

Abbreviations

AD: Alzheimer's disease

AE: Adverse Effects

BDZ: Benzodiazepine

ECT: Electroconvulsive Therapy

EPS: Extrapyrimalidal Symptoms

NMS: Neuroleptic Malignant Syndrome

OCD: Obsessive Compulsive Disorder

SE: Side Effects

TD: Tardive dyskinesia

1. The original definition of atypical antipsychotics was used for describing

- A. **A drug with low risk EPS**
- B. A drug with low risk of inducing weight gain
- C. A drug that caused improvement of cognitive symptoms
- D. A drug that reduced prolactin

2. Which of the following receptor subtypes is involved in the mechanism of action of second generation antipsychotics?

- A. M₁
- B. H₁
- C. **5HT_{2A}**

3. Regarding the use of antipsychotics for dementia, choose the correct answer:

- A. Second generation antipsychotics have proven effective for cognitive symptoms in Alzheimer's disease
- B. **Antipsychotic drugs are not approved for the management of behavioral symptoms in dementia???**
- C. Clozapine is more effective than first generation antipsychotics for behavioral disturbance
- D. Second generation antipsychotics are ineffective for the treatment of acute episodes

*Cholinesterase inhibitors and memantine are used to treat cognitive symptoms of AD

*Antipsychotics are widely used in the management of neuropsychiatric symptoms in AD. There is modestly convincing evidence that most of the atypical antipsychotics provide some benefit for particular neuropsychiatric symptoms, **but these data have been insufficient to gain a Food and Drug Administration approval as an indication for the management of behavioral symptoms in AD.**

4. Choose an antipsychotic with the lowest risk of hyperprolactinemia and EPS

- A. Chlorpromazine
- B. Aripiprazole**
- C. Fluphenazine
- D. Haloperidol

5. Regarding the definition of treatment-resistant depression presented in this course, choose the correct description

- A. Failure to respond adequately to three successive courses of monotherapy with antidepressants from the same pharmacological class, given in an adequate dose for sufficient length of time
- B. Failure to respond adequately to two successive courses of monotherapy with pharmacological different antidepressants, given in an adequate dose for sufficient length of time.**
- C. Failure to respond adequately to three successive courses of monotherapy with pharmacological different antidepressants, given in an adequate dose for sufficient length of time.
- D. Failure to respond adequately to ECT.

6. Only one of the following antipsychotic medications is approved by FDA for the treatment of acute manic/mixed episodes, as maintenance treatment and for the treatment of bipolar depression.

- A. Chlorpromazine
- B. Asenapine
- C. Clozapine
- D. Quetiapine**

7. One of the following is part of the clinical features of dystonia. Choose the correct answer

- A. Cogwheel rigidity
- B. Pill rolling movements
- C. Masklike facies
- D. Retrocollis and laterocollis**

8. Which of the following is not part of the clinical features of the movement pattern in TD?

- A. Repetitive movements
- B. Abnormal movements
- C. Stereotyped movements
- D. Painful movements**

9. Regarding the effectiveness and SE profile of first and second generation antipsychotics in the treatment of schizophrenia, choose the correct answer:

- A. Second generation antipsychotics are ineffective for the treatment of acute episodes
- B. Second generation antipsychotics are less effective for treating secondary symptoms than first generation antipsychotics.
- C. First and second generation antipsychotics are effective for the treatment of positive symptoms**
- D. First generation antipsychotics are effective for the treatment of positive, negative and cognitive symptoms

10. One of the following drugs is a first generation antipsychotic with affinity for H₁ receptors (sedative profile) and for alpha-1 receptor (risk of orthostatic hypotension).

- A. Quetiapine
- B. Chlorpromazine**
- C. Clozapine
- D. Haloperidol

11. Which of the following drugs are associated with the highest risk of causing weight gain?

- A. Risperidone and Quetiapine
- B. Haloperidol and Perphenazine
- C. Clozapine and Olanzapine**
- D. Aripiprazole and Ziprasidone

12. A tetrad has been proposed for the clinical features of the NMS. Choose the option that covers the four clinical signs and symptoms that help in the diagnosis of NMS:

- A. Hypothermia, dystonia, mental status changes and autonomic instability
- B. Hyperthermia, dystonia, mental status changes and autonomic instability
- C. Hyperthermia, rigidity, mental status changes and seizures
- D. Hyperthermia, rigidity, mental status changes and autonomic instability**

