



NARCOTICS AND NON-NARCOTICS DRUGS -REVIEW OF DRUGS AND BENEFITS

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ABSTRACT :

Narcotic analgesics, also known as opiates or opioids, are used to relieve moderate-to-severe acute or chronic pain. They work by binding to opioid receptors, which are part of the opioid system that controls pain, pleasurable, and addictive behaviors. The main opioid receptor narcotic analgesics bind to is the mu (μ) receptor. Non-opioids, such as aspirin and paracetamol, control mild to moderate persistent pain and inflammation. Some medications can be given during surgery to reduce post-surgical pain and may be used in combination with other medications or therapies to treat moderate to severe pain.

Painkillers are crucial drugs, and it's essential to be cautious about the type and prescribed doses. Consult a doctor before taking these drugs to avoid addiction, which can be harmful. For instance, sleeping pills can be helpful for insomnia if taken according to the doctor's instructions. However, if the safety limits are crossed, taking extra doses could lead to death.

Narcotics work by blocking pain receptors, with main classes including NSAIDs, corticosteroids, analgesics, and antiepileptics. They are stronger and more effective at reducing pain than nonnarcotics, but are highly addictive and only available by prescription. They can work through various methods, including NSAIDs, corticosteroids, and analgesics

INTRODUCTION :

Pain relief typically addresses both physiological and psychological aspects, with medication and rest being effective treatments for acute pain. Chronic pain, however, can persist for years and can be compounded by hopelessness and anxiety. Opiates, a potent pain-relieving medication, are used to treat severe pain, with opium being one of the oldest analgesics. Morphine, a powerful opiate, is an extremely effective analgesic. However, the use of opiate pain relievers must be monitored due to their addictive nature and the patient's potential to develop a tolerance to them. Overdose can cause potentially fatal respiratory depression, and side effects like nausea and psychological depression upon withdrawal limit their usefulness. Tylenol, a nonnarcotic anti-inflammatory analgesic, works by blocking the activity of COX enzymes, which are responsible for the conversion of arachidonic acid to prostaglandins, which enhance sensitivity to pain. Acetaminophen also prevents the formation of prostaglandins, but its activity appears to be limited primarily to the central nervous system. N-methyl-D-aspartate receptor (NMDAR) antagonists, such as dextromethorphan and ketamine, may be used in the treatment of certain forms of neuropathic pain, such as diabetic neuropathy, by blocking NMDARs involved in nociceptive transmission.

CLASSIFICATION OF DRUG :

1. Narcotic Analgesics

These types of analgesic drugs are taken for medical use in prescribed doses, where they act by relieving the pain and producing sleep. If the dose of this analgesic drug increases then it can lead to coma, convulsion and finally result in death. Morphine is the most common type of narcotic analgesic used nowadays, they are also referred to as opiates since they are obtained from the opium poppy. Narcotic analgesics or painkillers are mostly used for relieving postoperative pain, cardiac pain and the pain of terminal cancer.

Classification of Analgesics

Analgesics are further classified depending on their mechanism of action. They are:

Paracetamol (acetaminophen)

Nsaids
 COX-2 inhibitors
 Opioids
 Alcohol
 Medical cannabis
 Combinations
 Psychotropic agents
 Analgesic Side Effects

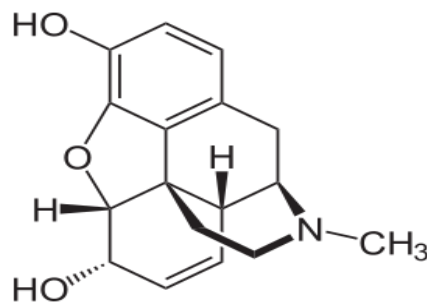
Painkillers are the most important drugs that we use, and so we should always be careful in regard to which type of analgesics we are taking and the doses that are prescribed for them. One should consult a doctor before taking these drugs and not become addicted to them as this addiction can be harmful. Analgesics reduce the effect of pain without causing any mental confusion, paralysis or any other disturbances in the nervous system so that you actually get rid of the pain without any imbalance in the nervous system. The analgesic drugs can act in many ways on the peripheral or central nervous system, but they do not eliminate the sensation of pain as in the case of anaesthetics.

OPIOIDS

Opioid use, even under doctor's supervision, can increase tolerance and dependence, requiring higher doses. High doses can restrict breathing and lead to fatal overdoses. Risks of respiratory depression or arrest are higher in those taking opioids for the first time, taking other medications that interact with opioids, or having a breathing-affecting condition. Understanding opioid use disorder and taking preventative steps is crucial for managing this condition

MEDICAL USES

- Acute pain
- Chronic non-cancer pain
- Diarrhea
- Shortness of breath
- Hyperalgesia



NAME: prototypical opioid

MOA: Opioid Receptor

MOA OF NARCOTICS DRUGS

Mechanism of Action Narcotics:- Act primarily on the central nervous system by binding to opioid receptors (μ , δ , κ), which modulate pain perception and response. These interactions lead to significant analgesia but also to potential side effects and complications.

2.NON NARCOTICS DRUGS

Non-Narcotics Pain Relievers, Also Known As Non-Opioid Analgesics, Work Differently From Narcotics And Generally Have A Lower Risk Of Addiction.

-Acetaminophen (Tylenol): Reduces Fever And Alleviates Mild To Moderate Pain. It Doesn't Have Anti-Inflammatory Property.

