



Vivekananda Medical Care Hospital Allied Health sciences



Theme : The Art Of Gentle Sedation

This month edition is curated by
The Anescope Minds of:

**BSC.Operation Theatre And Anesthesia
Technology Students**

*The Student
Magazine*

EDITORIAL PANEL

Chief Patron

Prof.Dr.M.KARUNANITHI,B.Pharm.,M.S.,Ph.D.,D..Litt.
Chairman & Secretary

Advisory Board

Prof.Dr.R.S.HERMES MBA(HM).,PH.D,(FAHS),
Principal -AHS

Editorial Board

Mrs.J.JESMINI AJISHA,BSc.OTAT., Tutor

Miss.S.SUNMATHI,BSc.OTAT., Tutor

Mrs.A.RABEYA,M.PHARMACY., Assistant Professor

Students Coordinators

G.S.KANIGA, III BSc.OTAT.,

S.YASHWINI, III BSc.OTAT.,

T.RENSHEHA, III BSc.OTAT





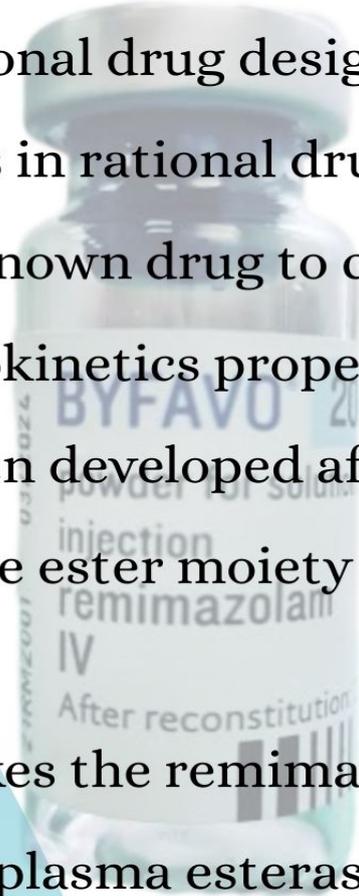
QUICK READ

- INTRODUCTION
- STRUCTURE
- PHARMACOKINETICS
- PHARMACODYNAMICS
- ADVERSE DRUG REACTION
- CONTRAINDICATIONS
- CLINICAL USES
- DOSAGE
- ADVANTAGES
- DISADVANTAGES
- TOXICITY
- CONCLUSION



