INPLASY PROTOCOL

To cite: Dioguardi. The clinical manifestations of cocaine-induced midline destructive lesion: a real challenge for Maxillo-Facial Surgeons, Mapping Evidence Review. Inplasy protocol 2022100048. doi: 10.37766/inplasy2022.10.0048

Received: 13 October 2022

Published: 13 October 2022

Corresponding author:
Mario Dioguardi

mario.dioguardi@unifg.it

Author Affiliation:
University of Foggia.

Support: **University of Foggia.**

Review Stage at time of this submission: **Risk of bias assessment.**

Conflicts of interest:
None declared.

The clinical manifestations of cocaine-induced midline destructive lesion: a real challenge for Maxillo-Facial Surgeons, Mapping Evidence Review

Dioguardi, M[1].

Review question / Objective: **The objective of the current mapping review was to characterize, from the authors' experience and literature data, the great variety of oral and maxillo-facial lesions produced by cocaine use and abuse.**
Eligibility criteria: **The search for sources was directed towards all retrospective, prospective and randomized studies, case reports and case series that have described cases of oral and maxillofacial lesions produced by the use and abuse of cocaine.The question asked was: What are the characteristics of oral and maxillofacial lesions induced in patients who use and abuse cocaine?The aim is therefore to map the characteristics and the various typological differences of oral and maxillofacial lesions induced by cocaine. The exclusion criteria were: all studies with abstracts not in English and that no clear English translation was available; studies that did not report the description of cocaine lesions in the oro-maxillofacial region; studies in which a differential diagnosis was not argued; literature and systematic reviews (used only as Bibliographic sources and not to repeat identical review questions)Therefore, among the potentially eligible articles it was decided to include those studies written in English that described cases of oral or maxillofacial lesions closely related to the use or abuse of cocaine.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 October 2022 and was last updated on 13 October 2022 (registration number INPLASY2022100048).

INTRODUCTION

Review question / Objective: **The objective of the current mapping review was to characterize, from the authors' experience and literature data, the great variety of oral and maxillo-facial lesions produced by cocaine use and abuse.**

Condition being studied: According to the data of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), cocaine is the second most used substance in Europe among the general population, after cannabis. Specifically, 4.8% of the population between 15 and 64 years (about 13,8 million people) has used cocaine at least once in their life. Consumption seems particularly high especially in Spain, the United Kingdom, Italy, Holland, Denmark and Ireland [1]. The epidemiological data manifest a growing trend in cocaine use among 15–34 year-olds since the 1990s in most European countries.

Focusing on consumption among young people (15-34 years), compared to the adult population the prevalence of cocaine use is greater, with about 8 million young people claiming to have used it at least once in a lifetime, and 2,2 million (2,1%) during the last year (2021). In two countries, the prevalence of use over the course of life varies over 10% (United Kingdom and Spain), compared to one European average prevalence of 5.9% .

Cocaine users often associate alcohol and tobacco use as well other drugs, including cannabis and other stimulants (poly-abuse). The use of cocaine in younger generations, but also in adults, can lead a series of countless diseases both in the psychic and physical fields. Many medical professionals come into contact with patients who have signs and symptoms of various orders and degrees, and which can affect different systems: the cardio-circulatory system, the Central Nervous System and the mechanisms of psychic functioning, the respiratory system and in particular the upper nasopharyngeal ways.

The main way of taking the substance, in fact, occurs through endonasal aspiration of the cocaine powder. There is also the possibility of smoking such substance and, in some cases, to breath the vapors specially generated by a derivative of cocaine (crack) which allows greater solubilization [4].

This involves, if the intake is repeated, a series of signs and symptoms resulting from the direct action of cocaine on the vessels and on the nasopharyngeal mucosa, with peculiar alterations (also neoplastic).

Nasal septa perforations represent the most common complication of cocaine snorting, being present in about 5% of abusers. A cocaine-related syndrome, named cocaine-induced midline destructive lesion (CIMDL), characterized by centrofacial midline necrosis, has been described in scientific international literature. Cocaine produces a sympathetic-mediated vasoconstriction causing ischaemia of cartilage and mucosa, while powdered substances such as talc, mannitol, lactose, amphetamines and borax act like chemical irritants on the mucosal lining, leading to inflammation and ulceration.

As for other medical specialists, it is also important for maxillo-facial surgeons, when investigating patients, consider the possibility that some disorders, such as persistent nasal congestion, respiratory difficulty due to an obstructive upper respiratory tract, the constant presence of endonasal crusts with lesions, as well bleeding, epistaxis, ulcerations and perforations of the palate, possibly be associated with psycho-behavioral disorders (in particular depressive states, poor control of aggression, eating disorders with a tendency to anorexia, etc.) or cardio-circulatory disorders (arrhythmias, hypertension, etc.), are associated to the use of cocaine.

