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REVIEW ARTICLE ON OPIOIDS AND OPIOID ACTIVITY IN HUMAN BEINGS

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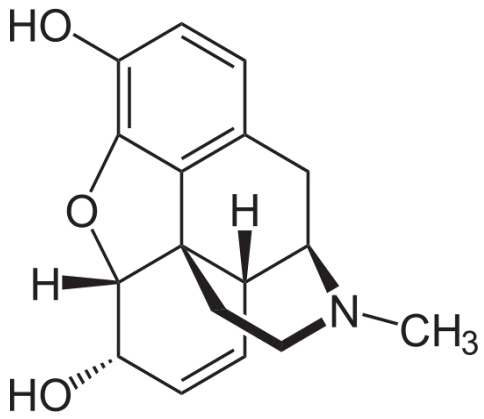
ABSTRACT: Opioids are the oldest known drugs, which are used for the pain relief and they are addictive when used outside the doctors proscription. This may lead to psychological and physical dependence on opioids and they may cause opioid overuse disorder. It might be difficult to come out of this disease, as they give intense happiness and pleasure while consuming . They cause lots of side effects on human beings such as cold , cough , constipation, diarrhea etc. and also cause death . It also effects on pregnant womens who cosume it outside the doctors prescription . Naloxone is used for the treatment of opioid overdose.

Key words: opioids, Naloxone, narcotic, drugs

INTRODUCTION

Opioids are the clas of drugs [1] , they act upon opioid receptors to producemorphine like effects.[2]. They are used for pain relief, and for anesthesia. They are also used for the suppression of diarrhea, cough, etc.[1]



[2]

They are commonly used for pain relief [2], they may be very powerful painkillers but they are highly addictive.[1]. Opioid drug binds to the opioid receptors present in the brain , spinal cord , and other parts of the human body . They convey your brain that you're not in pain . They are used to treat from moderate to severe pain that may not respond well to other pain medications .[1]

History of Opioids

A sample of raw opium [2]

Opioids are the world's oldest known drugs. There seeds were found at Cueva De Los Murcielagos in the Iberian Peninsula Ana La Marmotta in the Italian Peninsula. They were used since 4th century BC for medical, recreatioal and religious purposes.[2]

- **Types of opioids -** common types of opioids are oxycodone, hydrocodone, morphine,and methadone. Fentanyl is a type of opioids which is a synthetic pain reliever. [1]
- **Opioids are addictive because** they have high addiction potential . They not only relieve the pain but create a sense of intense happiness , in which many people find it pleasurable.[2]

Over use of Opioids can lead to psychological and physical dependence, humans are psychologically dependent on this, when these opioids are Central to their thoughts, activities and emotions.[2] This gives humans the cravings to get addicted and then they start facing the negative consequences.with physical dependence upon opioids, the human body gets adapted for the presence of this Opioid drug , and this becomes addictive and this may cause negative consequences.

They experience the opioids withdrawal symptoms once they stop taking the drug. These symptoms are oftenly unpleasant, they may have to take more drugs to stop the withdrawal symptoms.[1] Everyone who is prescribed by the doctor will not be addicted to opioids. When the prescription is carefully followed by humans , there is less chance of becoming addicted.

Opioids are very much useful for curing acute pain through short-term use. When opioids are used outside of the instructions in the prescription, there is a risk of increase in opioid use disorder.[2] Patients with opioid problems may have extended periods of abstinence and usually do well . But there is a huge risk of accidental overdose , trauma , suicide , and infectious diseases.[3]

Side effects of Opioids - constipation , dizziness , nausea , volmiting , respiratory depression , muscle rigidity , immune system and hormonal dysfunctiona , muscle jerks , itchyskin , dry mouth , arrhythmia , etc [2]

• **Effects on eyes -** opioids causes low light, migraine , stimulatory medications , trauma , large pupils , pupillary contractions , miosis . This indicates that the person has consumed opioids . [2]

• **Long-term effects -** Sleep disordered breathing , risk of bone fractures , hypothalamic-pituitary-adrenal disregulation. [2]

Opioid receptors - opioids produce effects mainly on the neurons by acting upon the reciptors , which are located on neuronal cell membranes.