13. Choose the receptor type involved in orthostatic hypotension:

- A. H₁
- B. Alpha 1**
- C. D₂
- D. M₁

14. Which of the following antipsychotics requires sublingual administration?

- A. Lurasidone
- B. Asenapine**
- C. Illoperidone
- D. Paliperidone

15. Which of the following antipsychotics is partial agonist at D₂ receptors?

- A. Haloperidol (inverse agonist)
- B. Clozapine
- C. Clozapine
- D. Quetiapine (antagonist)
- E. Aripiprazole (partial antagonist)**

16. Which of the following conditions is associated with long term use of lithium in mood disorders?

- A. Tardive dyskinesia
- B. Hypoglycemia
- C. Hyperprolactinemia
- D. Hypertension
- E. Hypothyroidism**

17. A common AE of venlafaxine is:

- A. Hypersalivation
- B. Bradycardia
- C. Increase in blood pressure**
- D. Decrease in blood pressure
- E. Tinnitus

18. Which of the following antidepressants has relatively short biological half-life?

- A. Fluoxetine
- B. Trazodone (10-15hrs)**
- C. Mirtazapine
- D. Citalopram
- E. Imipramine

*trazodone (10-15hrs), Imipramine (20hrs), Mirtazapine (20-40hrs), Fluoxetine (24-72hrs), Citalopram (35hrs)

19. Highest rate of sexual dysfunction is reported with:

- A. Mirtazapine**
- B. Citalopram
- C. Bupropion
- D. Paroxetine

20. Which of the following antidepressants requires therapeutic blood monitoring for safe use?

- A. Bupropion
- B. Paroxetine
- C. Venlafaxine
- D. Nortriptyline**
- E. Phenelzine

21. Combining MAOIs with SSRIS may cause
- A. Extrapyrarnidal Symptoms (EPS)
 - B. Agranulocytosis
 - C. Neuroleptic Malignant Syndrome (NMS)
 - D. Serotonin Syndrome**
22. Which of the following is known to have the least cardiovascular side effects?
- A. Clomipramine
 - B. Amitriptyline
 - C. Citalopram**
 - D. Imipramine
23. Which antidepressant is contraindicated in a patient with seizure disorder?
- A. Mirtazapine
 - B. Fluoxetine
 - C. Venlafaxine
 - D. Bupropion
 - E. Nefazodone**
24. Which of the following antidepressants is approved by FDA for smoking cessation?
- A. Bupropion**
 - B. Fluvoxamine
 - C. Venlafaxine
 - D. Paroxetine
25. What is the best antidepressant prescribed for a patient with hypotension and cardiac disease?
- A. Mirtazapine
 - B. Venlafaxine**
 - C. Escitalopram
 - D. Duloxetine
26. Penile priapism is known to be associated with use of?
- A. Escitalopram
 - B. Bupropion
 - C. Venlafaxine
 - D. Trazodone**
 - E. Mirtazapine

27. The recommended dose of duloxetine for major depressive disorder is:
- A. 37.5-75mg/day
 - B. 40-60mg/day**
 - C. 75-150mg/day
 - D. 300-600mg/day
28. Sedation associated with use of antidepressants is attributed to the:
- A. Blockade of histamine H₁ receptor**
 - B. Blockade of muscarinic Ach receptors
 - C. Antagonism of 5HT₂ receptors
 - D. Blockade of alpha 1 receptors
29. Which of the following is **not** associated with TCA?
- A. Urinary incontinence**
 - B. Dry mouth
 - C. Constipation
 - D. Blurred vision
30. Which is a clinician rated scale for monitoring outcome of depression treatment?
- A. Hamilton Depression Rating Scale (HAM-D)**
 - B. Beck Depression Inventory (BDI)
 - C. Zung Depression Scale
 - D. Geriatric Depression Scale (GDS)
31. Therapeutic options for refractory depression include all **except**
- A. Glucocorticoid therapy**
 - B. Stimulant augmentation?
 - C. Thyroid hormone supplementation
 - D. Lithium augmentation
 - E. Transcranial magnetic stimulation
32. Which of the following antidepressants is most selective for inhibition of neuronal reuptake of serotonin?
- A. Sertraline**
 - B. Bupropion
 - C. Mirtazapine
 - D. Venlafaxine
 - E. Imipramine