In the differential diagnosis of centrofacial destructive processes, CIMDL can be considered the first diagnostic choice in developed Countries.

METHODS

Search strategy: The keywords used in the databases were: Cocaine AND Oral; Cocaine AND Maxillo AND nasal The keywords used on PubMed are reported in detail for a consistent reproducibility of the search: Search: cocaine AND (nasal OR oral OR maxillo) Sort by: Most Recent ("cocaine"[MeSH Terms] OR "cocaine"[All Fields] OR "cocaine s"[All Fields] OR "cocaines"[All Fields] OR "cocainics"[All Fields]) AND ("nasalance"[All Fields] OR "nasality"[All Fields] OR "nasalization"[All

Fields] OR "nasalized"[All Fields] OR "nasally"[All Fields] OR "nose"[MeSH Terms] OR "nose"[All Fields] OR "nasal"[All Fields] OR "nasals"[All Fields] OR ("mouth"[MeSH Terms] OR "mouth"[All Fields] OR "oral"[All Fields]) OR "maxillo"[All Fields]) Translations :cocaine: "cocaine"[MeSH Terms] OR "cocaine"[All Fields] OR "cocaine's"[All Fields] OR "cocaines"[All Fields] OR "cocainics"[All Fields]; nasal: "nasalance"[All Fields] OR "nasality"[All Fields] OR "nasalization"[All Fields] OR "nasalized"[All Fields] OR "nasally"[All Fields] OR "nose"[MeSH Terms] OR "nose"[All Fields] OR "nasal"[All Fields] OR "nasals"[All Fields]; oral: "mouth"[MeSH Terms] OR "mouth"[All Fields] OR "oral"[AllFields].

Participant or population: Patients who have abused cocaine and who present oral lesions or in the maxillofacial region.

Intervention: lesions in the maxillofacial area from cocaine abuse.

Comparator: Not applicable.

Study designs to be included: case report, case series, RCT, retrospective study, prospective study.

Eligibility criteria: The search for sources was directed towards all retrospective, prospective and randomized studies, case reports and case series that have described cases of oral and maxillofacial lesions produced by the use and abuse of cocaine.The question asked was: What are the characteristics of oral and maxillofacial lesions induced in patients who use and abuse cocaine?The aim is therefore to map the characteristics and the various typological differences of oral and maxillofacial lesions induced by cocaine.The exclusion criteria were: all studies with abstracts not in English and that no clear English translation was available; studies that did not report the description of cocaine lesions in the oro-maxillofacial region; studies in which a differential diagnosis was not argued; literature and systematic reviews (used only as Bibliographic sources and not to repeat identical review questions) Therefore, among the potentially eligible articles it was decided to include those studies written in English that described cases of oral or maxillofacial lesions closely related to the use or abuse of cocaine.

Information sources: To search for the studies in the information sources, 2 reviewers (F.S., and M.D.)) were involved, who searched for and subsequently selected the potentially eligible records in the electronic databases. The identified records are shown in different tables with the related keywords and compared. The search was carried out on 3 different databases: the Scopus PubMed database, Science direct; and one register: Cochrane Central Register of Controlled Trials. gray literature (abstacts of conferences, proceedings and non-peer-reviewed materials) were searched on Open Gray, Google Scholar and science direct. These sources were consulted in order to identify case reports and more generally studies not otherwise identifiable. The search and selection procedure therefore involves the following steps decided in advance by the 2 reviewers: decision of the keywords to be used and of the databases, autonomous search of the records with the data reported in 2 different tables. Duplicate results were removed using EndNote 9 software, study overlays that could not be uploaded to EndNote were manually removed after the screening step. Screening of potentially suitable articles (through title and abstract analysis) and choice of articles to include.

Main outcome(s): The data from extracts from the included articles were decided in advance by the 2 reviewers and concerned: the first author of the study, the date of publication, the country in which the cases were described, the number of patients, gender, age, type or location of the lesion, ANCA positivity, years of cocaine abuse.

Quality assessment / Risk of bias analysis: The risk of bias was evaluated using a tool relating to case reports. The tool used for case reports is the JBI critical appraisal

checklist for case reports. The evaluation was performed by a researcher (M.D.) after the data extraction and inclusion phase of the studies.

Strategy of data synthesis: The data will be reported and summarized in atable.

Subgroup analysis: Not applicable.

Sensitivity analysis: Not applicable.

Country(ies) involved: Italy.

Keywords: cocaine-induced midline destructive lesion (CIMDL); centrofacial midline necrosis; glass and clay pipes; heat damages; oral and maxillofacial manifestations form cocaine.

Contributions of each author:

Author 1 - Mario Dioguardi.
Email: mario.dioguardi@unifg.it