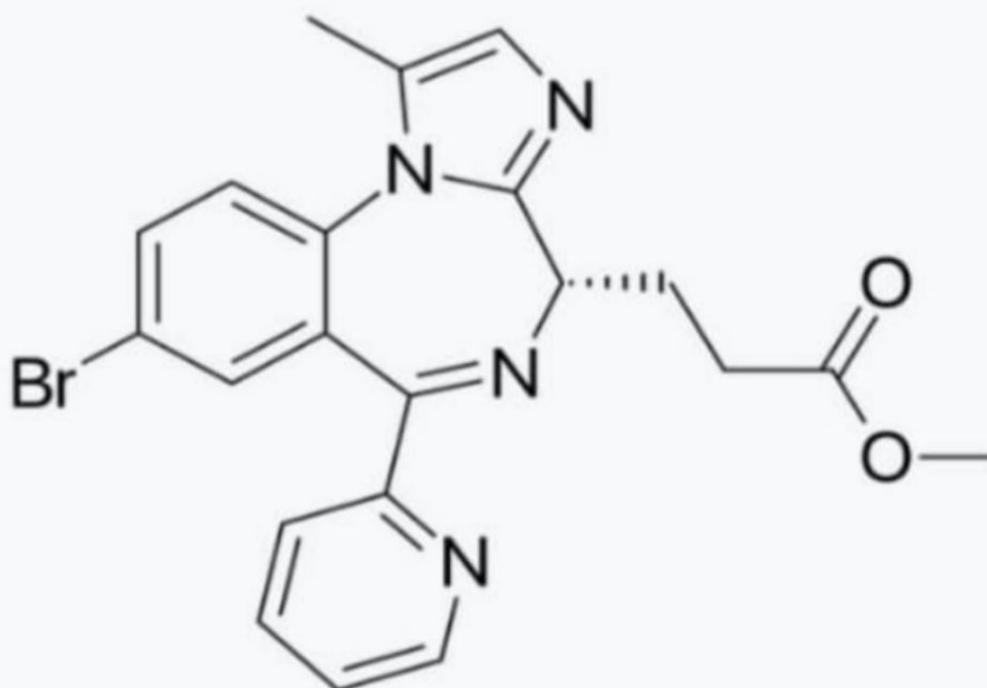
INTRODUCTION

- Remimazolam is an emerging intravenous sedative which is developed by rational drug designing.
- One of the approaches in rational drug designing is the modification of a known drug to create an analog with improved pharmacokinetics properties.
- Remimazolam has been developed after the incorporation of metabolically labile ester moiety into the benzodiazepine core.
- This modification makes the remimazolam highly susceptible to hydrolysis by plasma esterases.
- Because of its organ -independent metabolism, rapid and predictable onset and recovery, remimazolam appears to have potential advantages over other currently available short-acting sedatives Midazolam and Propofol .



STRUCTURE

Remimazolam



IUPAC NAME

Methyl