33. Which of the following refers to the way the body handles the drug?
- A. Pharmacodynamics
 - B. Pharmacoceutics
 - C. Pharmacokinetics**
 - D. Pharmacotherapeutics
34. Varenicline is a:
- A. Antidepressant
 - B. Nicotinic receptor antagonist for nicotine dependence**
 - C. Atypical antipsychotic
 - D. Hypnotic without hangover effect
35. Which of the following statement about BDZs is **wrong**?
- A. BDZs raise the ECT seizure threshold**
 - B. BDZs suppress REM sleep
 - C. BDZs interact strongly with alcohol to produce CNS depression
 - D. BDZs prolongs sleep
36. The reference TCA against which new antidepressants are tested in clinical trials is:
- A. Imipramine**
 - B. Dothiepin
 - C. Clomipramine
 - D. Amoxapine
37. Rivastigmine belongs to
- A. MAOIs
 - B. Stimulants
 - C. Inorganic ions
 - D. Cholinesterase inhibitors**
 - E. butyrophenones
38. The usual dose range of trifluoperazine is:
- A. 2-8mg/day
 - B. 80-160mg/day
 - C. 100-1000mg/day
 - D. 10-30mg/day**
39. Which drug in the SSRI group of antidepressant has half-life of 2-4 days?
- A. Fluoxetine**
 - B. Sertraline
 - C. Escitalopram
 - D. Paroxetine

40. A drug which is postulated to be an inhibitor of dopamine- β -hydroxylase, which catalyzes the conversion of dopamine into norepinephrine, leads to an increase in brain dopamine levels:

- A. **Disulfiram**
- B. Desipramine
- C. Phenezine
- D. Aripiprazole

41. Fluvoxamine belongs to which class of drug:

- A. TCAs
- B. MAOIs
- C. **SSRIs**
- D. SNRIs

42. The commonly used TCA in OCD is:

- A. Dothiepin
- B. **Clomipramine**
- C. Amitriptyline
- D. Nortriptyline

43. Which is not an anticholinergic drug:

- A. Procyclidine
- B. **Buspirone (anxiolytic)**
- C. Benztropine
- D. Trihexiphenidyl

44. Depot preparation for which of the following drugs is not available:

- A. Fluphenazine (available)
- B. Haloperidol (available)
- C. Flupetixol (available)
- D. **Pimozide**

45. A psychotic drug commonly used in Tourette disorder is:

- A. Mianserin
- B. **Haloperidol**
- C. L-tryptophan
- D. Phenelzine

46. The most important AE of Zopiclone is:

- A. Dependence
- B. Convulsions
- C. EPS
- D. Bitter taste**
- E. Sedation

47. Which of the following is a butyrophenone?

- A. Trifluoperazine
- B. Prochlorperazine
- C. Pimozide
- D. Fluphenazine
- E. Haloperidol**

48. Which of the following mechanism is considered to be the cause of extrapyramidal reaction?

- A. D₂ receptor up-regulation
- B. Alpha-adrenoceptor blockade
- C. D₂ receptor blockade**
- D. H₁ histamine receptor blockade

49. Which of the following statements about SE of antipsychotics is not correct?

- A. Antipsychotics produce menorrhoea and increased libido in women
- B. Antipsychotics produce decreased libido and gynecomastia in men
- C. Antipsychotics cause inhibition of prolactin secretion**
- D. Low potency antipsychotics cause orthostatic hypotension

50. Which of the following antipsychotic is known to elevate serum prolactin levels

- A. Clozapine
- B. Quetiapine
- C. Amisulpride**
- D. Aripiprazole

51. Which drug may be useful in the management of NMS although it can worsen the symptoms of schizophrenia?

- A. Haloperidol
- B. Thiothixene
- C. Risperidone
- D. Valproic acid
- E. Bromocriptine**

52. What is the chlorpromazine (100mg) equivalent oral dose of haloperidol?

- A. 100mg
- B. 10mg
- C. 300mg
- D. 2mg**
- E. 30mg

53. A patient reports fever, sore throat, or cellulitis after 2 weeks of starting antipsychotic therapy with clozapine. Which of the following interventions is most important?

- A. Inform the patient that it is common to develop fever and sore throat when taking this drug
- B. Discontinue the antipsychotic and conduct WBC and differential counts**
- C. Hospitalize the patient for observation
- D. Treat the patient with the broad spectrum antibiotic and continue therapy

54. Which neuroleptic agent has the lowest likelihood of producing tardive dyskinesia?

- A. Clozapine**
- B. Imipramine
- C. Fluoxetine
- D. Thiothixene
- E. Chlorpromazine

55. Antagonism of which dopaminergic pathway is attributed to be the cause of therapeutic actions of antipsychotic drugs?

