

Psychophysiological Reactions Related to Intoxication after Use of “*Kadhafi*” in a Case Received for Psychiatric Care in Abidjan

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Abstract

Background: The misuse of opiates is rapidly increasing, particularly among adolescents and young adults, with serious consequences for mental and physical health and social life. This descriptive case study addresses the physiological and psychological reactions associated with the use of Tramadol, in an illicit form locally known as “*Kadhafi*.” **Methods:** The study was conducted at the Addiction and Mental Health Service (SAHM) in Abidjan from 1 to 27 July 2025. A case description was produced based on clinical observations and toxicological urine tests. **Results:** The results reveal a 19-year-old student who presented with an increase in tongue volume (macroglossia) with protrusion, and glossoptosis associated with dizziness, headaches, insomnia, and anxiety, approximately one hour after taking a 250 mg tablet of illicit tramadol with alcohol. **Conclusion:** This clinical case highlights acute opioid intoxication linked to the consumption of Tramadol in an illicit form, also known as “*Kadhafi*.”

Keywords

Adolescent, Illegal Tramadol, Poisoning, Glossoptosis, Macroglossia, Ivory Coast

1. Introduction

Opioid poisoning is now a global public health crisis. According to the World

Health Organization (WHO), more than 58 million people use opioids, with a growing proportion using them for non-medical purposes. Nearly 110,000 overdose deaths were recorded in 2019, mainly linked to fentanyl and tramadol [1]. The chemical formula for tramadol is $C_{16}H_{25}NO_2$, with a structure similar to that of morphine or codeine. Tramadol is a chiral molecule, with a racemic mixture whose enantiomers have a noradrenergic mechanism of action and opioid and serotonergic analgesic effects [2]. The effects of tramadol are stimulating and euphoric, which are often sought after by adolescents in their quest for improved performance at work, sexual performance, or relaxation [3]. As a result, the misuse of opiates is on the rise, particularly among adolescents and young adults, with serious consequences for mental and physical health and social life.

In Africa, the phenomenon is reaching alarming proportions. Tramadol, a relatively accessible opioid drug, is trafficked and used extensively in several West African countries, including Nigeria, Ghana, Niger, Côte d'Ivoire, and Togo [4] [5]. It is often used as a performance-enhancing drug or anxiolytic and consumed in tablet form or dissolved in homemade drinks. Its sale on the informal market encourages the proliferation of illicit forms, with high concentrations or combined with other psychoactive substances (PAS, any substances capable of altering brain function [6]), thereby increasing the risk of acute intoxication [7].

In Côte d'Ivoire, although epidemiological data remain limited, there has been an increase in the consumption of tramadol among adolescents and young adults. The version known as "*Kadhafi*", with a high dose of 225 mg or 250 mg, is commonly sold on the black market. Its use is frequently accompanied by psychiatric, neurological, and addictive complications, and, more rarely, by severe orofacial effects that are still poorly documented [7] [8].

It was in this context that a case was reported on 24 June 2025 in Bingerville (population estimated at 204,656 in 2021) [9]. It is part of Greater Abidjan, the economic capital of Côte d'Ivoire. It was in this municipality that a 19-year-old boy presented with acute glossoptosis (an orofacial abnormality defined by a posterior fall of the tongue towards the oropharynx, which can lead to partial or complete obstruction of the upper airways) [10]-[12], macroglossia (abnormal enlargement of the tongue, which may be congenital) [13], with breathing difficulties, after consuming 250 mg of illicit Tramadol. It was these physiological and psychological reactions that sparked our interest in this study, the overall objective of which was to investigate opioid intoxication in this case.

2. Methods

This was a descriptive clinical case study conducted from 1 to 25 July 2025 at the Addiction and Mental Health Department of the National Institute of Public Health/Abidjan, with an investigation phase carried out from 1 to 3 March 2025 in the commune of Bingerville (Côte d'Ivoire).

The following was carried out to collect information:

- 1) an individual interview, using a structured questionnaire with closed and

open questions, the aim being to collect as much data as possible.

2) direct observation of clinical manifestations.

3) Access to medical information and reports from other professionals involved in the care of the patient or from the patient's family and friends.

4) Visits to health centres in the municipality of Bingerville and the surrounding area to search for cases.

2.1. Variables of Interest

1) Sociodemographic characteristics: age, gender, place of residence, educational level, occupation.