-Nsteroidal Anti-Inflammatory Drugs (Nsaids): These Reduce Inflammation As Well As Pain And Fever.

-.Ibuprofen (Advil, Motrin): Commonly Used For Mild To Moderate Pain And Inflammation.

spirin is a medication used to alleviate pain, manage various conditions, and reduce the risk of cardiovascular events in individuals at a high risk.

Aspirin

Often Used For Pain, Inflammation, And Also Has Blood-Thinning Properties. Aspirin is a nonsteroidal anti-inflammatory drug (NSAID) discovered around 4,000 years ago, containing salicylate, a compound found in plants like the willow tree and myrtle. Its use dates back to Hippocrates, who used willow bark for pain relief and fever relief. NSAIDs relieve pain, reduce fever, and lower inflammation in higher doses. They are not steroids, which can cause unwanted side effects. NSAIDs are non-narcotic analgesics, meaning they don't cause insensibility or stupor. Aspirin is a trademark owned by Bayer, and its generic term is acetylsalicylic acid.

MEDICAL USES

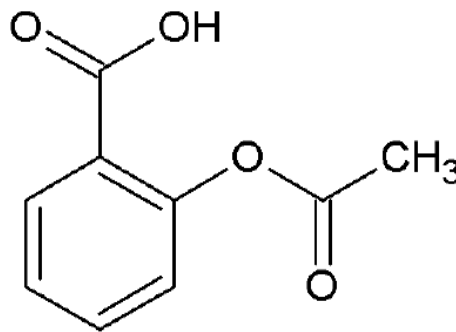
Low-dose aspirin can lower the risk of cardiovascular events in some individuals, but it is not safe for everyone. The FDA recommends using aspirin under doctor's supervision. In high-risk individuals, it can prevent blood clot formation, and doctors may recommend daily low-dose aspirin for those with heart or blood vessel disease, poor blood flow to the brain, high cholesterol, high blood pressure, diabetes, or smoking.

➤ BENEFITS

- rheumatic conditions, including rheumatoid arthritis, osteoarthritis, and other inflammatory joint conditions
- systemic lupus erythematosus
- inflammation around the heart, known as pericarditis

➤ The most common side effects of aspirin are:

- stomach or gut irritation
- indigestion
- nausea



NAME:ASPIRIN

MOA: Prostaglandin G/H synthase 1

Inhibitor

- 3-hydroxy-3-methylglutaryl-coenzyme A reductase

Inhibitor

- Prostaglandin G/H synthase 2

Risks and Challenges

“While narcotic and non-narcotic drugs offer substantial health benefits, there are risks associated with misuse, addiction, and environmental harm, including:”

- **Drug misuse and addiction:** narcotic drugs have a high potential for abuse, leading to addiction, overdose, and social consequences. This has widespread implications for public health and safety.
- **Environmental contamination:** improper disposal of pharmaceutical drugs can lead to contamination of water supplies, impacting wildlife and ecosystems. For example, traces of narcotics and non-narcotic drugs have been found in rivers and lakes due to wastewater effluents from pharmaceutical factories or improper disposal by consumers.

HEALTH BENEFITS OF NARCOTIC &

NON-NARCOTIC DRUGS:-

Health Benefits of Narcotic Drugs

-Narcotic drugs, often referred to as opioids, include substances such as morphine, codeine, and synthetic opioids like oxycodone and fentanyl. These drugs are primarily used for pain management and have several health benefits:

1. Pain Relief:

Narcotic drugs are highly effective in managing severe pain, particularly after surgery, injury, or in cases of terminal illnesses such as cancer. Morphine, for example, is a standard treatment for severe acute pain and chronic pain associated with cancer.

2. Palliative Care:

In terminal conditions like cancer, narcotics can alleviate significant pain, improve the quality of life, and ease suffering. They help reduce physical distress during end-of-life care, which is essential in palliative and hospice settings.

3. Anesthesia:

Opioids are often used in surgical settings as part of anesthesia to induce sleep or unconsciousness, reducing the sensation of pain during operations.

Health Benefits of Non-Narcotic Drugs :

-Non-narcotic drugs include a wide range of medications used to treat a variety of conditions. These drugs are generally considered safer than narcotics because they have lower potential for abuse and addiction. Health benefits include:

1. Pain Relief (Without Dependency):

Non-narcotic analgesics, such as acetaminophen (Tylenol) and non-steroidal anti-inflammatory drugs (NSAIDs) like ibuprofen, are effective for mild to moderate pain relief. They are commonly used for conditions like headaches, muscle pain, and arthritis.

2. Anti-inflammatory Effects:

NSAIDs (e.g., aspirin, ibuprofen, naproxen) reduce inflammation, which makes them effective in treating conditions like arthritis, tendonitis, and other inflammatory disorders. These drugs help reduce swelling, redness, and pain.

3. Infection Control:

Antibiotics, antivirals, and antifungals are crucial in treating infections, saving millions of lives by preventing and curing bacterial, viral, and fungal diseases. Vaccines are also non-narcotic drugs that offer immunity against infectious diseases.

Conclusion :

Both narcotic and non-narcotic drugs offer significant health benefits when used appropriately, especially for pain management, infection control, and chronic disease management. However, the environmental impact, particularly from the production, consumption, and disposal of narcotics, requires careful attention. Ongoing efforts to develop sustainable practices for drug manufacturing, responsible disposal, and proper medical use are key to minimizing both health risks and environmental damage.

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