CLINICAL GUIDELINE

Motor Neurone Disease – Saliva Control Guidance, Acute & Primary Care

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

Version Number:	2
Does this version include changes to clinical advice:	Yes
Date Approved:	27th October 2023
Date of Next Review:	30th September 2026
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Approval Group:	Medicines Utilisation Subcommittee of ADTC

Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Motor Neurone Disease – Saliva Control Guidance, Acute & Primary Care

This guideline outlines the general management of patients with motor neurone disease (MND) who require pharmacological management of hypersalivation. General Practitioners may be asked to prescribe from this guideline on the advice of an MND specialist. Hypersalivation is often referred to as sialorrhoea or drooling. It affects up to 50% of people with MND and in 42% of these individuals the symptom is poorly controlled. In most cases, saliva problems are the result of poor lip seal and/or impaired ability to swallow, rather than increased saliva production. Patients may complain of excessive, watery saliva or thick, mucousy saliva and it is important to distinguish between the two symptoms as they are both managed differently.

Historically, a range of drugs with antimuscarinic actions have been used in an attempt to control hypersalivation. Blockade of cholinergic muscarinic receptors reduces salivary volume, but a lack of selectivity may result in widespread and undesirable central and peripheral effects, including drowsiness, restlessness, irritability, urinary retention, constipation, and flushing.

There are no randomised controlled comparative studies for the management of hypersalivation in MND, so prescribers should consider evidence for effectiveness, potential side effects and available routes of administration when choosing between them. **Of the medicines listed in the following tables only Xeomin® is licensed for chronic sialorrhoea due to neurological disorders: all others are off-label use.** It is common practice within treatment of MND patients to use a licensed drug for an unlicensed indication. This is supported by experience in clinical practice.

NICE guidance on MND was published in 2016. For sialorrhoea, this guideline recommends an anticholinergic as first-line treatment and referral to a specialist for botulinum toxin type A where first-line treatment is not effective, not tolerated or is contra-indicated. No specific antimuscarinic is recommended except where the patient has cognitive impairment and glycopyrronium should be used first-line as it has fewer central nervous system side effects.

Excessive, Watery Saliva

There are various pharmacological treatments which have been used in the management of hypersalivation. The choice of drug should be based on its pharmacological and adverse effect profile. The table below aims to provide consensus based recommendations from the MND specialist team in the absence of a strong evidence base.

These medicines can be used in combination for additive effects. Monitor patient for side effects e.g. constipation, urinary retention, dry mouth, sedation, delirium. These medicines are contraindicated in: narrow angle glaucoma, myasthenia gravis, megacolon, pyloric stenosis, paralytical or obstructive ileus.

Refer to Summary of Product Characteristics (SPC) for each drug for full list of adverse effects, cautions and contraindications.

First line options *(choose according to availability and side effect profile)*				
Medicine	**Route**	**Dose**	**Administration**	**Comments**
Hyoscine 1.5mg (Scopoderm®) patches (1mg in 72 hours)	Transdermal patch	1 – 2 patches every 72 hours Patches may be halved if side effects with full patch	Apply to hairless skin behind the ear and replace patch after 3 days behind the other ear Please refer to page 4 additional comments for prescriber and patient/carer advice on administering half a patch	Steady state concentrations allow for a low incidence of systemic side effects Remove before medical scans e.g. MRI (patch contains aluminium)
Hyoscine hydrobromide 300microgram (Kwells®) tablets	Sublingual	300 micrograms two or three times daily	Suck, chew or swallow tablet	Tablets may be dissolved and given via enteral tube but absorption may be variable May cause drowsiness as crosses blood brain barrier
Hyoscine hydrobromide 0.15mg (Joy-rides®) tablets	Chewable tablets	0.3mg three to four times daily	Tablets should be chewed and swallowed	
Glycopyrronium 1mg/5ml (Colonis Pharma®) oral solution	Oral, nasogastric or gastrostomy	0.5mg daily; can be increased by 0.5mg up to a maximum of 2mg three times daily.	Available as a pharmaceutical “special” product	Long acting and does not cross blood brain barrier, therefore central side effects minimal First line choice in cognitive impairment
Glycopyrronium 1mg tablet			Tablets are scored and can be halved or crushed if required	
Hyoscine butylbromide 10mg (Buscopan®) tablets	Oral, nasogastric or gastrostomy	10-20mg three or four times daily	Tablets can be crushed but sugar coating may block nasogastric feeding tubes	Absorption from gastrointestinal tract is poor, but may be easiest medicine to obtain