There are majorly three types of opioid receptors,

1)mu(m).
2) delta(d).
3) kappa(k).

These were defined pharmacologically several years ago . These receptors belongs to large family which possess seven transmembrane-spanning domains of aminoacids[4]

• **Opioids action on neurons sites -** Opioids have actions on two sites , they are presynaptic nerve terminal and postsynaptic neuron terminal .

The postsynaptic actions of opioids are inhibitory but the other one has the action to inhibit neurotransmitter release, this is the major effects on the nervous system . [4]

• **Medical uses of opioids -**

Pain - In low doses of opioids and combined with one or more other drugs , is commonly available without a prescription and it can be used to treat mild pain . Other opioids are usually used for the relief of moderate to severe pain .[2]

Acute pain - These are effective for the treatment of acute pain (such as surgery) . For immediate relief of moderate to severe acute pain , they are frequently the treatment of choice due to their rapid onset , efficacy and reduced risk of dependence . In many cases they are a successful long-term care strategy for those with chronic cancer pain .[2]

Cough - was once viewed as the "gold standard" in cough suppressants, but this position is now questionwas once viewed as the "gold standard" in cough suppressants, but this position is now questioned.Some recent placebo-controlled trials have found that it may be no better than a placebo for some causes including acute cough in children.Thus, it is not recommended for children. Additionally, there is no evidence that hydrocodone is useful in children.ed.Some recent placebo-controlled trials have found that it may be no better than a placebo for some causes including acute cough in children.Thus, it is not recommended for children. Additionally, there is no evidence that hydrocodone is useful in children.[2]

Diarrhea and constipation - In case of diarrhea-predominate irritable bowel syndrome, opioids may be used to suppress diarrhea. Loperamide is a peripherally selective opioid available without a prescription used to suppress diarrhea.The ability to suppress diarrhea also produces constipation when opioids are used beyond several weeks.Naloxegol, a peripherally-selective opioid antagonist is now available to treat opioid induced constipation.[2]

Shortness of breath - Opioids will help with shortness of breath particularly in advanced diseases such as cancer and COPD among others.However, findings from two recent systematic reviews of the literature found that opioids were not necessarily more effective in treating shortness of breath in patients who have advanced cancer.[2]

Hyperalgesia - Opioid-induced hyperalgesia (OIH) has been evident in patients after chronic opioid exposure.

Opioids are being used more frequently in the management of non-malignant chronic pain. This practice has now led to a new and growing problem with addiction and misuse of opioids.Because of various negative effects the use of opioids for long-term management of chronic pain is not indicated unless other less risky pain relievers have been found ineffective. Chronic pain which occurs only periodically, such as that from nerve pain, migraines, and fibromyalgia, frequently is better treated with medications other than opioids. Paracetamol and nonsteroidal anti-inflammatory drugs including ibuprofen and naproxen are considered safer alternatives.They are frequently used combined with opioids, such as paracetamol combined with oxycodone and ibuprofen combined with hydrocodone , which boosts the pain relief but is also intended to deter recreational use.[7]

• **Opioid use disorder -** There are many patients who use opioids regularly as there are patients diagnosed with obsessive compulsive disorder , arthritis , and epilepsy in the United States.[4]

• **Opioid use disorder for pregnant women -** Infants born to woman who use opioids during pregnancy should be monitored by a pediatric care provider for neonatal abstinence syndrome[8] .

Unique needs of pregnant woman with an opioid use disorder, health care providers will need to consider modifying some elements of prenatal care testing.[9]

Opioid overuse can also lead to death because of the effects of opioids on the parts of the human brain which regulates breathing .[10]

• How to prevent opioid overuse ?

Naltrexone is useful to prevent relapse. Naloxone is used for the treatment of opioids overdose.

Nonpharmacologic behavioral therapy is also beneficial of the control of opioid overuse. Patients with opioid use disorder often get benefited from twelve-step programs, peer support, and mental health professionals , individual and group therapy.[4] Opioids abuse has been increased in the last decade, physicians are also increasingly prescribing the opioid analgesics for the non-cancerous chronic pain. [10]

CONCLUSION : As opioids has both advantages and disadvantages . We can use it as an advantage to reduce pain when consulted by doctor, instead of overuseing opioids and getting side effects by them .

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