Saliva management

Manage in consultation with a speech pathologist (MND Australia 2014).

MND Australia 2014

Drooling and pooled secretions

- anti-cholinergic medication will reduce and thicken saliva
- regular and excessive dosing may result in tenacious oropharyngeal secretions
- consider prn drug treatment - starting doses:
  - tricyclic antidepressants - e.g. imipramine 10 mg/amitriptyline 25mg at night
  - clonidine - 0.1 mg at night
  - glycopyrrolate - 0.4 mg subcutaneously up to three times a day or via a syringe driver. However, glycopyrrolate is not available on the PBS and may be difficult to obtain. It can usually be obtained through specialist palliative care services
  - botulinum injections - into the parotid glands are used effectively to treat sialorrhea in some MND clinics in Australia
  - atropine - anecdotal experience in community settings suggests that 1% strength atropine eye drops can be used orally to reduce saliva production. Drops can be diluted 1ml in 100ml of water and used as a mouth rinse up to three times a day. For patients who are physically unable to rinse their mouth 2 or 3 drops can be given sublingually up to 3 times a day

In the elderly, anticholinergic drugs are associated with a significant incidence of cognitive and behavioural decline.

Thick tenacious saliva

- check fluid intake
- Mucolytic agents: papaya enzyme, juices and ice cubes - grape, apple, pineapple and papaya.
- Frequent swabbing of the mouth: using plain water or a mouth wash of one teaspoon bicarbonate of soda or one teaspoon salt in a glass of water, especially after meals (avoid harsh mouthwashes)
- Nebulised saline may also be helpful.
- Consider treatment with propranolol or metoprolol
- Assisted cough technique can help
- extra water through the PEG, if available, can have a diluting effect

Dry mouth

- often related to mouth breathing during sleep
- Oral lubricants: Oralbalance gel, biotene, 100 parts grapeseed oil to 1 part peppermint oil
- Anticholinergic medication, especially at night, can exacerbate the problem

Young and others 2011
There is extremely limited evidence from randomized controlled trials about treatments to reduce sialorrhea in MND. The well designed trial on botulinum toxin type B injected into parotid and submandibular glands showed beneficial effects for four or more weeks (Jackson 2009).

Orrell 2010

A systematic review of botulinum toxin or radiotherapy for sialorrhoea in ALS was performed by Stone and O'Leary. Problems with saliva clearing or swallowing are common in patients with ALS/MND. A range of medications may be used, in particular anticholinergics including hyoscine and amitriptyline. In more serious cases, botulinum toxin or radiotherapy may be considered. They identified five studies, with 28 patients, of botulinum toxin injection, with benefit in some patients with intraglandular injection, but some problems with retrograde injection into the salivary ducts. Two studies, with 27 patients of radiotherapy, showed benefit. The small numbers and quality of the studies made it difficult to make firm conclusions.

Miller and others 2009b

Sialorrhea, or drooling, is embarrassing and is associated with aspiration pneumonia. The prevalence is estimated at 50%, and 70% of patients receiving oral medications for treatment reported benefit (Class III). In a small trial, amitriptyline and botulinum toxin type A (BTxA) seemed equally effective, although 3 of 5 patients treated with amitriptyline experienced side effects (Class III).

In a double-blind, controlled trial of botulinum toxin type B (BTxB) in 20 patients with ALS with refractory sialorrhea (Class I), patients were randomized to 2,500 U of BTxB or placebo into bilateral parotid and submandibular glands. Treated patients reported a global improvement of 82% at 2 and 4 weeks compared to 38% in placebo (p < 0.05). At 12 weeks, 50% of patients receiving BTxB were improved compared to 14% receiving placebo. There were no important adverse events.

Radiation therapy for medically refractory sialorrhea reduced salivary production, but side effects included erythema, sore throat, and nausea (Class III). A "satisfactory response" was observed and saliva secretion rate diminished with a single dose of 7–7.5 Gy bilaterally (Class III).

Conclusions

In patients with medically refractory sialorrhea, BTxB injections into the parotid and submandibular glands are probably effective (1 Class I study). There are inadequate data on the effectiveness of BTxA and amitriptyline (1 Class III study). Low-dose irradiation is possibly effective for sialorrhea (2 Class III studies).

Recommendations

In patients with ALS who have medically refractory sialorrhea, BTxB should be considered (Level B) and low-dose radiation therapy to the salivary glands may be considered (Level C)

Clinical context

In ALS and other diseases, anticholinergic medications are generally tried first to reduce sialorrhea, although effectiveness is unproven. Botulinum toxin has been effective in controlled trials in parkinsonism as well as ALS.