3-[(4S)-8-bromo-1-methyl-6-(pyridin-2-yl)-4H-imidazo
[2-a] benzodiazepin-4-yl]propanoate

PHARMACOKINETICS

Pharmacokinetics is the study of what the body does to a drug, including its absorption, distribution, metabolism, and excretion over time.

Absorption

- Administered intravenously :100%bioavailability
- Onset of action:1-3minutes

Distribution

- Rapid distribution to the central nervous system
- Distribution half-life:1~2minutes
- Moderate plasma protein binding

Metabolism

- Metabolized by non-specific tissue esterases converted into inactive metabolites.
- Organ independent metabolism
- Context -sensitive half-life :~6-7minutes

Excretion

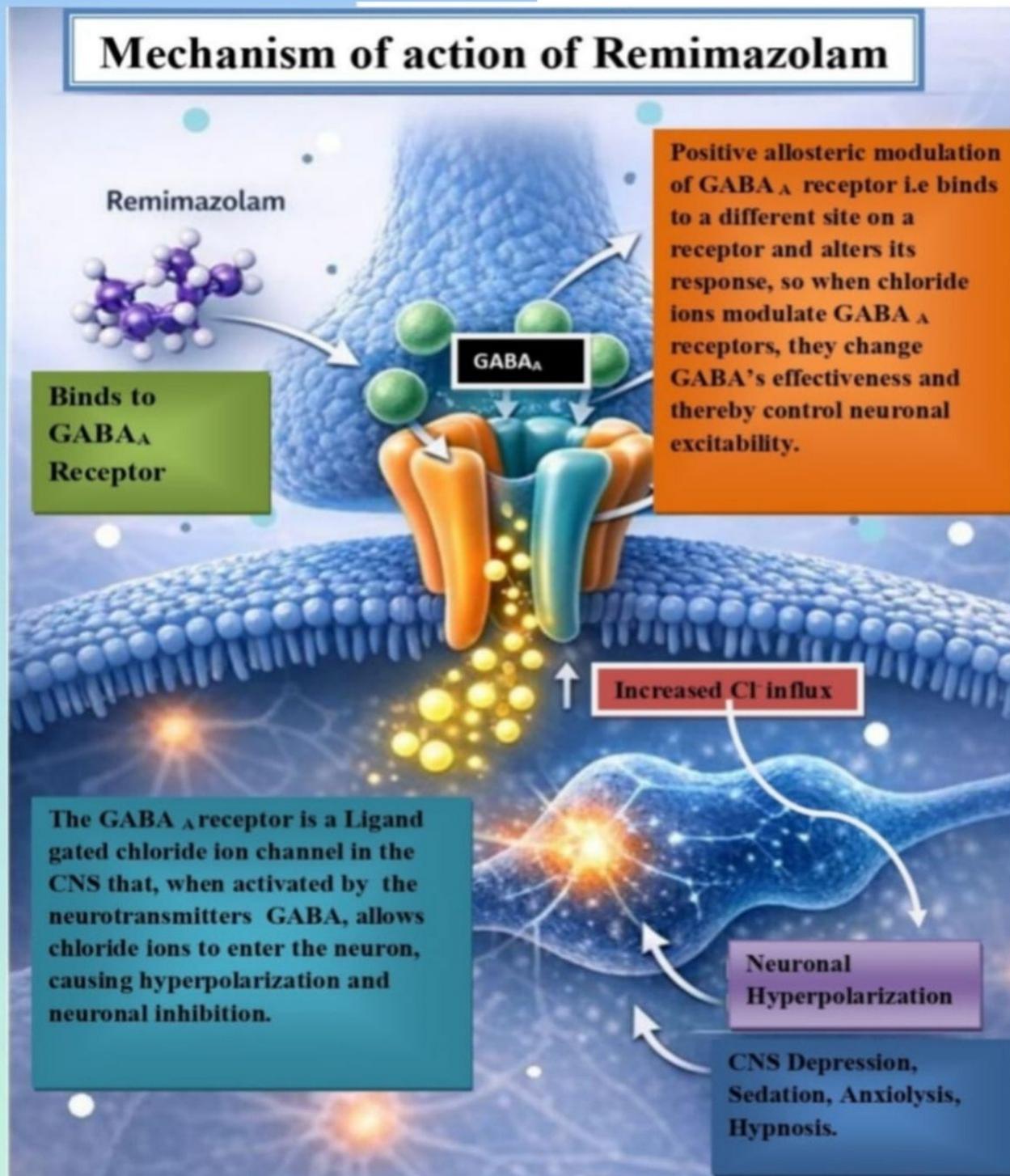
- Inactive metabolites excreted via kidney.
- Recovery time: usually 10-20minutes after stopping infusion.

