

# **Anaesthesia and Cocaine Abuse**

**Essay**

**Submitted in Partial Fulfillment of  
the Master Degree (M.Sc) in  
Anaesthesia**

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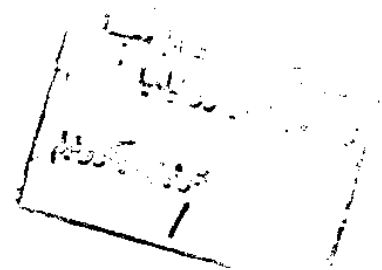
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## *Introduction*

Substance abuse is a critical issue worldwide nowadays. Cocaine is becoming widely recognized as one of the most dangerous illicit drugs in common use today.

Since cocaine's introduction to Western medicine in the 1880's it remains for the Anaesthesiologist a unique drug, the first local anaesthetic synthesized and the prototype of a class of drugs interacting with the central nervous system.

This study will illustrate cocaine's history and review the Pharmacokinetics and dynamic properties of the drug, with special references to its local anaesthetic and sympathomimetic actions; its preparation, uses and adverse effects on body systems.

The number of Emergency Room visits related to cocaine abuse is steadily rising. The correct diagnosis through physical examination, lab techniques and radiological procedures can ensure the right management of a patient with cocaine toxicity or overdose.

Care must be taken by the Anaesthesiologist in handling the cocaine abusing patient presenting for surgery since cocaine as a drug alters the normal physiologic response to anaesthesia. Cocaine also interacts with many drugs in common anaesthetic practice. This study will highlight a number of the pathophysiologic manifestations of cocaine abuse both in chronic use and overdose cases and the proper management procedures for cocaine's toxic effects on emergency patients or chronic abusers.





## Chapter I

- \* Substance Dependence.
- \* Substance Abuse.
- \* History of Cocaine.
- \* Pharmacology of Cocaine.
  - Physicochemical Properties.
  - Absorption
  - Fate in the body
  - Excretion
- \* Actions of Cocaine.
  - (1) Local anesthetic action.
  - (2) Sympathetic nervous system.
  - (3) Central actions.
  - (4) Peripheral actions
  - (5) Cardiovascular system.
  - (6) Endocrinal system.
  - (7) Respiratory system.
  - (8) Immune system.
  - (9) Brain and psychiatric well - being.
  - (10) Gastro - intestinal tract.
  - (11) Blood and plasma constituents.
  - (12) Gonadal function
  - (13) Reproduction.
  - (14) Other body systems.
  - (15) Poly - substance abuse.
- \* Uses and preparations.
- \* Pharmacodynamic interactions.



(4) There is a persistent desire or unsuccessful effort to cut down or control use.

(5) A great deal of time is spent in activities necessary to obtain the substance.(e.g visiting multiple doctors or driving long distances) , use the substance (e.g chain-smoking) or recover from its effect.

(6) Important social , occupational , or recreational activities are given up or reduced because of substance use.

(7) The substance use is continued despite knowledge of having a persistent , or recurrent physical or psychological problems that is likely to have been caused or exaggerated by the substance. (e.g. current cocaine use despite recognition of cocaine - induced depression).

### **Substance Abuse :**

Manifested by one or more of the following in a 12 month period.

(1) Recurrent substance use resulting in a failure to fulfill major role obligations at work , school or home. (e.g. repeated absence or poor work performance related to substance use , suspensions, expulsions from school, neglect of children or house - hold).

(2) Recurrent substance use in situations in which it is physically hazardous. (e.g. driving an automobile or operating a machine when impaired by substance use)



(3) Recurrent substance related legal problems. (e.g. arrest for substance - related disorderly conducts)

(4) Continued substance use despite having persistent or recurrent social or interpersonal problem caused or exacerbated by the effect of the substance.

N.B. The symptoms have never met the criteria for substance dependence for this class of substance.

(DSM IV 94)

