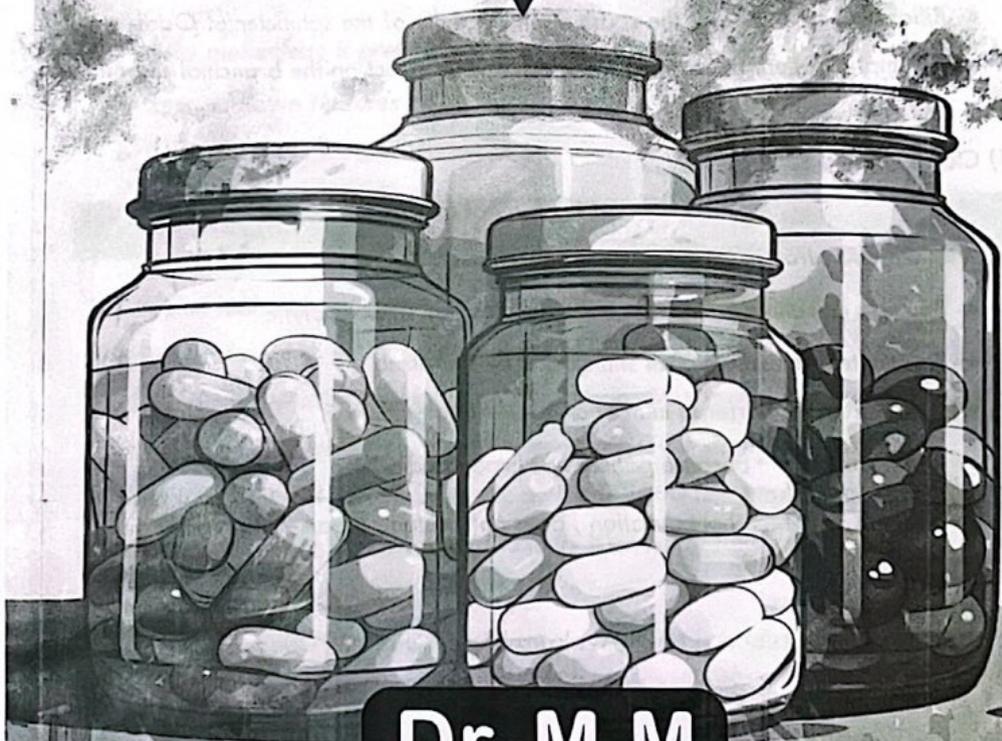


CNS Pharmacology

Level(2) Sem(4)

MCD (2)

5
L.E



Dr. M.M

- 1) **Mention the opioid of choice for the pain of posterior myocardial infarction and why?**
 - Meperidine because of its atropine like activity to avoid the development of heart block inducible by the vagal activity of morphine.
- 2) **Explain the cause of morphine contraindication in patient with head trauma?**
 - Morphine increases the intracranial tension through the cranial vasodilatation induced by the accumulating CO₂ because of the respiratory center depression.
- 3) **What is the drug of choice in treating morphine acute toxicity? Mention its contraindication?**
 - Naloxon.
 - Contraindicated in chronic opioid toxicity for fear of abstinence syndrome
- 4) **What are the contraindications behind the spasmogenic activity of morphine?**
 - Biliary colic because of the spasmogenic activity of the sphincter of Oddi-
 - Asthmatic patient because of the spasmogenic effect on the bronchial smooth Muscle.
- 5) **Classify opioid ?**
- 6) **Mention pharmacological effect , side effect of morphine ?**
- 7) **Why we add atropine to morphine in sever colic ?**
 - Because morphine is spasmogenic and atropine is spasmolytic
 - To counter excessive vagal stimulation by morphine
- 8) **Why meperidine is preferred in inferior MI and during labor ?**
 - In Inferior MI → because patient has bradycardia
 - In labor → it has short duration , does not prolong labor (little spasmogenic effect)

9)

	Morphine	Codeine
Oral bioavailability:	25%	60%
Analgesic effects:	Strong	Weak (20%).
Antitussive effect:	Weak	Strong
Uses:	Mention its 4 uses	Analgesic and antitussive

	Morphine	Meperidine
Chemistry	Natural opioid	Synthetic opioid
Bioavailability	25%	Greater (50%)
Analgesic effect	Strong	Weak (10% of morphine)
Spasmogenic effects	Present	Absent
Autonomic effects	Vagal stimulation	Atropine-like action
Uses	Mention its 4 uses	Analgesic only

10) Why methadone is preferred in chronic opiate addiction ?