Second line options

Medicine	Route	Dose	Administration	Comments
Amitriptyline tablets	Oral, nasogastric or gastrostomy	10 – 50mg at night	Oral solution available Tablets can be crushed and dispersed in water (may taste bitter)	Sedative properties may limit use to night time. Caution in patients already on antidepressants
Atropine 1% eye drops	Sublingual	2 – 4 drops up to four times daily (optimal dose not established)	Potential for accidental over/under dosing if patients have difficulty using drops	Avoid in cognitive impairment, dementia and hallucinations. Do not administer into the eyes for this indication
Botulinum toxin type A (Xeomin®)	Salivary gland injection	N/A (specialist use only)	Invasive procedure requiring specialist expertise for administration	Xeomin® is the only botulinum toxin licensed for hypersalivation

Third line options *(mainly palliative care - if requiring multiple "prn" doses, consider continuous subcutaneous infusion)*

Medicine	Route	Dose	Administration	Comments
Hyoscine butylbromide (Buscopan®) injection	Subcutaneous injection	20mg, hourly as required (max 120mg/24 hours)	Maximum volume 2ml as subcutaneous injection	1st line; non-sedative Use with caution in patients with cardiac disease (risk of serious adverse effects e.g. tachycardia, anaphylaxis)
	Continuous subcutaneous infusion (CSCI)	40mg – 120mg over 24 hours	Dilute with water for Injection	
Glycopyrronium bromide Injection	Subcutaneous injection	200 micrograms, 6 to 8 hourly as required	Maximum volume 2ml as subcutaneous injection	2nd line; non-sedative Longer duration of action than hyoscine
	Continuous subcutaneous infusion (CSCI)	600 – 1200 micrograms over 24 hours	Dilute with water for Injection	
Hyoscine hydrobromide injection	Subcutaneous injection	400 micrograms, 2 hourly as required	Maximum volume 2ml as subcutaneous injection	3rd line; sedative Can precipitate delirium
	Continuous subcutaneous infusion (CSCI)	400 – 1200 micrograms over 24 hours	Dilute with water for Injection	

Additional comments

Hyoscine patches are often cut in practice, however the manufacturer cannot recommend this and state that efficacy and safety have not been evaluated when the patch is administered in this way. Patients and carers should be advised to report any leakage from the patch. Patches have also been occluded to prevent a portion of an intact patch coming into contact with the skin. Prescribers should be aware that cutting or occluding the patch would be off-label use of the medication. It is good practice to gain informed consent from patients. Patients and carers should wash their hands thoroughly after handling the patch to minimise the risk of transferring hyoscine to the eye.

Hyoscine butylbromide tablets are soluble in water and have been crushed however the manufacturer cannot recommend this. Prescribers should be aware that use would be off-label. It is good practice to discuss this with the patient where possible.

Thick, Mucousy Saliva

This can be very distressing for patients and may be caused by dehydration, mouth breathing, or saliva evaporating in the mouth. If patient is distressed, consider sublingual lorazepam 0.5-1mg if required or propranolol 10mg twice daily for anxiety. For thick, tenacious saliva, humidification, saline 0.9% nebulisers, carbocisteine 750mg TDS (reducing to 500mg TDS) or acetylcysteine effervescent tablets (600mg once daily) are recommended as first line options (caution in patients with poor cough). Other recommended measures include:

• Review need for / dose of anticholinergics • Ensure adequate hydration (2L/day) • Consider eliminating mucus thickening agents e.g. dairy products	• Suck on crushed ice (if swallow safe) • Suck boiled sweets to stimulate saliva (if swallowing safe) • Pineapple (puree/juice) dilutes saliva • Reduce alcohol and caffeine intake

References

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For further specialist advice, please contact the MND Clinical Nurse Specialists on Tel: 0141 201 2380 or 2381.