- A. Tuberoinfundibular pathway
- B. Mesolimbic-mesocortical system**
- C. Nigrostriatal system
- D. Reticular activating system

56. Tetrabenazine is found to be effective in controlling:

- A. Neuroleptic-induced parkinsonism
- B. Neuroleptic-induced tardive dyskinesia**
- C. Hyperprolactinemia
- D. Weight gain

57. Which of the following is a phenothiazine?

- A. Clozapine
- B. Chlorpromazine**
- C. Olanzapine
- D. Risperidone
- E. Haloperidol

58. Tardive dyskinesia after long term antipsychotic administration is thought to be due to

- A. Loss of cholinergic neurons in striatum
- B. Enhanced stimulation of D₂ dopamine auto receptors
- C. Increased tolerance to antipsychotic agents
- D. A decrease in dopamine synthesis
- E. Up-regulation of striatal dopamine receptors**

59. Which of the following agents possesses pharmacological actions characterized by high antipsychotic potency and high potential for extrapyramidal toxicity?

- A. Carbamazepine
- B. Thioridazine
- C. Haloperidol**
- D. Flumazenil
- E. Clozapine

60. Which of the following manifestation is not caused by blockade of muscarinic cholinceptor?

- A. Constipation
- B. Urinary retention
- C. Blurred vision
- D. Amenorrhea**
- E. Dry mouth

61. Which category of drugs are associated with NMS?

- A. Antidepressants
- B. Anticholinergics
- C. Mood stabilizers
- D. Antipsychotics**
- E. Anxiolytics

62. The most common SE of BDZ is:

- A. Seizures
- B. Restless and agitation
- C. Sedation**
- D. Vomiting

63. Which of the following central dopaminergic pathway is associated with antipsychotic efficacy?

- A. Mesolimbic**
- B. Nigrostriatal
- C. Mesocortical
- D. Tuberoinfundibular

64. The usual dose of clonazepam is:

- A. 0.4–0.8mg/day
- B. 5–10mg/day
- C. 0.25-2.0mg/day**
- D. 15-30mg/day

65. Flumazenil is a drug used in:

- A. Schizophrenia
- B. Opioid dependence
- C. BDZ overdose**
- D. Severe agitation

66. An antipsychotic which is known to cause fatal torsades de pointes is:

- A. Chlorpromazine
- B. Thioridazine**
- C. Trihexiphenidyl
- D. Clozapine

67. Which is not an EPS?

- A. Acute dystonia
- B. Akathisia
- C. Agnosia**
- D. Drug-induced parkinsonism

68. A common AE shared by clozapine, olanzapine and risperidone is:

- A. Sialorrhea (hypersalivation)
- B. Weight gain**
- C. Seizures
- D. Agranulocytosis

69. Buspirone belongs to which class of drugs:

- A. Benzodiazepines
- B. Tricyclic
- C. Azapirones**
- D. SSRIs

70. Zopiclone is most appropriate for those:

- A. Early morning awakening
- B. With obstructive sleep apnoea and respiratory problems
- C. With difficulty in initiating and maintaining sleep**
- D. Agitated and violent

71. A condition hypothesized to be due to dopamine post-synaptic super sensitivity in basal ganglia is:

- A. Akathisia
- B. Pseudoparkinsonism
- C. Tardive dyskinesia**
- D. NMS

72. The term ataractic refers to a drug that:

- A. Induces drowsiness
- B. Induces sleep
- C. Has a calming effect**
- D. Causes extrapyramidal SE

73. Zopiclone is most appropriate for those:

- A. Early morning awakening
- B. Agitated and violent
- C. With obstructive sleep apnoea and respiratory problems
- D. With difficulty in initiating and maintaining sleep**

74. Tetrabenazine is a drug is a drug used in the management of:

- A. Psychotic symptoms
- B. Tardive dyskinesia**
- C. Seizures
- D. Sleep disorders

75. Fundamental property of antipsychotic drug is:

- A. Blockade of reuptake of serotonin
- B. Dopamine post-synaptic receptor blockade**
- C. Increase the neurotransmission in GABA receptors
- D. Blockade of reuptake of norepinephrine

76. A subjective feeling of motor restlessness develops following treatment with antipsychotics is termed as:

- A. Agnosia
- B. Dyskinesia
- C. Dystonia
- D. Akathisia**

77. A drug which is particularly associated with precipitation and worsening DM is:

- A. Haloperidol
- B. Carbamazepine
- C. Amitriptyline
- D. Olanzapine**

78. An important side effect of Zopiclone is:

- A. Nystagmus and double vision
- B. EPS
- C. A bitter taste associated with excretion in saliva**
- D. Respiratory depression