- Less addictive features
- Withdrawal symptoms less severe

MCQ Notes L2

- 1) Codeine and propoxyphene used for cough (anti-tussive) and mild pain
- 2) Heroin not used clinically because it is highly addictive
- 3) Meperidine (pethidine) used in case of posterior MI, labor, biliary colic because it is atropine like action, not spasmogenic and short duration of action
- 4) Fentanyl or alfentanyl has analgesic action 80-100 times more than morphine
- 5) Methadone used in chronic opioid toxicity because of long action, less addictive, less withdrawal symptoms
- 6) Nalorphine, nabuphine cause withdrawal symptoms in addict

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- 7) Pentazocine and butorphanol not cause withdrawal symptoms but increase systemic and pulmonary pressure (not used in MI)
- 8) Naloxone is opioid blocker used parenteral for rapid onset for acute opioid toxicity
- 9) Naltrexone is opioid blocker used orally for long duration of action and cause hepatotoxicity

MCQ

<p>1. Which of the following is 100 times more potent than morphine?</p> <p>a) Pethidine</p> <p>b) Fentanyl</p> <p>c) Pentazocine</p> <p>d) Meperidine</p> <p>e) Codeine</p>	B
<p>2. One of the following is an established clinical use of morphine:</p> <p>a) Management of generalized anxiety disorders</p> <p>b) Relief of pain associated with biliary colic</p> <p>c) Pulmonary congestion</p> <p>d) Treatment of ethanol withdrawal syndrome</p> <p>e) Suppression of ethanol withdrawal syndrome</p>	C
<p>3. One of the opioid analgesic used for relieving acute severe pain of renal colic is:</p> <p>a) Morphine</p> <p>b) Naloxone</p> <p>c) Methadone</p> <p>d) Meperidine</p> <p>e) Nalorphine</p>	D

<p>4. Which of the following opioid analgesics is used in obstetric labor?</p> <ul style="list-style-type: none">a) Fentanylb) Pentazocinc) Meperidined) Buprenorphinee) Tramadol	<p>C</p>
<p>5. Indicate the pure oral opioid antagonist which has a long half-life:</p> <ul style="list-style-type: none">a) Naloxoneb) Naltrexonec) Tramadold) Pentazocinee) Nalorphine	<p>B</p>
<p>6. Which of the following drugs may be used as a narcotic antagonist?</p> <ul style="list-style-type: none">a) Propoxypheneb) Fentanylc) Naloxoned) Meperidine	<p>C</p>
<p>7. Which of the following drug is NOT opioid?</p> <ul style="list-style-type: none">a) Morphineb) Codeinec) Fentanyld) Meperidinee) Diazepam	<p>E</p>
<p>8. Fentanyl has the following properties:</p> <ul style="list-style-type: none">a) Fentanyl is a synthetic opioid agonistb) Fentanyl is high potent opioid analgesicc) Fentanyl produces less nausea than morphined) Fentanyl is used as an adjunct to general anesthesiae) All of the above	<p>E</p>

9. Actions of morphine include the following except:

- A. Vagal stimulation
- B. Miosis
- C. Antiemetic
- D. Postural hypotension

C

10. Morphine, all are true EXCEPT:

- A. Acts as an agonist at opioid receptors (especially μ) in the brain and spinal cord
- B. Causes pupillary constriction by stimulation of the Edinger-Westphal nucleus in the mid-brain
- C. Acts as an antihistamine
- D. Is subject to pre-systemic metabolism.
- E. Stimulates the chemoreceptor trigger zone

C

11. Which of the following is not true for meperidine?

- A. It has less analgesic potency than morphine
- B. It has less spasmogenic effect than morphine
- C. It can cause histamine release and bronchoconstriction
- D. It has greater bioavailability than morphine
- E. It does not cause physical dependence

E

12. Morphine causes all of the following EXCEPT:

- A Diarrhea
- B. Increased intrabiliary pressure
- C. Histamine release
- D. Reduced sensitivity of the respiratory centre to carbon dioxide
- E. Hypotension

