



DIAZEPAM(A SEDATIVE DRUG)

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ABSTRACT

Diazepam is most successful drug compared to other benzodiazepines. It is a drug of choice in status epilepticus. Respiratory depression is main side effect of diazepam. It is a useful drug along with pentazocine in post-surgical pain. It has prolong effects. It is a drug which causes addiction and should be kept out of reach of children and others. It should be given only under medical supervision. It is a drug of choice in insomnia with psychological diseases

KEYWORDS : Anaesthesia , Sedative , amnesia, epilepsy ,co-analgesic

Introduction: It is a sedative drug which is used as an anti-anxiety, anti-seizure and ketamine-induced hallucination. It is a safe drug in paediatrics compared to other benzodiazepine. It has co-analgesic property. It should be given in low dosage in old patients.

Clinical uses: It should be orally given night before surgery or in the morning on the day of surgery (premedication), anxiety, fear, tetanus, chronic muscle pain, convulsions, insomnia, behaviour and psychosomatic disorder, as adjunct to regional anaesthesia, as a sole agent to non-painful procedure like bronchoscopy, gastroscopy under local analgesia

Contra indication: Pregnancy, myasthenia gravis, glaucoma, CNS depression, Coma, Respiratory depression, phobia, chronic psychosis.

Pharmacokinetics and metabolism:

Onset of action : 30-60 seconds

Duration of action: long

Elimination $t_{1/2}$: 20-50 hours

Context sensitive $t_{1/2}$: Very high (not used for infusion)

Biotransformation of diazepam occurs in the liver and excreted in urine.

Pharmacology:

CVS (cardiovascular system): Diazepam given alone decreases arterial blood pressure, cardiac output and peripheral vascular resistance slightly, and sometimes increases heart rate.

RS (Respiratory system): A higher dose of diazepam causes respiratory depression which can be significant in old age and children. Very high dose can cause death due to respiratory depression.

CNS (Central nervous system): Mainly acts on reticular activating system and limbic system producing sedation, anxiolysis and amnesia. Also acts on medulla producing muscle relaxation and on cerebellum producing ataxia.

Mechanism of action: BZD acts by stimulating GABA receptor. BZD alters the conformation of the GABA receptor complex so that binding affinity for GABA is increased (GABA facilitatory action). The benzodiazepine binding site is located on the γ -2 subunit. BZD

antagonists (e.g. flumazenil) occupy the benzodiazepine receptor, but they have no activity and therefore block the actions of both agonists and inverse agonists.

Dosage:**Adult:**

Oral route- 2.5 – 10 mg/2 to 4 times

IM/IV 2 – 20 mg repeated after 4 hours (it should not exceed more than 100mg)

Paediatric:

0.2-0.3 mg/kg/dose

Drug Interaction: CNS Depressant, alcohol, cimetidine increases the effect of diazepam.

Special cautions: Renal insufficiency, liver diseases, respiratory diseases, muscle weakness, laceration, pregnancy, old patients, asthenic patients.

Adverse effects: Constipation, confusion, depression, jaundice, dizziness, headache, anxiety, respiratory/cardiac arrest, blood dyscrasias, hypotension, tachycardia.

Conclusion: In appropriate dosage diazepam can be used as a co-analgesic, anti-seizure and sedative. But antagonist flumazenil should be available for reversing the effect of diazepam, in case of any complication occurs due to its overdose.

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