Pharmacokinetics characteristics

- Remimazolam follows first order kinetics.As a result on prolonged infusion or on increasing dose not drug accumulation occurs and thus no residual effects observed.

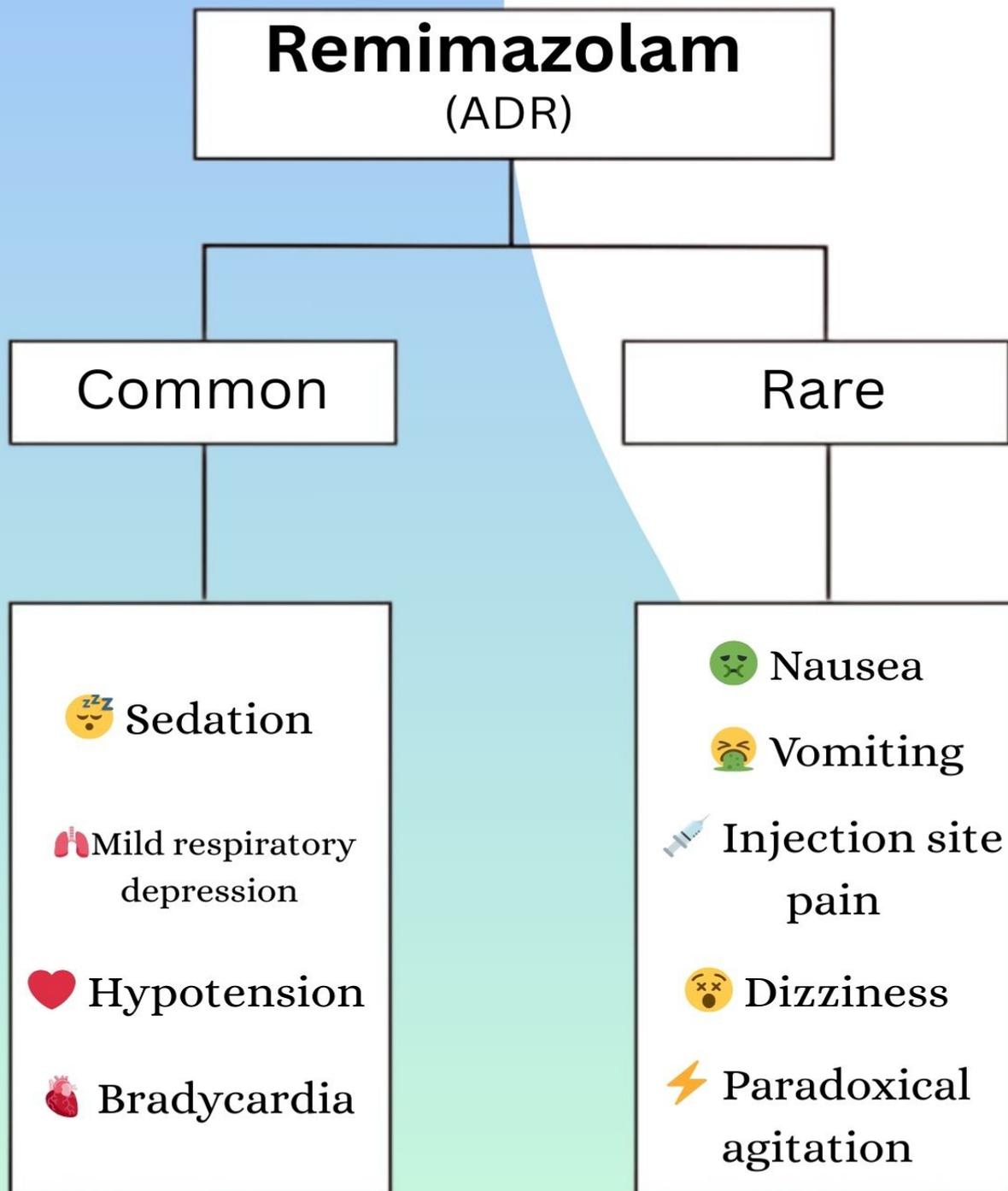
PHARMACODYNAMICS

Pharmacodynamics is the study of what a drug does to the body, including its mechanism of action, receptors interactions, and resulting physiological effects.