2) Somatic and addiction-related clinical variables concerning the case: glossoptosis and/or macroglossia, stomatological malformations, perinatal complications, psychomotor development of the case, chronic diseases, medications currently being taken, convulsions of the case, head trauma, central nervous system infections, meningitis, epilepsy, neurological disorders of the tongue, asthma, use of herbal remedies, etc.

3) Symptoms to observe: Presence of glossoptosis and/or macroglossia, duration, recurrence of the phenomenon, manifestations of glossoptosis and/or macroglossia after consumption of a product, associated symptoms, symptoms experienced before and after the phenomenon of glossoptosis and/or macroglossia, acute dystonia of the tongue, signs of abuse and dependence on psychoactive substances, side effects, behavioral disorders, breathing difficulties, convulsions, and withdrawal symptoms.

4) Mental health variables: Psychological history: (suicidal thoughts, suicide attempts, self-harm, sexual abuse, maltreatment, conflict with parents, delinquency, history of psychiatric disorders). Symptoms to observe before the onset of the phenomenon: stress, frustration, emotional conflict, insomnia, sadness, hallucinations, delirium, and other symptoms. Psycho-emotional state at the time of the study: social withdrawal, anxiety, fear, sadness, insomnia, irritability, joy, incoherent speech, hallucinations, guilt, and perceived level of social support.

5) Environmental variables: group of friends, family (conflict, family stress), precarious situations, etc.

6) Representations of the phenomenon and reactions of witnesses (group of friends, parents).

2.2. Laboratory Procedures

A toxicological urine test (rapid test available in our context) was performed for the case. Chromatogram or spectrogram analyses were unavailable. Data from previous paraclinical investigations of the cases were collected.

2.3. Data Management and Processing

A simple description of the case was made based on clinical observations and paraclinical data.

2.4. Ethical Considerations

In order to carry out this research, it was essential to have an official framework that respected human rights, ethics, and professional conduct in research. An investigation authorisation from the Ministry of Health and Universal Health Coverage (MSHPCMU) via the National Mental Health Programme facilitated our access. Ethical aspects such as the right to anonymity and confidentiality of respondents were taken into consideration. The informed consent of respondents was mandatory prior to the investigation.

3. Results (Observations)

3.1. Psychobiography and Context of the Investigated Event

This is DN, a 19-year-old male, single, residing in Bingerville, specifically in the SICOGI 1 neighbourhood, with a higher education level (1st year of university) (**Table 1**).

Table 1. Sociodemographic profile.

Sociodemographic Profile	Description
Gender	Male
Age	19
Single	Yes
Level of education	Higher
Neighbourhood of residence	Socogi 1, Bingerville
Occupation	Unemployed

He has no known or documented medical, surgical, or criminal history. However, he admits to having used cannabis and cigarettes in the past, from 2017 to 2021 (**Table 2**).

Table 2. History.

History	Description
<i>Medical and surgical</i>	<i>No particularities</i>
Glossoptosis	No
Macroglossia	No
Meningitis	No
Neurological disorders (languages)	No
Stomatological disorders	No
Head injury	No
Other	No
<i>Addiction specialists</i>	
Illegal tramadol (<i>Kadhafi</i>)	Yes

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Alcohol	Yes
Tobacco	Yes
Cannabis	Yes
<i>Psychiatric</i>	<i>No particularities</i>
<i>Legal</i>	<i>No particularities</i>

The circumstances surrounding his birth were unremarkable, with good psychomotor development. After an average academic career, he voluntarily dropped out of his ^{first} year of university due to a lack of motivation. This led to a conflictual relationship with his biological parents, particularly his father. In terms of lifestyle, he did not take any medication but had been drinking alcohol occasionally since 2017 and had been taking an overdose of 250 mg of tramadol, known as the “*Kadhafi*” drug, since March 2025 in search of pleasure and sexual performance. Also frequented a group of friends who used psychoactive substances (PAS) and consumed them. “*It was my friends who advised me,*” he said. The first time he took the drug “*Kadhafi*”, often in combination with alcohol, there were no apparent problems. He took the drug twice a week, one tablet at a time (**Table 3**).

Table 3. Psychobiography and lifestyle.

