Z

Z-Drugs

► Benzodiazepines
► Non-Benzodiazepine Agonists

Zaleplon

Definition

Zaleplon is a non-benzodiazepine sedative-hypnotic that potentiates gamma-amino-butyric acid (► GABA) neurotransmission by binding to the α-subunit of the $GABA_A$ receptor complex, with some selectivity for the α1-subunit. Zaleplon is effective the treatment for insomnia and has an extremely brief duration of action that makes it particularly suitable for treating difficulties in falling asleep (it decreases latency of sleep onset). This drug does not substantially alter the quality of sleep, has little or no residual hangover effects and the recovery from sedation is more rapid than with other ► hypnotics. Zaleplon has a similar side-effect profile to benzodiazepines and other non-benzodiazepine hypnotics although the adverse effects on cognition and psychomotor function are reduced because of the relative selectivity for the ω_1 receptor and the short half-life. Tolerance and dependence may develop with long-term use.

Cross-References

► Benzodiazepines
► Hypnotics
► Non-Benzodiazepine Agonists

Zelapar

► Selegiline

Zero-Order Elimination Kinetics

Definition

Sometimes a drug is absorbed at essentially a constant rate, called zero-order absorption. Zero-order kinetics is described when a constant amount of drug is eliminated per unit time but the rate is independent of the concentration of the drug.

Cross-References

► Bioavailability
► Elimination Half-Life
► Pharmacokinetics

Ziprasidone

Definition

Ziprasidone acts at multiple receptors but mainly as a potent $5HT_{2A}$ receptor antagonist. It is a second-generation antipsychotic with a benzothiazolyl-piperazine structure. The ► half-life is 4–10 h and it is metabolized by various CYP450 isoenzymes, most potently by 3A4. It has to be taken with food. Ziprasidone also inhibits noradrenaline and serotonin reuptake but the clinical relevance of these pharmacological effects has not yet been explored. It is also available as an acute intramuscular preparation. Among the newer antipsychotics, ziprasidone has a lower propensity to induce metabolic side effects.

Cross-References

► Second-Generation Antipsychotics

Zispin

► Mirtazapine

Ian P. Stolerman (ed.), *Encyclopedia of Psychopharmacology,* DOI 10.1007/978-3-540-68706-1,

Zolpidem

Definition

Zolpidem is a non-benzodiazepine sedative-hypnotic belonging to the class of imidazopyridines. It potentiates gamma-amino butyric acid (GABA) transmission by binding to the α-subunit of the $GABA_A$ receptor complex with some selectivity for the α1-subunit. It is commonly prescribed for short-term treatment of insomnia which should not exceed 2 weeks duration as the likelihood of tolerance, dependence, and rebound withdrawal symptoms increases with prolonged use. Like benzodiazepines, it also has anxiolytic, muscle relaxant, and anticonvulsant properties but these are very weak and require higher doses, which increase the severity of side effects. Clinical reports suggest that zolpidem may also be used to dramatically improve the condition of patients with some brain injuries. The side-effect profile of zolpidem is similar to that of other sedative-hypnotics and additionally includes symptoms such as hallucinations and delusions. Additionally, some patients report sleepwalking, migraine, subjective feelings of intoxication, manic reactions, and panic attacks. Tolerance and dependence may develop with long-term use.

Cross-References

► Benzodiazepines
► Hypnotics
► Non-Benzodiazepine Agonists

Zonisamide

Definition

Zonisamide is a sulfonamide ► anticonvulsant. It is a ► GABA agonist that also reduces ► glutamate function and has a ► half-life of 63 h. It has been studied as an adjunctive treatment in various neuropsychiatric disorders ranging from migraine to ► bipolar disorder without leading to conclusive recommendations for its use beyond epilepsy.

Zopiclone

Definition

Zopiclone is a non-benzodiazepine sedative-hypnotic acting as an agonist at the benzodiazepine binding site on gamma-amino-butyric acid (► $GABA_A$) receptors. It is used for short-term treatment of insomnia, to improve both the initiation and maintenance of sleep. Common side effects include bitter metallic taste, disruption of REM sleep, drowsiness, nausea and vomiting, irritability, confusion, depression, and a lack of coordination. More severe side effects including headache, hallucinations, nightmares, and amnesia have also been reported but appear to be rare. Tolerance and dependence may develop with long-term use.

Cross-References

► Benzodiazepines
► Hypnotics
► Non-Benzodiazepine Agonists

Zotepine

Definition

Zotepine is a second-generation antipsychotic that acts as a potent dopamine D2 and $5HT_{2A}$ antagonist. Chemically, it is in the dibenzodiazepine class. It has a plasma half-life of 21 h and is metabolized by 1A2 and 3A4 CYP450 isoenzymes. It also inhibits noradrenaline reuptake but the clinical relevance of this effect has not yet been explored.

Cross-References

► Second-Generation Antipsychotics

Zuclopenthixol

Definition

Zuclopenthixol is a multi-receptor blocking ► thioxanthene ► antipsychotic of the first generation. Its plasma ► half-life amounts to 12–28 h and it is mainly metabolized by 2D6 CYP450 isoenzymes. It is also available in a short-acting intramuscular depot preparation that has an elimination half-life of 48–72 h.

Cross-References

► First-Generation Antipsychotics