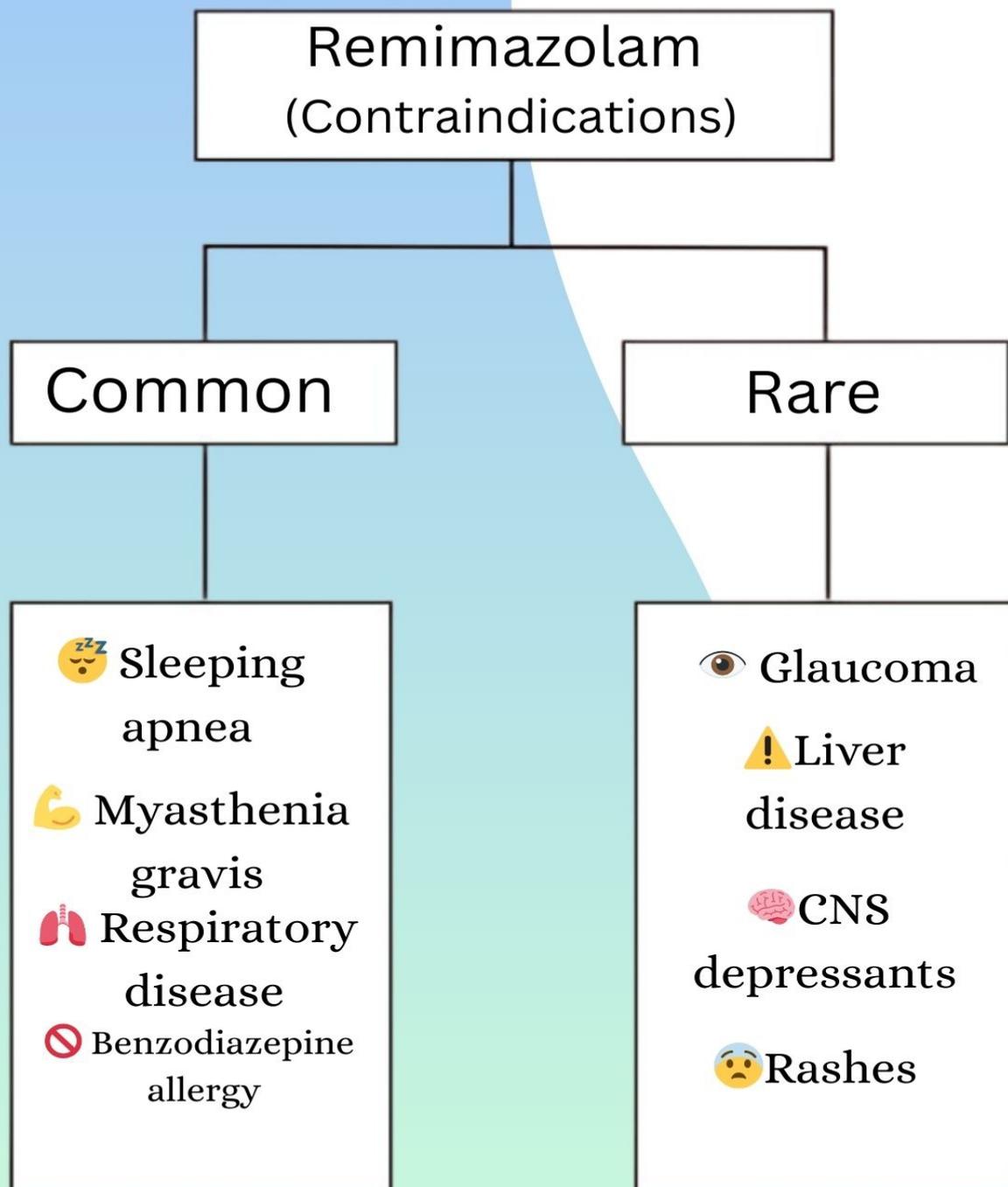
ADVERSE DRUG REACTION

Adverse drug reactions is specifically refers to a harmful and unintended response to a drug during normal use.

