

## Factsheet

### Buccolam® (midazolam) 10 mg in 2 mL oromucosal solution

### Management of seizures in adult patients

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July 2017	V2.1	RFL contact details added
December 2021	V3	Routine review and update

#### FACTSHEET TO FACILITATE PRESCRIBING

PLEASE NOTE THIS IS NOT A SHARED CARE GUIDELINE, NOR IS IT A FULL SUMMARY OF DRUG INFORMATION. ALWAYS REFER TO THE MOST RECENT BNF AND/OR SUMMARY OF PRODUCT CHARACTERISTICS.

#### Disclaimer

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# Factsheet: Buccolam® (midazolam) 10mg in 2mL oromucosal solution for management of seizures in adult patients

## *Indication information*

As per local formulary agreement, Buccolam® oromucosal solution may be prescribed for adult patients prone to generalised seizures (lasting longer than 5 minutes), clusters of seizures or status epilepticus.

### **The hospital team can:**

1. Provide the patient with initial information regarding the treatment and possible adverse effects
2. Initiate treatment and provide at least 4 doses of Buccolam® oromucosal solution in the form of pre-filled syringes.
3. Patients will be issued with individualised care plans and ensure the patient/carer understands how and when to give the medication.
4. An identified member of the specialist team, in many cases the epilepsy specialist nurse, will oversee the training of the patient/carer and develop an individual care plan for use. If a patient lives in a care home, training will only be provided to the named/main carer by the epilepsy specialist nurse. Responsibility for the training of additional care home staff lies with the care home.
5. Clinically supervise patient by routine clinic follow-ups every 3- 6 months (depending on initial assessment of each individual patient) and monitor response to treatment

## **Dose and Administration**

The adult dose of Buccolam® (midazolam) oromucosal solution is 10 mg. This is available as a 10mg in 2 mL prefilled syringe.

Patients may recognise the 10 mg dose as an orange syringe

This preparation should be administered into the buccal space. This refers to the area between the lower gums and the inner cheek area of either side of the mouth.

## **Prescribing**

Buccolam® should be prescribed by **brand** name (e.g. Buccolam® 10 mg in 2 mL oromucosal solution). It is presented as a prefilled syringe (4 syringes per pack).

It should not be interchanged with any other unlicensed midazolam oromucosal solution preparations as they may have different absorption characteristics. Other strengths of midazolam oromucosal solution are listed on GP prescribing software – be cautious to select the correct strength.

Buccolam® (midazolam) oromucosal solution is a schedule 3 controlled drug. It is currently licensed for seizures in children and adolescents (3 months to < 18 years) – its use in adults is an “off-label” use of a licensed medication.

Before prescribing Buccolam® the patient and their family/carers should be informed that it is a controlled drug.

The details of the drug treatment must be written on a medication form used within the relevant establishments in the NHS Trusts/other organisations and the patient will be issued with an individual care plan.

The full amount of solution should be inserted slowly into the back of the space between the gum and cheek, avoiding contact with the tongue, and the cheek pressed and massaged immediately to retain the solution and assist absorption. If necessary to avoid risk of aspiration, half the dose should be given slowly into one side of the mouth, then the other half given slowly into the other side.

The first effects of Buccolam® should be seen after approximately five minutes and the condition controlled within 10 minutes.

**The manufacturer of Buccolam® (midazolam) oromucosal solution advises that carers should only administer a single dose of midazolam and that if the seizure has not stopped within 10 minutes after administration, emergency medical assistance must be sought and the empty syringe given to the healthcare professional to provide information on the dose received by the patient. Individual patient care plans may recommend different advice from this depending on their personal circumstances. Information on repeated doses is decided on an individual patient basis and this is covered in the patient's care plan.**

**An ambulance should be called following administration of Buccolam® (midazolam) oromucosal solution if this is the first episode requiring emergency treatment.**

Please note that since Buccolam® (midazolam) oromucosal solution is a schedule 3 controlled drug, the following persons only can administer the drug to the patient:

- A doctor
- A nurse
- A paramedic who has undergone appropriate training
- A named carer or person trained in the administration of midazolam oromucosal solution

In care home settings a formal document should be created for each patient detailing:

- Name, DOB and third unique identifier for patient
- Name, form and strength of the prescribed medication
- Dose to be given and time
- Current accurate description or pattern of seizure and which seizures should be treated with midazolam
- Named person/people authorised to carry out this procedure i.e. parents, carers, and nurses
- Interval between doses
- Maximum number of doses to be given before medical assistance is sought.
- Space to record the date and time that midazolam oromucosal solution has been administered

#### ***Renal impairment:***

No dose adjustment is required; however, midazolam should be used with caution in patients with chronic renal failure particularly among the critically ill as elimination of midazolam may be delayed and the effects prolonged

#### ***Hepatic impairment:***

Hepatic impairment reduces the clearance of midazolam with a subsequent increase in terminal half-life. Therefore, the clinical effects may be stronger and prolonged, hence careful monitoring of the clinical effects and vital signs is recommended following administration of midazolam in patients with hepatic impairment.

Midazolam is contraindicated in patients with severe hepatic impairment

#### **Adverse Effects**

Common ( $\geq 1/100$  to  $< 1/10$ ): sedation, somnolence, depressed levels of consciousness, respiratory depression, nausea and vomiting. All patients receiving midazolam are likely to be drowsy for several hours after administration

Serious: Agitation, restlessness and disorientation have been reported.

### **Contraindications**

Hypersensitivity to the active substance, benzodiazepines or to any of the excipients, myasthenia gravis, severe respiratory insufficiency, sleep apnoea syndrome and severe hepatic impairment

### **Special Warnings and Precautions for Use**

Midazolam should be used with caution in patients with chronic respiratory insufficiency because midazolam may further depress respiration.