A

<p>13. The following are particularly sensitive to the pharmacological actions of morphine EXCEPT:</p> <p>A. Young children B. The elderly C. Patients with hepatic failure D. Patients with renal failure E. Patients with hyperthyroidism</p>	E
<p>14. Which drug does not activate opioid receptors, has been proposed as a maintenance drug in treatment programs for opioid addicts, and with a single oral dose, will block the effects of injected heroin for up to 48 h?</p> <p>A. Fentanyl B. Nalbuphine C. Naloxone D. Naltrexone E. Propoxyphene</p>	D
<p>15. Which drug is a full agonist at opioid receptors with analgesic activity equivalent to morphine, a longer duration of action, and fewer withdrawal signs on abrupt discontinuance than morphine?</p> <p>A. Fentanyl B. Hydromorphone C. Methadone D. Nalbuphine E. Oxycodone</p>	C
<p>16. Which drug does not activate opioid receptors, has been proposed as a maintenance drug in treatment programs for opioid addicts, and with a single oral dose, will block the effects of injected heroin for up to 48 h</p> <p>(A) Fentanyl (B) Nalbuphine (C) Naloxone (D) Naltrexone</p>	D

17. Morphine produces analgesia by acting at:

- A. Peripheral pain receptors
- B. A spinal site
- C. Supraspinal sites
- D. Both spinal and supraspinal sites
- C. Supraspinal sites

D

18. Morphine induced constipation involves the following mechanisms except:

- A. Increase in tone and decrease in propulsive activity of intestinal muscles
- B. Anti-vagal action
- C. Spasm of gastrointestinal sphincters
- D. Reduction of gastrointestinal secretions

B

19. In a comatose patient suspected of poisoning, which of the following findings would be against the drug being morphine:

- A. Mydriasis
- B. Marked respiratory depression
- C. Cyanosis
- D. Fall in blood pressure

A

20. The antidote of choice for morphine poisoning is:

- A. Nalorphine
- B. Nalbuphine
- C. Naltrexone
- D. Naloxone

D

21. Use of morphine in the following category of patients does not carry any special risk:

- A. Ischemic heart disease patients
- B. Bronchial asthma patients
- C. Elderly male patients
- D. Biliary colic patients

A

<p>22. Morphine is contraindicated in head injury because:</p> <p>A. It does not relieve the pain of head injury</p> <p>B. It can raise intracranial tension</p> <p>C. It can cause constipation</p> <p>D. It is liable to cause addiction</p>	<p>B</p>
<p>23. The following opioid is more potent than morphine</p> <p>A. Pethidine</p> <p>B. Fentanyl</p> <p>C. Dextropropoxyphene</p> <p>D. Tramadol</p>	<p>B</p>
<p>24. Indicate the opioid analgesic that is used as transdermal patch for chronic and cancer pain:</p> <p>A. Morphine</p> <p>B. Pentazocine</p> <p>C. Fentanyl</p> <p>D. Tramadol</p>	<p>C</p>
<p>25. Select the analgesic which acts through opioid as well as additional spinal monoaminergic mechanisms:</p> <p>A. Tramadol</p> <p>B. Ethoheptazine</p> <p>C. Dextropropoxyphene</p> <p>D. Alfentanil</p>	<p>A</p>
<p>26. Morphine affords symptomatic relief of dyspnoea in acute left ventricular failure by the following mechanisms except:</p> <p>A. Bronchodilatation</p> <p>B. Depression of respiratory centre</p> <p>C. Reduction in cardiac preload</p> <p>D. Shift of blood from pulmonary to systemic circuit</p>	<p>A</p>

27. All of the following are narcotics except:

- a) Morphine
- b) Codeine
- c) Fentanyl
- d) Meperidine
- e) Diazepam

E

28. All of the following are organ system effects of the narcotic analgesics except:

- a) Euphoria
- b) Respiratory depression
- c) Emesis
- d) Constipation
- e) Myopia

E

29. In equianalgesic doses, methadone and morphine are similar in each of the following effects EXCEPT:

- a) Analgesic potency
- b) Antitussive action
- c) Duration of analgesic action
- d) Degree of respiratory depression

C

30. Each of the following is an acceptable and satisfactory method for overcoming addiction to opioids EXCEPT:

- a) Administration of clonidine and methadone
- b) Acute withdrawal
- c) A gradual daily reduction of the dose until no drug is being given
- d) Substituting methadone for morphine or heroin and then reducing the dose of methadone by 50% every other day
- e) Shifting the addict onto a methadone maintenance program

B

31. Morphine can be used in all of the following conditions EXCEPT:

- a) Cough
- b) Acute pulmonary edema.
- c) Anesthetic premedication
- d) Diarrhea.
- e) For pain in patients with terminal cancer.

