BNSSG Shared Care Guidance
Please complete all sections

Section 1: Heading

Drug	Glycopyrronium Bromide
Amber *three months*	
Indication	Hypersalivation (sialorrhoea)/ saliva management in people with swallowing problems (bulbar dysfunction) and with neurological conditions, motor neurone disease (MND) or Parkinson's Disease (PD) in line with the Hypersalivation pathway.

Section 2: Treatment Schedule

Usual dose and frequency of administration *(Please indicate if this is licensed or unlicensed and any relevant dosing information)*	1 - 6mg daily in divided doses. Low doses may be initiated and titrated upwards to minimise the risk of adverse effects including confusion. Specialist should consider reducing initial doses if renal function is impaired eGFR <30ml/min/1.73m^2
Route and formulation	Oral tablets and liquid (formulations 'off-label' for PD and MND). Glycopyrronium 1mg/5ml oral solution sugar free 1mg and 2mg oral tablets Costs between formulations vary considerably, where clinically appropriate, the most cost effective option should be prescribed.
Duration of treatment	Long-term whilst providing symptom relief

Section 3: Monitoring

Please give details of any tests that are required before or during treatment, including frequency, responsibilities (please state whether they will be undertaken in primary or secondary care), cause for adjustment and when it is required to refer back to the specialist.

Baseline tests - where appropriate			
Elimination of glycopyrronium is severely impaired in patients with renal failure so baseline renal function should be checked before initiation.			
Subsequent tests - where appropriate *(Please indicate who takes responsibility for taking bloods and interpreting results)*			
Continuing need will be reviewed with regard to symptom relief at hospital out-patient appointments.			
Test	Frequency	Who by	Action/management

Electrolytes	Not required specifically for this drug, but it is important that patients with existing Chronic Kidney Disease continue to have their kidney function monitored routinely in line with standard chronic condition monitoring requirements	GP Practice	If eGFR is 30ml/min or below- refer back to specialist

Section 4: Side Effects

Please list only the most pertinent side effects and management. Please provide guidance on when the GP should refer back to the specialist. For everything else, please see BNF or SPC.

Side effects and management

Side effect	Frequency/severity	Action/management
Antimuscarinic side effects: dry mouth, thirst, reduced bronchial secretions, vomiting, constipation, transient bradycardia	Very common	Refer back to specialist if troublesome adverse effects persist or a reduction in dose leads to treatment failure.
Flushing and dryness of the skin	Very common	Refer back to specialist if troublesome adverse effects persist or a reduction in dose leads to treatment failure.
Nasal congestion	Very common	Refer back to specialist if troublesome adverse effects persist or a reduction in dose leads to treatment failure.
Behavioural changes (including but not exclusively nervousness, mood changes, irritability)	Although described as very common in the SPC, occur much less often than with alternatives	Refer back to specialist if troublesome adverse effects persist or a reduction in dose

	<table><tr><td></td><td>such as hyoscine as glycopyrronium does not cross blood brain barrier.</td><td>leads to treatment failure.</td></tr></table>
Referral back to specialist	Urinary retention, intestinal pseudo-obstruction (that may present as abdominal distension, pain, nausea or vomiting) and incomplete mechanical intestinal obstruction (that may present as diarrhoea).

Section 5: Other Issues

(e.g. Drug Interactions, Contra-indications, Cautions, Special Recommendations)

Please list only the most pertinent action for GP to take (For full list please see BNF or SPC)