Midazolam should be used with caution in patients with chronic renal failure, impaired hepatic or cardiac function. Midazolam may accumulate in patients with chronic renal failure or impaired hepatic function whilst in patients with impaired cardiac function it may cause decreased clearance of midazolam.

Debilitated patients are more prone to the central nervous system (CNS) effects of benzodiazepines and, therefore, lower doses may be required. Midazolam should be avoided in patients with a medical history of alcohol or drug abuse. Midazolam may cause anterograde amnesia.

### Pregnancy

Insufficient data are available on midazolam to assess its safety during pregnancy. Animal studies do not indicate a teratogenic effect, but foetotoxicity was observed as with other benzodiazepines. No data on exposed pregnancies are available for the first two trimesters of pregnancy. The administration of high doses of midazolam in the last trimester of pregnancy or during labour has been reported to produce maternal or foetal adverse reactions (risk of aspiration of fluids and stomach contents during labour in the mother, irregularities in the foetal heart rate, hypotonia, poor suckling, hypothermia and respiratory depression in the new-born infant). Midazolam may be used during pregnancy if clearly necessary. The risk for new-born infants should be taken into account in the event of administration of midazolam in the third trimester of pregnancy.

### Breast-feeding

Midazolam passes in low quantities (0.6%) into breast milk. As a result it may not be necessary to stop breast feeding following a single dose of midazolam. For further information seek specialist advice.

### **Drug Interactions**

Midazolam is metabolized by CYP3A4. Inhibitors and inducers of CYP3A4 have the potential to respectively increase and decrease the plasma concentrations and, subsequently, the effects of midazolam thus requiring dose adjustments accordingly. Pharmacokinetic interactions with CYP3A4 inhibitors or inducers are more pronounced for oral as compared to oromucosal or parenteral midazolam as CYP3A4 enzymes are also present in the upper gastro-intestinal tract. After oromucosal administration, only systemic clearance will be affected. After a single dose of oromucosal midazolam, the consequence on the maximal clinical effect due to CYP3A4 inhibition will be minor while the duration of effect may be prolonged. Hence, a careful monitoring of the clinical effects and vital signs is recommended during the use of midazolam with a CYP3A4 inhibitor even after a single dose.

St John's Wort decreased plasma concentrations of midazolam by about 20-40% associated with a decrease in terminal half-life of about 15-17%. Depending on the specific St John's Wort extract, the CYP3A4-inducing effect may vary.

### *Pharmacodynamic Drug-Drug Interactions (DDI)*

The co-administration of midazolam with other sedative/hypnotic agents and CNS depressants, including alcohol, is likely to result in enhanced sedation and respiratory depression.

Alcohol (including alcohol-containing medicinal products) may markedly enhance the sedative effect of midazolam. Alcohol intake should be strongly avoided in case of midazolam administration.

*Please refer to SPC/BNF for full information on interactions with drug name and how to manage these interactions.*

### **Clinical Monitoring**

No specific monitoring is required for midazolam oromucosal solution.

GP's should review their patients as per their normal practice. Specific monitoring will be outlined in the patient's care plan.

The patient or carer should keep a record containing details of every occasion Buccolam® is administered.

### **Storage**

As for all medicines, midazolam should be stored in a safe place out of reach of children. The oral syringe should be kept in the individual protective plastic tube and ideally should be stored in closed cupboard or medicine box. The pack may be used until the expiry date on the box. Do not refrigerate or freeze. Care homes should follow their internal policy on storage and registry of Schedule 3 controlled drugs.

### **Contact Details**

**In an emergency situation an emergency ambulance must be called as outlined in the care plan.**

<b>North Middlesex University Hospital</b> 020 8887 2444
<b>University College Hospitals NHS Foundation Trust, Department of Clinical and Experimental Epilepsy</b> Please contact individual consultants' secretaries' via switchboard  Epilepsy nurse specialists' advice line on 020 3448 8627 or by email: <a href="mailto:uclh.epilepsy@nhs.net">uclh.epilepsy@nhs.net</a>  Please note that this is not an emergency service. It is a voicemail service and whilst calls are usually returned within 24 hours, it can sometimes take longer than this to get a response.
<b>Royal Free London NHS Foundation Trust</b> Please contact: Epilepsy specialist nurse on 020 7830 2864 ext 36113 or <a href="mailto:adina.nash@nhs.net">adina.nash@nhs.net</a> Epilepsy clinical pathway administrator on 020 7830 2864 Please note this is not an emergency service. Calls are usually returned within 24 hours.
<b>Whittington Hospital NHS Trust</b> Neurology email <a href="mailto:whh-tr.NeurologyInternalReferrals@nhs.net">whh-tr.NeurologyInternalReferrals@nhs.net</a> Alternatively contact Neurologist or on-call Registrar via hospital switchboard

## References

1. Summary of Product Characteristics. Buccolam oromucosal solution **2.5mg, 5mg, 7.5mg and 10 mg**. Accessed via <https://www.medicines.org.uk/emc/product/7460> on 19/08/20. Date of last revision of text 27/07/2020
2. Prevention of Harm with Buccal Midazolam | Signal. National Reporting and Learning System, National Patient Safety Agency. February 2012. Ref 1329. <http://www.nrls.npsa.nhs.uk/resources/type/signals/?entryid45=132975>
3. MHRA. Buccal midazolam: new authorised medicine for paediatric use. Care needed when transferring from unlicensed formulations. October 2011. <https://www.gov.uk/drug-safety-update/buccal-midazolam-buccolam-new-authorised-medicine-for-paediatric-use>

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