Butorphanol

Butorphanol is a medication indicated to treat migraine headaches, as well as severe pain in patients, and is helpful in labor pains. This drug has mixed actions at the receptor level and acts as a full agonist at ? receptors, while acting as a partial agonist/competitive antagonist at ? receptors. Because of butorphanol's partial agonist/antagonist activity at ? receptors, it causes less respiratory depression than full opioid agonist drugs.A side effect of butorphanol administration is withdrawal. However, these withdrawal symptoms usually occur when the patient is being concurrently treated with a full opioid agonist medication. The mechanism for this adverse effect can be explained by butorphanol's competitive antagonist activity at ? receptors, competing with the adjunct opioid drug being taken, leading to withdrawal symptoms.



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Indications

Migraine
Mind-rain
This medication is primarily used to treat migraine headaches and is administered in the form of an intranasal spray.

Severe Pain
Severed-arm with Pain-bolts
Butorphanol is used for severe and moderate pain, including pains associated with labor. This drug is more effective in women than men.

Labor
Lady in Labor
Butorphanol is often used in controlling labor pains, as it is more helpful in treating severe pain in women than it is in men.

Mechanism of Action

Partial Agonist at Mu and Full Agonist at Kappa Receptors
Partial Dragonist at ? Receptor and Full Dragonist at ? Receptor
This drug works as a partial agonist at ? and as a full agonist at ? receptors, exhibiting both agonist and antagonist properties at these receptor sites.

Less Respiratory Depression
Down-arrow Half Deflated-lungs
When compared to full opioid receptor agonists, butorphanol causes less respiratory depression. This is due to this drug's partial agonist/antagonist properties at ? opioid receptors.

Side Effects

Withdrawal Symptoms
Withdrawal from ATM
Patients can experience withdrawal symptoms if they are taking a full opioid agonist concurrently. At μ receptors, butorphanol acts as a competitive antagonist and partial agonist. Thus, a patient also taking a full opioid agonist medication would experience butorphanol competing for opioid receptors, leading to withdrawal symptoms. This is treated with naloxone, however overdose is not easily reversed with this medication.

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