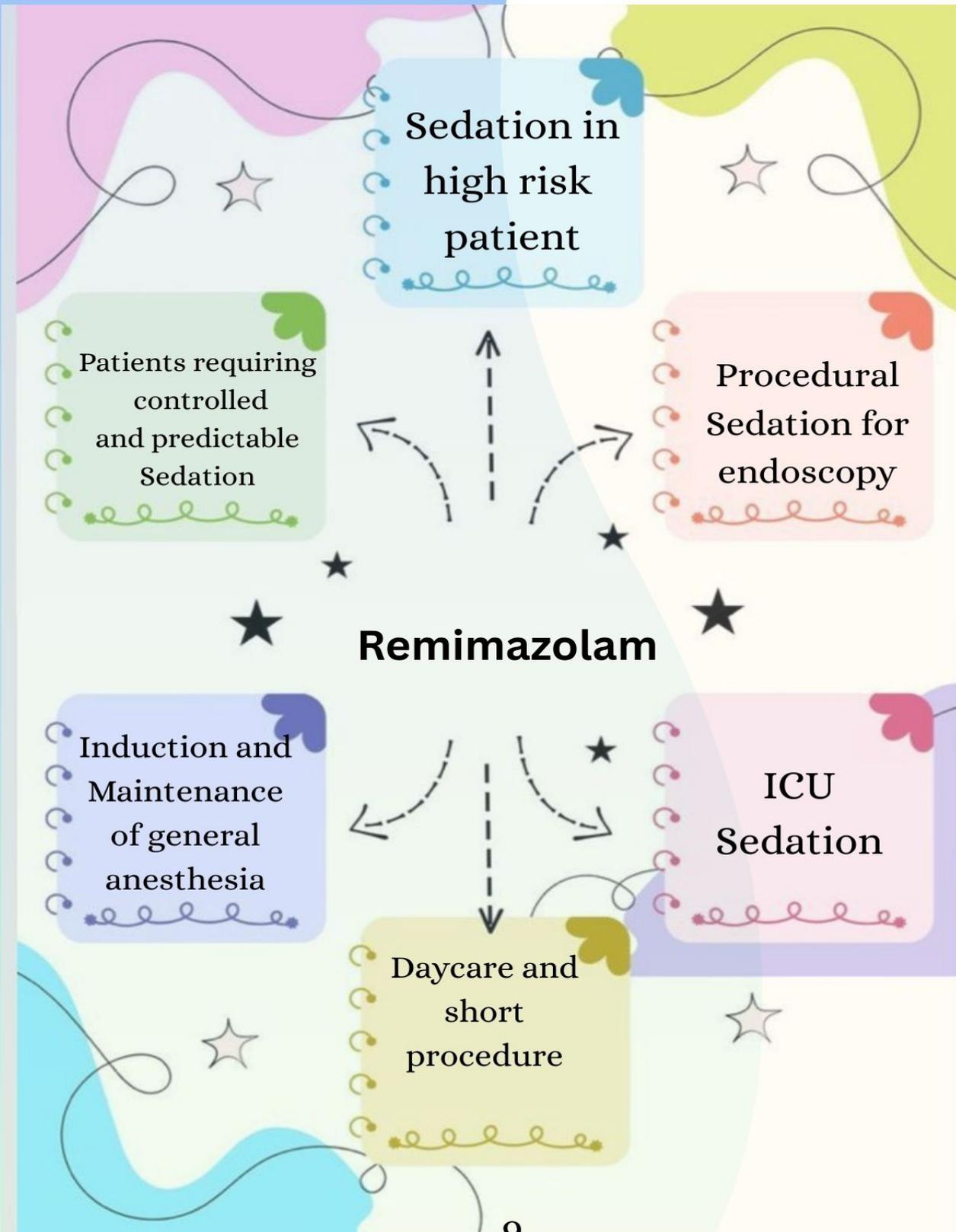


CONTRAINDICATIONS

A specific condition where a drug should not be used because it could be potentially harmful to the patient.



SPECIFIC AND SPECIAL USES



TYPICAL DOSING RANGES

Procedural Sedation (Endoscopy, Minor Diagnostics)

- Induction:0.1-0.2mg/kg IV bolus over 30-60sec
- Maintenance:0.05-0.1mg/kg IV bolus as needed,or infusion 0.5-1 µg/kg/min titrated to effect."

Balanced Anesthesia(With Opioid)

- Induction:0.15-0.25mg/kg IV
- Maintenance infusion:0.5-1 µg/kg/min, adjusted to target sedation depth(e.g.,BIS 40-60).

High risk/Elderly/Cardiac Patient

- Reduce bolus to 0.05-0.1mg/kg;start infusion at the lower end(0.3-0.5 µg/kg/min)and titrated carefully

Day care/Short Procedure

- Single bolus 0.05-0.1mg/kg; repeat 0.05mg/kg if needed after 2-3 min.No continuous infusion usually required.

ICU Short-term Sedation

- Loading dose0.05-0.1mg/kg(if not already sedated)
- Maintenance infusion 0.3-0.7 µg/kg/mins, titrated to RAA-S or RSO-S score

All the dosing should be individualized,with continuous monitoring of respiration,blood pressure and sedation depth.Have reversal agent (Flumazenil) and resuscitation equipment readily available.



