Convenção de Genebra em 1925.

A Convenção sobre Armas Químicas (CWC), complementa o Protocolo de Genebra e restringe a produção destes agentes químicos apenas para fins médicos, farmacêuticos, de investigação científica e de proteção, autorizando a sua utilização para aplicação da lei, incluindo para fins de controlo de distúrbios domésticos.

O Brasil é signatário tendo aderido em 1997.

Desde o final do século passado, vem sendo disseminada a informação de que alguns gases seriam seguros e úteis para a aplicação da lei, e esta ideia vem sendo amplamente utilizada pelos Governos dos países para aplicação da lei.

Assim, apesar da convenção determinar a proibição de armas químicas em guerras, seu uso é permitido na aplicação da lei. As substâncias permitidas estão classificadas como “riot control agents” ou agentes de controle de motim (RCAs).

Um agente de controle de distúrbios é definido como qualquer produto químico não listado em uma programação que pode produzir irritação sensorial ou efeitos físicos incapacitantes rapidamente em humanos e que desaparecem dentro de um curto período de tempo após o término ou exposição. Gera efeitos colaterais podendo levar à morte.

A segurança do RCA é questionável, pois se baseia apenas em testes com animais e voluntários militares saudáveis.

A magnitude dos efeitos tóxicos varia individualmente e depende também do grau de exposição.

PALAVRAS-CHAVE: Armas químicas. Proibição de armas químicas em guerras. Riot Control Agents (RCA) – Efeitos colaterais.

I. CHEMICAL WEAPONS. THE GENEVA CONVENTION (1925) AND THE CHEMICAL WEAPONS CONVENTION (1992)

Chemical weapons were extensively deployed in the First World War and their later prohibition was established on the Geneva Convention in 1925. The debate on the use of chemical weapons against civil populations goes beyond more than a century.

In 1992 delegates of 239 countries set up a convention proposal regulating and proscribing their use in wars. That agreement came into effect only in 1997,⁽¹⁾ and with a late adhesion of Brazil in 1999 (Decree 2977; 03/01/1999) nowadays counts with 193 countries.

The Convention complements the Geneva Protocol of 1925 on the ban of asphyxiant and toxic gases and biological weapons in wars. It was named ‘Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction’ or Chemical Weapons Convention (CWC) for short, and it is supervised by the Organization for the Prohibition of Chemical Weapons (OPCW). It restricts the production of these chemical agents just for medical, pharmaceutical, scientific research, and protection, and authorizes their use for ‘law enforcement including domestic riot control purposes’ (Article II, 9d).⁽²⁾

II. THE RIOT CONTROL AGENTS. THE DISSEMINATION OF THE TEAR GAS AND ITS USE AGAINST CIVIL POPULATIONS

Thus, Riot Control Agents (RCA), is defined as ‘any chemical agent that produces rapid and temporary sensorial irritation and incapacitating physical effects, with fast recovery at the end of exposure’.^(1,2) The most known are chloroacetophenone (CN) and dibenzoazepine (CR), substituted, in the last decade, with 2-chlorobenzalmalonitrile (CS), the main component of tear gas, and capsicum oleoresin (OC capsicum), an oily extract of the chilly pepper’s genus *Capsicum*, used as pepper spray,⁽³⁾ the last both also used in explosive devices called “stun bombs”.

At the end of the last century, a corruption scheme, involving a former FBI agent and a general linked to the RCA industry, helped to disseminate that tear gas would be

“safe” and useful for law enforcement. In recent years, cities such as Portland and Seattle have tried (with fleeting success) to ban the use of chemical weapons.(4)

Making it easier, we will call tear gases all the products that have that effect, like CS, OC, CR and CN. The products CS and CN are powders liberated as aerosols under pressure, or as smoke from explosive bombs which produce smoke and flames.(3–5) Although OPCW interdict the use of tear gases and other chemical weapons in wars, these agents continue to be used against civil populations.(2,6)

In the Brazilian Constitution, the legality of the right to protest has its essential core supported by the combination of three guaranteed freedoms: freedom of expression, freedom of assembly and freedom of association. Item XVI of Art. 5 of the Federal Constitution of 1988 provides that “everyone can assemble peacefully, without weapons, in places open to the public (...)”.(7) Engagement in collective protest actions remains one of the only concrete possibilities beyond the vote that the majority of people have to fight for their interests. If the criminalization of popular struggle is a historical feature of Brazilian society, demonstrations conducted by sectors more aligned with dominant groups are viewed with greater tolerance by public opinion and the authorities. There are, therefore, profound differences in the way in which state repression treats the occupation of a large estate in favor of agrarian reform and a march against corruption led by pro-market civil organizations.(8)

