

(Drugs of sedative)

هناك الكثير من الكتب التي تغطي بين sedative و anti-anxiety (تقلل التوتر)

Barbiturates
Benzodiazepines
& drug (non-Benzodiazepine drugs)
other drugs
Bupropion
Ramelteon
chloral hydrate
e. Scopolamine
zolpidem
zaleplon
zopiclone

أنت عندك
قلبك و توتر

↓ مهدئ
↓ anxiolytic drug

normal CNS

sification

Barbiturates

← أرى على الإنترنت
الوقت الذي يستغرقه الدواء
ما عني لفهمه

	t _{1/2}	Duration
Ultra-short acting: Thiopental ↓ ما عني لفهمه	8-10 h	15-20 min
Short acting: Hexobarbital Pentobarbital Secobarbital	10-40 h	2-4 h
Intermediate acting: Amobarbital	15-50 h	4-6 h
Long acting: phenobarbital	80-120 h	6-8 h

Benzodiazepines

	t _{1/2}	Duration
① Ultra-short acting: <u>Remimazolam</u>	30 min	30 min
Short acting: Midazolam Triazolam	<5h	1 h
Intermediate acting: Alprazolam - Lorazepam Temazepam - Oxazepam Nitrazepam	5-20 h	6-8 h
Long acting: <u>Diazepam</u> - <u>Clonazepam</u> <u>Flurazepam</u>	50-100 h	8-14 h

↓ sedative
↓ hypnotic (المهدئ) → لا يرفع مستوى الوعي
↓ General anesthetic (المخدر) → لا يرفع مستوى الوعي
↓ CNS depression (تثبيط الجهاز العصبي المركزي)

Pharmacokinetics

Barbiturates

Absorption:

- All are absorbed well from GIT
- **Thiopental** is given as IV only

Distribution:

- All tissues (cross BBB and placenta and secreted in milk).
- **Redistribution** to peripheral tissue occurs to highly lipid soluble drugs e.g. thiopental.

Metabolism:

- Liver → inactive metabolites.
- Most of barbiturates are microsomal enzyme inducers especially phenobarbitone

Excretion:

- Renal (Excretion is enhanced in alkaline urine).

Benzodiazepines

- All are absorbed well from GIT
- **Remimazolam** is given as IV only

- All tissues (cross BBB and placenta and secreted in milk).
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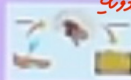
Liver:

Oxidation: → active metabolites (*oxazepam*).

Conjugation: → inactive metabolites.

In liver diseases, old age and with microsomal enzyme inhibitors, the oxidation (but not conjugation) mechanism is greatly reduced so drugs which undergo conjugation are preferred e.g. *lorazepam* and *temazepam*.

Renal.