ADVANTAGES

Rapid
recovery



Less
Hypotension and
respiratory
depression



Hemodynamically
more stable
than propofol

Advantages of
remimazolam



No drug
accumulation



Safe in hepatic
and renal
impairment

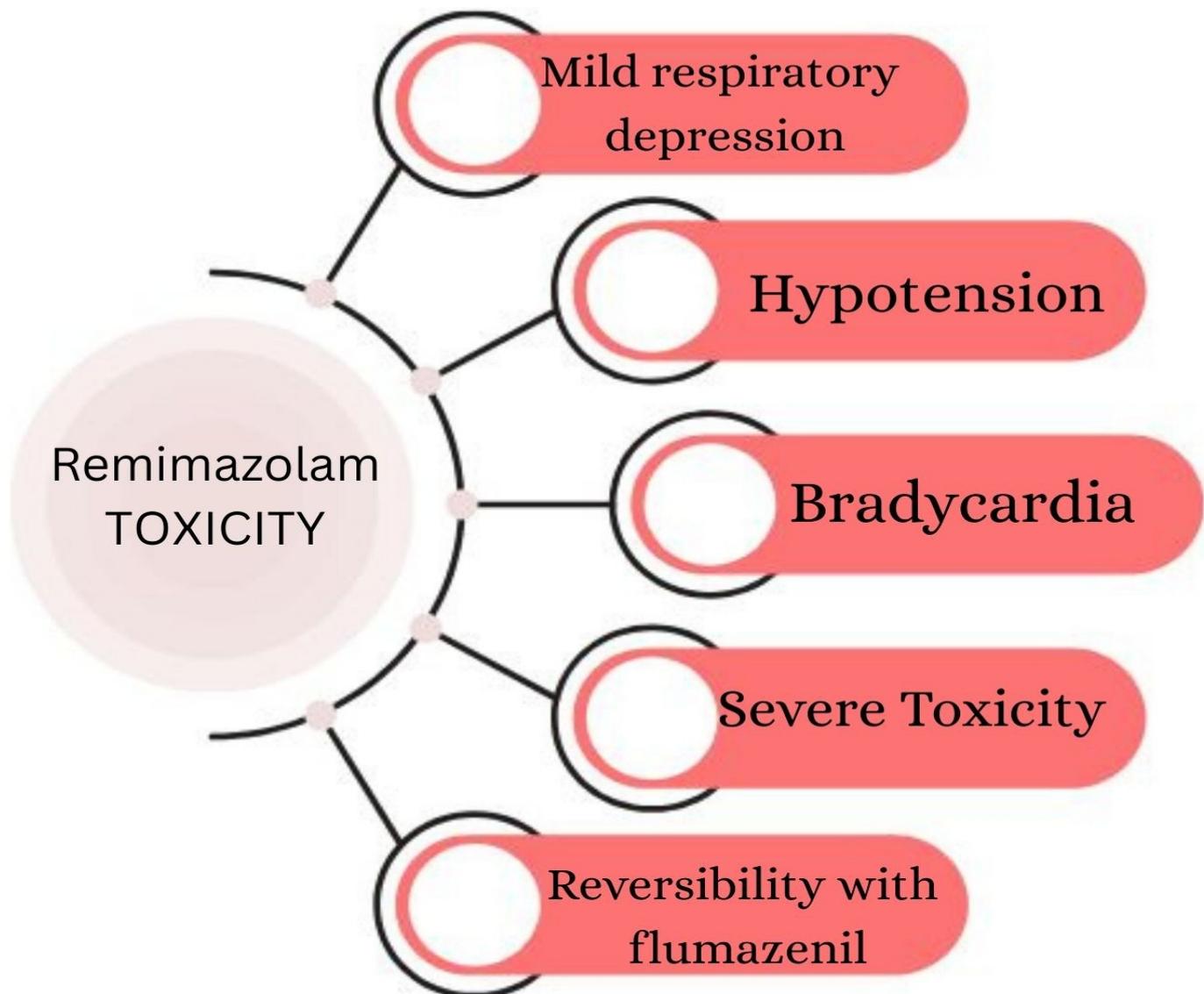
Can be reversed
with
flumazenil

DISADVANTAGES



TOXICITY

Toxicity is the degree to which a drug procedure harmful effects when administered in excessive dose or under inappropriate condition.



CONCLUSION

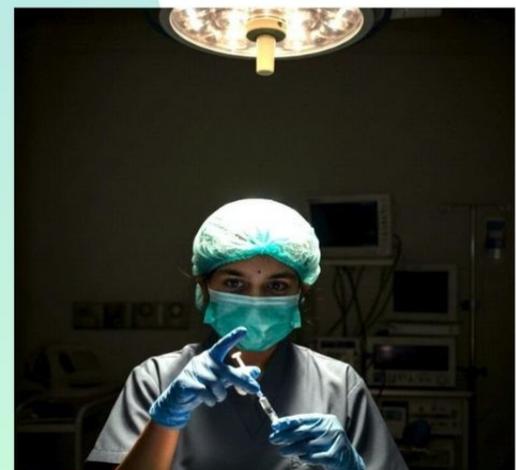
- Remimazolam is a novel short acting benzodiazepine used for sedation and anesthesia.
- It acts as a positive allosteric modulator of the GABA A receptor, enhancing inhibitory neurotransmitter.
- The drug produces rapid onset and predictable recovery due to fast metabolism .
- Excessive sedation is usually reversible,with flumazenil available as an antidote.
- Adverse effects are generally mild,dose dependent,and short lasting
- Proper patient selection and monitoring ensure safe and effective clinical use.



Students Hub

As an anesthesia technician student, my experience with sedative drug administration was both educational and practical. I learned how to prepare and handle sedative drugs safely, observed their administration, and understood the importance of monitoring vital signs and maintaining airway safety. The orientation emphasized aseptic techniques, drug safety, and the critical role of anesthesia technicians in supporting anesthesiologists during procedures.