On May 5, 2022 in Sergipe, Brazil, Genival de Jesus Santos, approached by the federal highway police when driving a motorbike without a helmet, died by asphyxiation after confined into the police car trunk and gassed with tear gas.(9) In Brazil, several other cases report the use of RCA against citizens, whether by military police, metropolitan guards and even by a civilian who, disturbed by the noise, threw a pepper bomb at four workers in work activity (Table).(10–12)

III. THE SIDE EFFECTS OF THE RCA

The adverse effects of the RCA are produced by inhalation, dermal, and mucosal contact. Lesions are also produced directly by the explosions, particulate emissions

and thermic effect.(4,6,13) In contrast to the OPCW statements,(2) these are not only short course effects. More intense exposures can cause upper airway irritation, sore throat, cough, dysphonia, salivation, dysphagia, and dyspnea. Although mucosal effects are usually short-lived (up to 30 minutes) after exposure ends, **this is too long for people to withstand severe and painful acute symptoms.** Effects can last for lengthier periods and can eventually be lethal.(3,4,9,13)

These chemicals act as alkylating agents, inactivating vital enzymes like lactic dehydrogenase and pyruvic decarboxylase, activating the ankyrin 1 transient potential receptor, the transient vanilloid receptor subtype 1, and deregulating the ion channels in the pain sensitive peripheric nociceptive fibers, leading to pain and acute inflammation, deregulation of the **sensory** nervous system.(3,4) Exposed persons may exhibit a variety of signs and symptoms characteristic of multisystem involvement: **cardiovascular effects**, pain, pruritus, skin erythema, irritation of eyes, nose and mouth, laryngospasm, larynx obstruction, salivation, severe cough and bronchospasm, acute respiratory dysfunction, and reactive airway dysfunction syndrome, depending on the intensity of exposure and the patient's comorbidity.(3,13)

Persons with chronic respiratory disease may experience clinical exacerbation if exposed to CS or OC. In training environments, people who wear contact lenses complain of pain when they get OC droplets or CS particles in their eyes. Women seem to be more seriously affected by the respiratory effects of CS than men.(13) A systematic review of 31 studies in 11 countries between 1990 and 2015 showed expressive morbidity and mortality after the use of RCA, with 25% of people with moderate to severe lesions, 2 deaths and 58 permanent impairment(14). One USA Army study showed a 2.5 times greater risk of acute respiratory illnesses after using CS in training sets.(15)

The safety of RCA is questionable as based only in animal and healthy military voluntaries tests. Instead of using adequate study protocols, the toxicity of these agents is tested in open air exposures, where the agents are rather dispersed, diluted in the air.(4) Proponents of their use advocate that people hit by RCA could properly evacuate affected or contaminated areas. On the other hand, high concentrations in confined spaces, with lengthy evacuation time could expose people to major morbidity and high risk of mortality.(1)

Furthermore, RCA can affect any individual, being him a target or no target. The magnitude of toxic effects varies individually and depends also on the degree of exposure (Figure).(11)

The available information on environmental and human chronic and late effects of RCA are limited. Even so, its use is widespread. The debate on RCA use during civil riots must be substantiated on health aspects, and must include the discussion on banning, for not being innocuous and for the impossibility of their controlled use or with minimal concentrations. This discussion cannot be based on producers leaflets or on data and recommendations from security and military agencies.(1,3,4,13)

IV. CONCLUSION

Despite the existence of limited research on the toxic effects of the RCA,(14,15) society seems to be stuck at the problem in the last 30 years(4). Without conclusive evidence of their safety, continuing to use these chemicals on crowds amounts to testing unknown compounds on the public. Safety agencies in various countries refuse to disclose the composition of the products (the active principle and the carrier gases of inflammable devices). A few studies show that both active ingredients and carrier gases cause injuries in humans and animals.(4) More in-depth studies on chronic and late effects, and on treatment and neutralization procedures are badly needed.