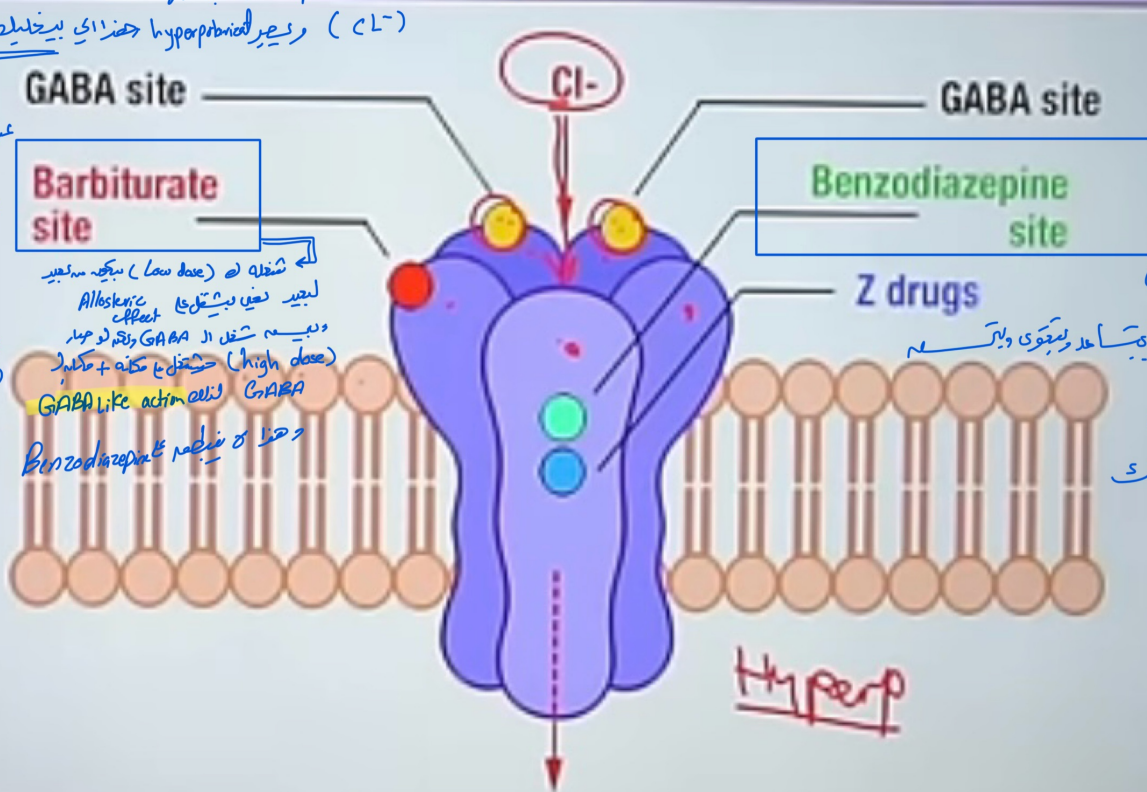


ism of action

(γ -aminobutyric acid)

GABA-A Receptor

له هذه الـ receptors، يرتبط فيها GABA والذي يحفز دخول Cl^- ويصير hyperpolarized هذا اي بيخليله تمام
 ↓
 الناس بي
 عندهم Anxiety (توتر)
 + insomnia
 + epilepsy
 كلهم عندهم مشكلة فدهم في هذا receptors
 شغله له (Low dose) بيكونه من تعديل
 Allosteric effect
 وبيكونه شغل الـ GABA وبقوة لوجوه
 (high dose) حشيشه ممكنه + ممكنه
 GABA like action
 ودها من فيلجهم Benzodiazepine



فيه الادوية بتعمل modulation (تجس)
 act as GABA
 لـ GABA خالصه لادوية بتساعد في تقوى وبتسكن
 ودها لادوية ما بتسكن في
 نفس مكان الـ GABA لولاك
 اسرار الـ action
 Allosteric effect-
 modulation of
 the GABA
 action.

Hyperp

Mechanism of action

Barbiturates

1. They cause **allosteric modulation** of GABA action on GABA-A receptors → enhancement of Cl⁻ conductance → hyperpolarization.

یعنی بعضی تشدید GABA receptors فاعل

2. At high concentrations, they cause **direct stimulation** of GABA-A receptors (GABA-like action).

3. The action of barbiturates is **non-selective** i.e. increasing the dose of barbiturates → **generalized CNS inhibition** including the **medullary centers**.

← انہا تدریج مع دوز Brain کے و تاثر مع دوز Brain واقعہ کل منبوت لکھ

Benzodiazepines

2. There are **5 GABA-A receptor isoforms**. BZDs can act on the 5 isoforms:

له اشكال 5 مختلف

■ **Isoform 1** mediates the **sedative** and anticonvulsive effects.

■ **Isoform 2** mediates the **anxiolytic** effects.

لو مختلف

↓ حیدر

لو مختلف
↓ حیدر

Pharmacological effects

Barbiturates

1. Anxiolytic effect: in small doses ✓
2. Hypnotic effect: in larger doses ✓✓✓
3. Anesthetic effect: thiopental is used as IV ultra-short acting anesthetic.
 (Anesthetic effect)
 أحد واحد في المجموعة
4. Skeletal ms relaxation
 ضد التشنج
5. Anticonvulsant effect: phenobarbitone is used in grand mal epilepsy (tonic-clonic)
 المغص
6. Generalized CNS inhibition (including medullary centers) in toxic doses.
 لو أخذته بـ high dose

Peripheral effects:

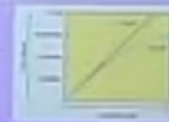
1. Hypotension: due to myocardial depression and depression of VMC.
 مؤثرة على myocardial tone
2. Hepatic microsomal enzyme induction.
 بسيه

(Depression of all body systems EXCEPT LIVER)

Benzodiazepines

1. Anxiolytic effect: in small doses ✓✓✓
2. Hypnotic effect: in larger doses ✓
3. Anesthetic effect: midazolam is used as IV short acting anesthetic.
 أحد واحد في المجموعة
4. Skeletal ms relaxation
 مضاد التشنجات
5. Anticonvulsant effect: clonazepam is used in petit mal epilepsy (absence seizures)
 انقباض المؤقت
6. Anterograde amnesia: inability to remember events during drug's action.

