

The Use of Midazolam for the Emergency Management of Seizures

What is midazolam?

Midazolam, also known as hypnovel, is a short acting benzodiazepine. It is a sedative or hypnotic drug mainly used for medical and surgical procedures.

Why is midazolam used for some people with epilepsy?

Most seizures are spontaneous, brief and self-limiting but some people with epilepsy can have seizures that continue unless there is emergency intervention. These seizures may be referred to as clusters, prolonged seizures or status epilepticus. Midazolam is used for the emergency management of seizures because it has the ability to stop the seizures very quickly. It may be prescribed for someone with epilepsy when:

1. A person has seizures that last longer than 5 minutes
2. A person has a pattern of cluster seizures – seizures that recur close together
3. A person has a history of status epilepticus
4. A person lives in a rural area and emergency services are unable to respond quickly.

How is midazolam given for seizure management?

Non-medical people can be trained to administer midazolam in the following ways:

1. Buccal – slowly trickled into the side of the mouth, between the gums and cheek
2. Intranasal – dripped slowly into the nasal passage from the ampoule or via a nasal atomiser device, which can attach to a syringe.

The blood vessels in the cheek and nose absorb the midazolam and the drug usually works quickly to stop the seizure. Ambulance officers and medical practitioners are able to give midazolam intramuscularly (into the muscle) or intravenously (into the vein).

How is midazolam packaged?

Midazolam is a clear, colourless liquid and is available in both plastic and glass ampoules (**only use the plastic ampoules**)¹. Traditionally, this medication has been designed for hospital use and will be labeled for 'slow IV' (intravenous), or 'IM' (intramuscular) use, but can also be administered via the buccal or intranasal route.

The drug can be dispensed in two ways for administration by non-medical people:

1. A 5mg: 1ml plastic ampoule (**remember, don't use the glass ampoule**) or
2. Your pharmacist can prepare the midazolam in a plastic syringe. The correct dose is pre-drawn in each syringe and the drug is dispensed from the syringe without needing to attach a needle. The drug has a much shorter shelf life if prepared by the pharmacist in a syringe compared to the plastic ampoules.

Possible side-effects of midazolam

- Drowsiness, tiredness, weakness, nausea
- Rare side-effects: agitation and mood alteration. Shallow and slow breathing where mouth to mouth resuscitation may be required.

A test dose under medical supervision may be recommended or the ambulance can be called prior to the administration of the first dose. This issue should be discussed with the prescribing doctor before the medication is used for the first time.

Storage

- Keep out of reach of children
- Protect from light and store at room temperature (below 25° C)
- Regularly check the expiry date.

What information do you need from the doctor if midazolam is prescribed?

The Epilepsy Foundation of Victoria has an Emergency Medication Management Plan for the prescribing doctor to complete. This should be signed and dated and include the following essential information:

1. How much to give – dose will be written as _____ mg _____ ml, and which route (buccal or intranasal)
2. When to give the first dose and for which seizure type
3. If a second dose can be given, the dose and when it is to be given must be specified
4. How many doses can be given in a 24-hour period
5. When to call an ambulance.

If you are required to give midazolam, consider the following:

For families, carers and support workers:

1. Training should be person or client specific
2. It is important you understand and follow the Emergency Medication Management Plan. You must know the dose and for which seizure type and at what time you are instructed to give the medication
3. You know when to call the ambulance
4. You know how to do CPR.

Additional considerations for workers:

1. Your CPR first aid certificate is current
2. You understand and follow your workplace policies in relation to managing epilepsy and administering medication
3. Your workplace should arrange training for you prior to administering midazolam for the first time.

Training and support

The Epilepsy Foundation of Victoria provides training in the administration of midazolam and the development of Emergency Medication Management Plans for family or staff supporting a person with epilepsy. Contact the Epilepsy Foundation of Victoria for further information about training and any costs involved.

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- 1 Glass ampoules cannot be put into a person's mouth directly for buccal administration. Glass ampoules increase the risk of injury due to possible breakage and the need to use a needle and syringe to draw up the medication.

For more information

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