Issues	Many drugs have antimuscarinic side effects and combinations of two or more such drugs can increase side effects ***Increased antimuscarinic side-effects:*** amantadine; tricyclic antidepressants; antihistamines; clozapine; disopyramide; MAOIs; nefopam; pethidine; phenothiazines (increased antimuscarinic side effects of phenothiazines but reduced plasma concentrations) ***Possibly increased antimuscarinic side-effects:*** tricyclic (related) antidepressants ***Domperidone/Metoclopramide:*** antagonism of effect on gastro-intestinal activity ***Ketoconazole****:* reduced absorption of ketoconazole ***Levodopa****:* absorption of levodopa possibly reduced ***Memantine****:* effects possibly enhanced by memantine ***Nitrates:*** possibly reduced effect of sublingual nitrates (failure to dissolve under the tongue owing to dry mouth) ***Parasympathomimetics:*** antagonism of effect In common with other antimuscarinics: angle-closure glaucoma; myasthenia gravis (large doses of quaternary ammonium compounds have been shown to block end plate nicotinic receptors); paralytic ileus; pyloric stenosis; prostatic enlargement. Use with caution in the elderly. Use with caution in gastro-oesophageal reflux disease, ulcerative colitis, acute myocardial infarction, hypertension, conditions characterised by tachycardia (including hyperthyroidism, cardiac insufficiency, cardiac surgery) because of the increase in heart rate produced by its administration, coronary artery disease and cardiac arrhythmias. Diarrhoea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. As glycopyrronium bromide inhibits sweating, patients with increased temperature (especially children) should be observed closely. In the presence of a high environmental temperature, heat prostration (fever and heat stroke due to decreased sweating) can occur with use of glycopyrronium bromide.

	Because of prolongation of renal elimination, repeated or large doses of glycopyrronium bromide should be avoided in patients with uraemia. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine.
Reminder to ask patient about specific problems	Ask patient about perceived benefits of treatment and any troublesome side effects. Confirm medication history and take note of other medication which may have antimuscarinic effects.

Section 6: Advice to the patient

Advice for prescribing clinician to inform patient

1. Glycopyrronium Bromide may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery, or performing hazardous work while taking this drug.
2. Side-effects that occur occasionally include confusion (particularly in the elderly),
3. Nausea, vomiting, and giddiness; very rarely, angle-closure glaucoma may occur. Any loss of vision should be reported immediately.

Section 7: Generic principles of shared care for SECONDARY CARE

Please do not amend.

Core responsibilities

1. Initiating treatment and prescribing for the length of time specified in **section 1.**
2. Undertaking the clinical assessment and monitoring for the length of time specified in **section 1** and thereafter undertaking any ongoing monitoring as detailed in **section 3.**
3. Communicate details of the above in 1 and 2 to GP within the first month of treatment. This information should be transferred in a timely manner.
4. Refer patients to GP and provide information of further action where appropriate e.g. if blood test is due.
5. To provide advice to primary care when appropriate.
6. Review concurrent medications for potential interaction prior to initiation of drug specified in **section 1.**
7. Stopping treatment where appropriate or providing advice on when to stop.
8. Reporting adverse events to the MHRA.
9. Reminder to ask patients about particular problems see **section 5.**

Section 8: Generic principles of shared care for PRIMARY CARE

Please do not amend.

Core responsibilities

1. Responsible for taking over prescribing after the length of time specified in **section 1.**
2. Responsible for any clinical assessment and monitoring if detailed in **section 3** after the length of time specified in **section 1.**
3. Review of any new concurrent medications for potential interactions.
4. Reporting adverse events to the MHRA.
5. Refer for advice to specialist where appropriate.
6. Reminder to ask patients about particular problems see **section 5.**

Section 10: Contact Details

Name	Organisation	Telephone Number	E mail address

Consultant Neurologist	North Bristol NHS Trust	Via switchboard 0117 9505050	Click here to enter details
Neurology Registrar on call	North Bristol NHS Trust	Via switchboard 0117 9505050	Click here to enter details
Movement Disorders Consultant	University Hospitals Bristol and Weston NHS Foundation Trust	0117 342 1427	Click here to enter details
Click here to enter details	Click here to enter details	Click here to enter details	Click here to enter details

Section 11: Document Details

Date prepared	09/01/2023
Prepared by	Gemma Bray
Date approved by JFG	January 2023
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Section 12: Collaboration

All shared care protocols should be BNSSG wide where possible. Specialists in any one discipline are encouraged to collaborate across the health community in preparing shared care guidance. Please give details

1. Dr Andria Merrison, Consultant Neurologist, NBT
2. Movement Disorder team, Neurology NBT
3. Dr Emma Stratton, Movement Disorders Consultant, UHBW
4. Hippolyte Fraser, Frailty Pharmacist, UHBW

Section 13: References

Please list references

1. Summary product characteristics
2. BNSSG Hypersalivation Pathway (2020)