Psychobiography and Lifestyle	Description
Congenital malformations	No
Psychomotor development	Normal
SPA user	Yes
Consumption of decoction (traditional)	No
Long-term treatment	No
Comorbidities (chronic diseases)	No
User of “ <i>Kadhafi</i> ” since March 2025	Yes
Consumption of “ <i>Kadhafi</i> ” on 24 June 2025 in combination with alcohol (wine), approximately 3 glasses.	Yes
Motivations related to sexual performance	Yes
Motivations related to pleasure	Yes
Clinical manifestations in the two friends who consumed the drug <i>Kadhafi</i>	No
Group of friends who used SPA (<i>Kadhafi</i>)	Yes
Glossoptosis in one friend in the past	No

On 1 July 2025, he was seen for the first time in a psychiatric consultation, accompanied by his father and mother with a referral letter from the emergency department of Cocody University Hospital for intermittent protrusion of the

tongue developing in the context of psychoactive opioid substance use, such as the drug “*Kadhafi*.”

3.2. Interview, Clinical, and Paraclinical Data

Before being admitted to the mental health department on 1 July 2025, the subject had consumed 250 mg of adulterated Tramadol in tablet form 10 minutes before drinking the wine on 24 June 2025, *i.e.*, seven days earlier. On that day, he was at the home of a friend’s parents; there were four of them, and only he and two friends consumed the drug “*Kadhafi*.” He was the only one who, about an hour after returning to his family home, presented with an increase in the volume of the tongue (macroglossia) with protrusion associated with dizziness and headaches (Table 4). His parents were alerted and took him to a private clinic, where he was kept under observation for four hours and received treatment consisting of benzodiazepine, with favourable results. Two days after this episode, our patient presented with glossoptosis at the back of the throat. The tongue was mobilised using the mother’s hair clip. The child was then admitted to the emergency department at Cocody University Hospital, where he was successfully treated with corticosteroids (normal tongue mobility restored) for two days (Table 4). Opiates were also found in his urine. Forty-eight hours later, he developed macroglossia with intermittent protrusion of the tongue, which was stabilised in the emergency department of Cocody University Hospital. He also presented with insomnia, anxiety and the feeling of reliving previous symptoms. Physical examinations were normal, and given the psychological symptoms and opioid use, he was referred to the Addiction and Mental Health Department in Abidjan for treatment (Table 4).

The somatic, addiction, and psychiatric examinations carried out on 1 July 2025 revealed the following symptoms:

Macroglossia with intermittent protrusion (three times) of the tongue, breathing difficulties, and anxiety. No symptoms prior to consuming illicit tramadol and alcohol. No neurological tongue disorders, no stomatological disorders, no convulsions, no behavioural disorders, no symptoms of dependence, and no other psychiatric symptoms (Table 4).

The two other friends who consumed the drug “*Kadhafi*” did not present with glossoptosis or macroglossia; they were known consumers of SPA, including “*Kadhafi*”. None of the patient’s friends had previously experienced glossoptosis or macroglossia after consuming the drug “*Kadhafi*”. However, they could not be interviewed during the investigation, as they refused to participate.

3.3. Toxicological Examination of Urine

The qualitative urine test was positive for opiates in the emergency room upon admission (Day 1).

The follow-up test was positive for benzodiazepines and negative for opiates and other PAS during the addiction and mental health consultation (Day 7) (Ta-

ble 4). Quantitative urine tests were not available, making it impossible to assess the dose-response relationship. Blood samples and toxicological analyses could not be performed in our setting.

Table 4. Clinical profile.

Clinical and Paraclinical Signs	Description
Insomnia before consuming “ <i>Kadhafi</i> ”	Present
Signs of abuse or intoxication after consumption of the drug “<i>Kadhafi</i>”	
Duration of onset	Approximately 1 hour after taking one 250 mg Tramadol tablet followed by 3 glasses of wine
Dizziness	Present
Headaches	Present
Anxiety	Present
Glossoptosis	Present
Macroglossia	Present
Respiratory difficulties	Present
Angioedema	Absent
Signs of dependence	Absent
Withdrawal symptoms	Absent
Psychiatric signs after consumption	
Feeling of the tongue falling	Present
Fear	Present
Guilt	Present
Urine toxicology test	
Opiates (D1)	Positive
Benzodiazepine	Positive
Opiates and other psychoactive substances (D7)	Negative

3.4. Treatment and Progression

Treatment consisted of corticosteroids to manage inflammation and potential allergic reactions, antibiotics as prophylaxis against infection, muscle relaxants, and anticholinergics (trihexyphenidyl) to normalize tongue motility, benzodiazepines for anxiety, alimemazine to manage insomnia, and supportive psychotherapy. Following this, a positive outcome was observed, resulting in a clear regression of symptoms (Table 5).

Table 5. Therapeutic and evolutionary profile.