A

32. All the following are involved in the mechanism of action of morphine

Except:

- A. Most effects are mediated by activation of kappa receptors.
- B. Inhibition of calcium influx resulting in inhibition of transmitter release.
- C. Increase in K outflux resulting in hyperpolarization of neuronal membrane.
- D. Reduction of emotional response to pain.

A

33. Indications of morphine do not include:

- A. Analgesic in cancer pain.
- B. Acute pulmonary edema in acute left ventricular failure & myocardial infarction
- C. In anesthesia
- D. Severe pain following head injury.

D

34. Most serious adverse effect/s of morphine

- A. Dependence.
- B. Respiratory depression.
- C. Hypertension.
- D. A and B
- E. B and C

D

<p>35. The following is not common between pethidine & tramadol:</p> <ul style="list-style-type: none">A. Analgesics.B. Action completely reversed by naloxone.C. Less respiratory depression than morphine.D. Increase risk of convulsions with high doses.	B
<p>36. The following is not true concerning codeine:</p> <ul style="list-style-type: none">A. Inhibits cough center in medulla.B. Less potent antitussive than morphine.C. Diarrhea is a troublesome side effect.D. Analgesic.	C
<p>37. The following is not common between pethidine & buprenorphine :</p> <ul style="list-style-type: none">A. Analgesic effect in severe pain.B. Respiratory depression is increased by increasing dose.C. Nausea & vomiting.D. Constipation	B
<p>38. Pethidine differs from morphine in all the following Except:</p> <ul style="list-style-type: none">A. It is preferred for long term treatment of chronic painB. It is less liable to cause asphyxia neonatorumC. It is less liable to cause biliary colicD. It has atropine like action.	A
<p>39. The following concerning naloxone is not correct:</p> <ul style="list-style-type: none">A. Has a shorter half life than its agonist.B. Given orally.C. Given in anesthesia to reverse CNS depression of its agonist.D. It is a specific antagonist to opioid receptors.	B

<p>40. Which of the following is an opioid used in management of heroin withdrawal?</p> <p>A. Buspirone. B. Bupropion. C. Buprinorphine. D. Bromocriptine.</p>	C
<p>41. A 42-year-old man with chronic pain is brought to the emergency room because of over-sedation and respiratory depression while using fentanyl patches. He is given intravenous naloxone. He is not given oral naloxone because naloxone</p> <p>a. is not absorbed from the GI tract. b. undergoes first-pass metabolism in the liver. c. is metabolized to an inactive metabolite in the GI lining. d. is excreted unchanged in the urine. e. is destroyed by stomach.</p>	B
<p>42. Which of the following effects persists in spite of tolerance of opioid analgesic?</p> <p>(A) Analgesia (B) Constipation (C) Drowsiness (D) Euphoria (E) Nausea and vomiting</p>	B
<p>43. Which drug does not activate opioid receptors, has been proposed as a maintenance drug in treatment programs for opioid addicts?</p> <p>(A) Fentanyl (B) Nalbuphine (C) Naloxone (D) Naltrexone (E) Propoxyphene</p>	D

44. A 48-year-old man is being treated with a long-acting opiate for pain associated with terminal cancer. He is also prescribed a transmucosal fentanyl formulation (loollipop) for "breakthrough" pain. The transmucosal formulation is an effective analgesic because it

- a. avoids first pass metabolism of fentanyl.
- b. avoids nausea and vomiting that is associated with the systemic use of fentanyl.
- c. delivers fentanyl directly to opiate receptors in the mouth.
- d. avoids constipation.
- e. avoids respiratory depression.

A

45. A 32-year-old woman has been taking an oxycodone-acetaminophen product for chronic arthritic pain. On a follow-up appointment her serum aminotransferases are elevated, and she is slightly jaundiced. She admits to increasing the dose of the oxycodone combination product over the past several weeks. The most likely cause of her liver injury is

- a. oxycodone.
- b. hepatitis A.
- c. hepatitis C.
- d. arthritis.
- e. acetaminophen

E

46. A 53-year-old man is requesting meperidine for his chronic back pain. His physician is reluctant to use meperidine for the treatment of chronic pain because of

- a. metabolite toxicity.
- b. poor oral absorption.
- c. increased addiction potential.
- d. patient noncompliance.
- e. likelihood that meperidine will be diverted or sale on the street

A