79. Which of the following central dopaminergic pathway is associated with hyperprolactinaemia and its consequences?

- A. Tuberoinfundibular**
- B. Mesocortical
- C. Nigrostriatal
- D. Mesolimbic

80. BDZs have the following effects except:

- A. Produce tolerance and dependence
- B. Suppress REM sleep
- C. Produces respiratory depression
- D. Induces seizures**

81. Involuntary spasmodic contraction of a group of muscles is termed as:

- A. Rabbit syndrome
- B. Tardive dyskinesia
- C. Dystonia**
- D. Akathisia

82. Acute catatonia may be treated with

- A. Zolpidem
- B. Rivastigmine
- C. Chloral hydrate
- D. Lorazepam**

83. Which of the following drug is particularly associated with precipitating/worsening DM?

- A. Clozapine and Olanzapine**
- B. Haloperidol
- C. Thiazide and Pimozide
- D. Aripiprazole

84. When used in a dose exceeding 500mg/day, thioridazine causes

- A. **Pigmentation of retina**
- B. Angle-closure glaucoma
- C. Agranulocytosis
- D. DM

85. Which is not an intervention in the management of NMS?

- A. Use of lorazepam to treat catatonia
- B. **Use of haloperidol to control agitation**
- C. Discontinuation of the antipsychotic
- D. Use of bromocriptine

86. Hypersalivation is a paradoxical AE observed in treatment with

- A. Ziprasidone
- B. Chlorpromazine
- C. Trihexyphenidyl
- D. **Clozapine**

87. Which of the following is the least sedating anxiolytic?

- A. Zolpidem
- B. Diazepam
- C. Chlorpromazine
- D. Haloperidol
- E. **Buspirone**

88. A schizophrenic patient on treatment with pimozide reports that he cannot keep still and feel a compulsion to move. These symptoms are characteristics of:

- A. Drug-induced parkinsonism
- B. Acute dystonia
- C. Serotonin syndrome
- D. NMS
- E. **Akathisia**

89. Caffeine interacts with the following except

- A. Lithium
- B. Phenelezine
- C. Chlorpromazine
- D. **Trazodone**

90. Which of the following drug belongs to the group of substituted benzamide?

- A. Sulpride
- B. Chlorpromazine
- C. Aripiprazole
- D. Thioridazine
- E. Pimozide**

91. Standard oral dose of risperidone is:

- A. 80-160mg/day
- B. 25mg 2-4 weeks
- C. 2-8mg/day**
- D. 15-30mg/day
- E. 200-1000mg/day

92. Paroxetine is a:

- A. Antipsychotic drug
- B. Used in opiate poisoning
- C. Tricyclic antidepressant
- D. Selective serotonin reuptake inhibitor**

93. Imipramine is mainly used as a:

- A. Sedative
- B. Tranquilizer
- C. Antidepressant**
- D. All of the above

*Remember – imipramine is the first antidepressant to be introduced.

94. Nausea is a troublesome SE of the following antidepressant:

- A. Doxepin
- B. Fluoxetine**
- C. Trazodone
- D. Mianserin

95. Which antidepressants found to be associated with tardive dyskinesia and narcoleptic malignant syndrome?

- A. Amoxapine**
- B. Trazodone
- C. Fluoxetine
- D. Amineptine

*This is because of blockade of dopamine receptors in the striatum.

96. Blood levels of neuroleptics are useful to check the following:

- A. Toxicability**
- B. Therapeutic levels
- C. Resistance
- D. All of the above

*Clozapine and haloperidol levels are important to monitor toxicities.

97. The drug of 1st choice in weight reduction programme is:

- A. Amphetamine
- B. Phenylethylamine
- C. Fenfluramine
- D. Diethyl propion**

98. Akathisia is:

- A. Neurotic disease
- B. Seen in schizophrenia
- C. SE of lithium
- D. SE of antipsychotic drugs**

*Akathisia manifests as motor restlessness. It is due to blockade of dopamine type-2 receptors in striatum.

99. NMS is characterised by

- A. Bradycardia
- B. Labile hypertension**
- C. Hypotonia
- D. Hypothermia

*Feature of NMS – fever, elevated, EPS, catatonic symptoms, autonomic dysfunction

100. Contraindication to lithium administration include:

- A. An administration in combination with chlorpromazine
- B. The presence of renal disease**
- C. Any occurrence of the symptom of schizophrenia
- D. The presence of depression
- E. An administration in combination with imipramine