Therapeutic and evolutionary profile	Description
Manual tongue-holding intervention	Yes
Corticosteroid	Yes
Benzodiazepine	Yes
Antibiotic	Yes
Muscle relaxant	Yes
Anticholinergic	Yes
Alimemazine	Yes
Psychotherapy	Yes
Complication	No
Progress (2 weeks)	Favourable

4. Discussion

The case investigated concerns a 19-year-old male, single, with higher education, unemployed, who frequently consumes adulterated tramadol with friends, often in combination with alcohol. This profile matches that most frequently observed in studies on problematic tramadol use among young people. Adolescents and young adults are a population particularly vulnerable to opioid abuse, whether consumed alone or in combination with other substances [9] [14] [15]. According to the study by N'Djambara *et al.*, the age of first use is around 13 years [8]. Similarly, the work of Sarah Caupp *et al.* reported that 60.1% of opioid poisonings involved subjects aged 18 to 24, mostly male, often with co-use of benzodiazepines and alcohol [15]. Duke *et al.* highlighted the concept of co-ingestion among young tramadol users [16]. The main motivation in the case studied was the pursuit of sexual performance. N'Djambara *et al.* in Togo noted this motivation among tramadol users [8].

In this case, there was a history of addiction to psychoactive substances (Table 3). Psychomotor development was normal, and no congenital orofacial malformations such as Pierre Robin syndrome or other chronic comorbidities were reported. Acute toxicity appeared within 60 minutes of taking a 250 mg tablet of illicit tramadol and alcohol, with symptoms such as dizziness, headaches, and anxiety (Table 4). These clinical manifestations, consistent with tramadol intoxication, are corroborated by several studies [17]-[21].

Although convulsions are frequently reported in tramadol abuse [17] [22], no signs of convulsive seizures were observed here. However, unusual but clinically serious signs were noted: glossoptosis, macroglossia, glossitis, and breathing difficulties (Table 4). These signs are rare in the literature on opioids and seem to suggest an atypical presentation, but one potentially linked to the consumption of the drug “*Kadhaf*”, a substance identified locally as a diverted or illicit form of tramadol overdosed at 225 mg or 250 mg. In his study, Kouadio A reported the

tongue falling back into the throat (glossoptosis) after the use of psychoactive substances consisting of overdosed “*Kadhafi*” tramadol sold on the black market [7]. In our study, glossoptosis and macroglossia were only present in the case investigated, with no other similar cases reported in the municipality of Bingerville.

The two friends who consumed the drug “*Kadhafi*” did not present with glossoptosis, macroglossia, or other signs of acute intoxication. This could be explained by their acquired tolerance. This contrast illustrates both the inter-individual variability of pharmacological reactions, *i.e.*, individual metabolic differences, and possible variations in the composition of the tablets consumed.

The toxicological examination of urine carried out on Day 1 confirmed the presence of opiates, supporting the hypothesis of acute tramadol intoxication. The test was negative on Day 7, in line with data in the literature indicating that tramadol is detectable for approximately three days after ingestion [17] [23]. The presence of benzodiazepine in the urine on Day 7 was likely due to previous treatments (Table 5).

Complete resolution of symptoms after two weeks, multidisciplinary therapeutic intervention including supportive psychotherapy, administration of corticosteroids to manage inflammation and potential allergic reactions, antibiotics as prophylaxis against infection, muscle relaxants, and anticholinergics (trihexyphenidyl) to normalise tongue motility, benzodiazepines for anxiety, alimemazine to manage insomnia, and manual intervention to prevent respiratory obstruction by the tongue, contributed to a favourable outcome (Table 5). These measures helped to limit serious complications, particularly the risk of asphyxia.

The patient was part of a group of friends who used psychoactive substances, with a history of glossoptosis reported in one of them. Belonging to such a group, where psychoactive substance use is normalized, is a major risk factor for the initiation of risky behavior. Indeed, the influence of peer groups and friends increases, reaching a peak during adolescence [24].

Limitations and Perspectives

Our results cannot be generalized; this is a case study of a health event that has been very little documented, often due to limited biotechnical investigation resources in our context, hence the need for further in-depth pharmacological studies and quantitative studies.

5. Conclusion

This clinical case highlights acute opioid poisoning linked to the consumption of tramadol in an illicit form known locally as “*Kadhafi*” and co-ingested with alcohol. This case illustrates the diversity and severity of atypical clinical presentations associated with new forms of psychoactive substance use among adolescents. It highlights the need to raise awareness among young people, train health professionals to recognize the signs of poisoning, and establish a local epidemiological surveillance system to prevent or detect cases at an early stage.

Conflicts of Interest

The authors declare no conflicts of interest.

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