Authorities might miscalculate how much agent to use. Someone with an injury or disability, or who is under restraint, might be unable to flee. This variation is not being considered when agents are used in the street. To minimize deaths and serious injuries, researchers and policymakers must work together to expand the evidence base and design guidelines for when and how to use RCA. Stricter reporting and restrictions on use would allow these valuable tools to be deployed as they are intended: to fight violence and crime while keeping the public safe.(13)

In Brazil, the control of use and commercialization of RCA are the prerogative of the Federal Police and the Army. Thus, interfere in some way in this field could not be

easy. But life is always driven by challenges. It is necessary to have transparency on the production and commercialization of these products, allowing the establishment of conduct protocols, and even debate on the ban of RCA.



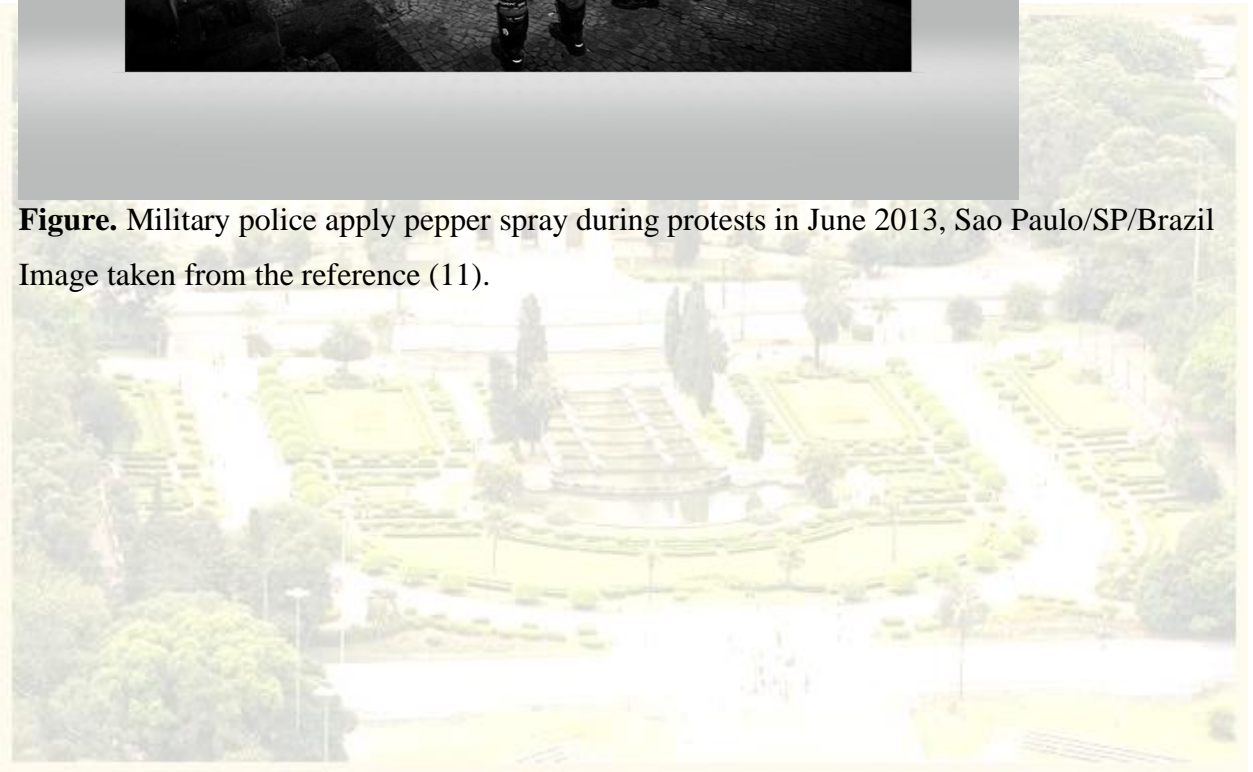
Table. Examples of cases where riot control agents were used against Brazilian citizens

Action instrument	Chemical substance	Outcome	Year	References
Federal highway police action	Inhalation of smoke released by devices	Death of Genival de Jesus Santos from Sergipe	2022	(9)
Action by a civilian against workers on a construction site	Pepper gas	4 construction workers	2020	(10)
Repression of protests in several states	Tear gas	Dozens of people affected, but no emergencies	2013	(11)
Removal of occupation by the civil guard of Sao Paulo	Pepper gas	1 baby, 8 children, 1 pregnant woman and elderly	2022	(12)





Figure. Military police apply pepper spray during protests in June 2013, Sao Paulo/SP/Brazil
Image taken from the reference (11).



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ISSN da versão impressa: 2236-5796

ISSN da versão digital: 2596-111X

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