This hands-on experience helped me connect theoretical knowledge with real OT practice and boosted my confidence in performing my role effectively.



VIVEKANANDA MEDICAL CARE HOSPITAL ALLIED HEALTH SCIENCES

Elayampalayam-637205,Tiruchengode-Tk,Nammakal Dt
Affiliated to the Tamil Nadu Dr.M.G.R. Medical University

S.No	Programmes Offered UG	Duration
1.	B.Sc.ACCIDENTAL AND EMERGENCY CARE TECHNOLOGY	4 years
2.	B.Sc.RADIOGRAPHY AND IMAGING TECHNOLOGY	4 years
3.	B.Sc.OPERATION THEATRE AND ANESTHESIA TECHNOLOGY	4 years
4.	B.Sc.CARDIAC TECHNOLOGY	4 years
5.	B.Sc.PHYSICIAN ASSISTANT	4 years
6.	B.Sc.MEDICAL LABORATORY TECHNOLOGY	4 years
7.	B.Sc.DIALYSIS TECHNOLOGY	4 years

KRISHNA INSTITUTE OF OPTOMETRY AND RESEARCH

8.	B.Sc.OPTOMETRY	4 years
----	----------------	---------



“Vidhya Rathna”

Prof. Dr. M. KARUNANITHI, B.Pharm., M.S., Ph.D., D.Litt.,
Chairman and Secretary

VIVEKANANDHA EDUCATIONAL INSTITUTIONS

TIRUCHENGODE CAMPUS

- ★ SWAMY VIVEKANANDHA MEDICAL COLLEGE HOSPITAL AND RESEARCH INSTITUTE
- ★ VIVEKANANDHA DENTAL COLLEGE FOR WOMEN
- ★ SWAMY VIVEKANANDHA COLLEGE OF PHARMACY
- ★ VIVEKANANDHA COLLEGE OF NURSING
- ★ VIVEKANANDHA SCHOOL OF ANM
- ★ SWAMY VIVEKANANDHA PHYSIOTHERAPY COLLEGE
- ★ VIVEKANANDHA ALLIED HEALTH SCIENCE COLLEGE (Co-Ed)
- ★ KRISHNA INSTITUTE OF OPTOMETRY AND RESEARCH
- ★ VIVEKANANDHA INSTITUTE OF HEALTH SCIENCE & RESEARCH (Boys)
- ★ KRISHNA INSTITUTE OF HEALTH SCIENCE (Boys)
- ★ VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN (AUTONOMOUS)
- ★ VIVEKANANDHA COLLEGE OF TECHNOLOGY FOR WOMEN
- ★ VIVEKANANDHA INSTITUTE OF INFORMATION AND MANAGEMENT STUDIES
- ★ VIVEKANANDHA COLLEGE OF ARTS AND SCIENCES FOR WOMEN (AUTONOMOUS)
- ★ VIVEKANANDHA COLLEGE FOR WOMEN
- ★ VIVEKANANDHA COLLEGE OF EDUCATION FOR WOMEN
- ★ VIVEKANANDHA VIDHYA BHAVAN MATRIC HIGHER SECONDARY SCHOOL
- ★ VIDYAA VIKAS MATRIC HIGHER SECONDARY SCHOOL (MOREPALAYAM)
- ★ VIVEKANANDHA MEDICAL CARE HOSPITAL (VMCH)

SANKAGIRI CAMPUS

- ★ SWAMY VIVEKANANDHA NATUROPATHY AND YOGA MEDICAL COLLEGE (Co-Ed)
- ★ VIVEKANANDHA PHARMACY COLLEGE
- ★ VIVEKANANDHA NURSING COLLEGE FOR WOMEN
- ★ VIVEKANANDHA ARTS AND SCIENCE COLLEGE
- ★ RABINDHARANATH TAGORE COLLEGE OF EDUCATION FOR WOMEN
- ★ VISWABHARATHI COLLEGE OF EDUCATION FOR WOMEN



Tiruchengode - 637 205, Namakkal Dt., Tamil Nadu.

Mobile : 94437 34670, 99655 34670

Sankagiri - 637 303, Salem Dt., Tamil Nadu.

Mobile : 94425 34564, 97888 54417

Website : www.vivekanandha.ac.in