



The use of oral glycopyrronium in palliative care

June 2017

Summary

There is limited information on the use of oral glycopyrronium in palliative care. It has been used successfully to reduce drooling in motor neuron disease (MND)/ amyotrophic lateral sclerosis (ALS), in head and neck cancer, and in oesophageal cancer despite its poor oral bioavailability.¹ If glycopyrronium is to be used orally the lowest effective dose should be initiated and titrated according to response. The patient should also be monitored for any adverse effects. Please note, information has not been found to support the administration of oral glycopyrronium to treat excessive respiratory secretions at the end of life.

Mechanism of action

Glycopyrrolate is an anticholinergic agent which inhibits the acetylcholine activity on smooth muscles and structures innervated by postganglionic nerves.² This results in bronchodilation, decreased volume and acidity of gastric secretions, as well as control of excessive pharyngeal, tracheal and bronchial secretions.²

Pharmacokinetics

Oral glycopyrronium is poorly absorbed from the gastrointestinal tract.^{3,4,5} It is estimated that approximately 10-25% is absorbed following oral administration,⁴ however other sources have reported the bioavailability to be as low as 3-5%.^{1,3} Despite this, oral glycopyrronium is reported to produce anticholinergic effects which may persist for 8-12

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hours.⁵ Doses of 200-400 micrograms three times daily orally are reported to produce plasma concentrations associated with antisialogogic effects lasting up to 8 hours.¹ The onset of action of oral glycopyrronium is 30-40 minutes.¹

Recommended dose

For the treatment of drooling the Palliative Care Formulary advises the following:

- Start with 200 micrograms orally every 8 hours.¹
- If necessary the dose can be increased progressively every 2–3 days to 1mg every 8 hours.¹
- Occasionally doses of ≤ 2 mg every 8 hours are needed.¹
- The maximum adult oral dose is 8mg daily.⁵

A subsequent reduction in dose may be possible, particularly when initial dose escalation has been rapid.¹ Glycopyrronium should be given 1 hour before or 2 hours after meals.^{3,4,6}

Availability

Glycopyrronium oral solution is available in a number of concentrations as a special order. It is not licensed in Ireland but is available from specialist wholesalers. The oral solution may have a short expiry date. An oral solution Sialanar 320 micrograms /mL is now licensed in the UK for the symptomatic treatment of severe sialorrhoea in children and adolescents aged 3 years and older with chronic neurological disorders.⁶

Glycopyrronium tablets 1mg and 2mg are licensed in the USA. These tablets are unlicensed in Ireland but are available from specialist wholesalers. Glycopyrronium tablets are authorised as add-on therapy for the treatment of peptic ulcers.⁷ The recommended dose is 1-2mg two to three times daily and the maximum adult oral dose is 8mg daily.⁷

Glycopyrronium injection is not licensed for oral administration.⁸ However, there is information available to suggest that it may be diluted and administered orally.⁹

Reimbursement:

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Glycopyrronium oral solution 0.5mg/5mL and Glycopyrronium injection 200micrograms/mL are reimbursed on the Medical card (GMS) and Drugs Payment Scheme (DPS). Glycopyrronium 1mg and 2mg tablets are not reimbursed on the GMS or DPS.¹⁰

Enteral tube administration

Glycopyrronium is not licensed for administration via enteral feeding tube however information is available to support the following methods of administration^{9,11,12}

- The tablets can be dispersed in water^{11,12}
- The oral solution may be used^{9,11}
- The injection may be used^{9,11}

Common Adverse Effects

Side-effects of antimuscarinics include difficulty swallowing, thirst, constipation, urinary urgency and retention.³ Confusion (particularly in the elderly), nausea, vomiting, drowsiness, dizziness and angle-closure glaucoma are also associated with its use.³ The concomitant use of Glycopyrronium with other anticholinergic or antimuscarinic agents will further potentiate adverse effects.

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