طبع ما هو الجسمي لارتفاعه يترك
سألت شوبها، أنا مش حقدك
NO PERIPHERAL EFFECTS



ما لها اي
تاثير Periphera

أحد واحد في المجموعة

Therapeutic uses

Barbiturates

1. Phenobarbital:

a) Treatment of grand mal epilepsy (tonic-clonic seizures).

b) Treatment of neonatal jaundice to activate liver enzymes (glucuronyl transferase) and fasten metabolism of bilirubin.

2. Thiopental is used as ultra-short i.v. anaesthetic in short procedures.

فقط ليندوا هرون
من مجموع
Barbiturate.

العمليات

Benzodiazepines

1. Anxiety disorders: e.g.

Generalized anxiety disorders (GAD). (كوتر عام) انه انت

Panic attacks

Social phobia (social anxiety disorder). سبب

الخوف من مكانة / مخيفة
الخوف من مكانة / مخيفة
الخوف من مكانة / مخيفة

BDZ are effective for the short-term management (<6 weeks) of these anxiety disorders. SSRIs are now considered the first-line choices for the long-term management of anxiety disorders.

تستخدم
في علاج التوتر
المستمر لا أكثر من 6 أسابيع

2. Insomnia: BZDs that have a rapid onset and sufficient duration are widely used (e.g., temazepam).

3. Anticonvulsants: clonazepam is used in treatment of absence seizures in children and diazepam (rectal) is used in management of febrile seizures.

مضاد
للتشنج

استئبان بسبب الحمى

4. Short surgical procedures: Shorter acting benzodiazepines (e.g. midazolam) are preferred before endoscopy. له حصة 19

Adverse effects

Barbiturates

Benzodiazepines

1. **Tolerance and physical dependence:** due to:

a) $\downarrow$ sensitivity of GABA-A receptors

b) $\uparrow$ sensitivity of the excitatory transmitters such as NMDA glutamate receptors.

2. **Rebound insomnia** after discontinuation.

3. **Hangover:** a state of psychomotor depression occurs in the following day after the use of long acting drugs (i.e. residual effect).

4. **Respiratory and myocardial depression.**

4. **Memory disturbance.**



لے انت مشہور باجرات
کوسیہ

انہ مشہور باجرات
کوسیہ

دیکھ لیں

سے لو سبکی

کے لہا تو فہم

اپنے نوم

ملاحظہ منومات فی الیہ

بھی تاخیر

depression

Contraindications

ممنوع اعطائهم لهذا الدواء

1. Severe respiratory insufficiency

2. Sleep apnea syndrome

3. Acute narrow angle glaucoma

4. Pregnancy

5. With other CNS depressant drugs e.g. ALCOHOL

كثيرا بعدى

الPlacenta

Treatment of toxicity

كيف اعالج
ال toxicity
ال اضرار بسبب هذه (الاعلاج)

Barbiturates

1. Mechanical ventilation

2. IV fluids

3. Alkalinization of urine

Barbituric acid
هو

رطوبة انتكدة - رطوبة

elimination

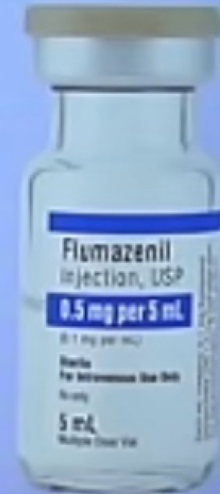
تنفس صناعي
تأخير

بعد يومين يصبح
لانه صارت الى
elimination

ب
س
الحامض

Benzodiazepines

FLUMAZENIL is the specific
antagonist



بطوره
من الممكنه