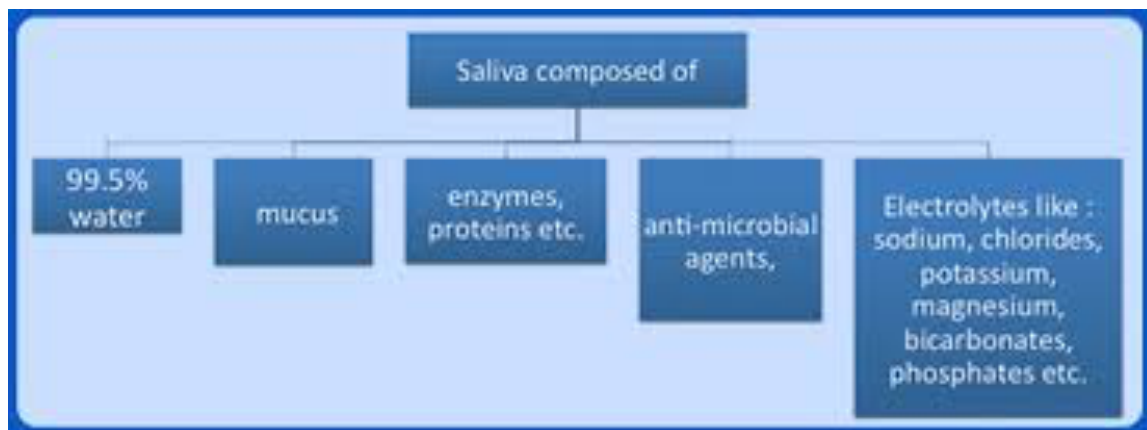
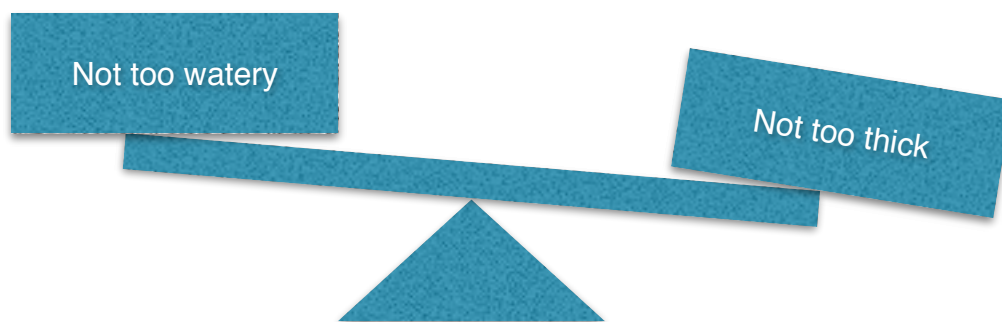
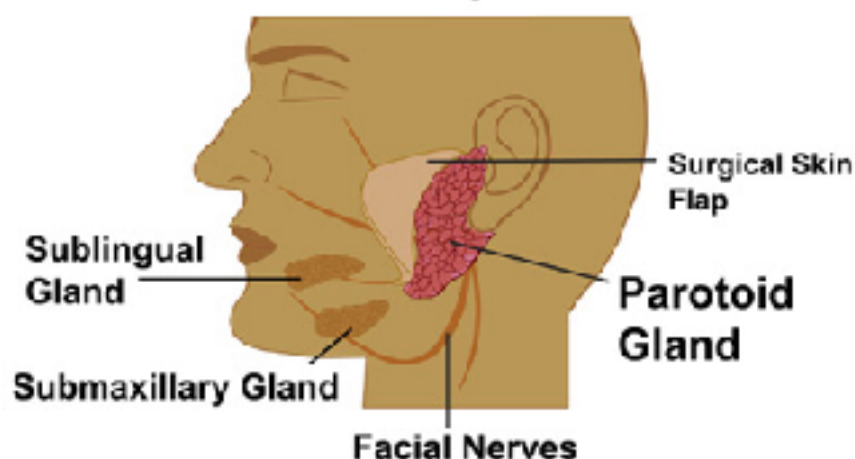


Managing Salivation & Secretion problem in MND

Some of our MND patients often have continuous drooling of saliva or flooding of salivation. There are medications available to dry the salivation. However, some patients also have problem of thick secretions (phlegm or saliva) which is difficult to expel out due to weakness in coughing. This can be a challenging problem for the patients, caretaker and the attending doctor. Treatment is always need to be individualised as each patient's condition can be different. We need to strike a balance in our management strategy that the salivation can be dry up but at the same time the secretion is not too dry that it get stuck and difficult to expel out.



The Salivary Glands



Common problems with secretion	Suggestions to overcome
<p>Continuous production and pooling of thin, watery of saliva/secretion, with constant drooling from the mouth</p>	<ul style="list-style-type: none"> • We use anticholinergic medication to dry up the secretion: <ul style="list-style-type: none"> - Amitriptyline 12.5 to 25 mg OD/ON - Artane(trihexyphenidyl) 1 to 2 mg OD and to titrate dose according to symptoms - Syrup morphine 3 to 4 mls every 4 hourly and to titrate dose according to symptoms • Other option of medications recommended (according to availability at the centre): <ul style="list-style-type: none"> - Hyosine patch or tablet - Glycopyrolate • Side effects of anticholinergic medications include dry mouth, dry eyes, secretion become thick, concentrated urine • If the patient can swallow saliva, we advise to do so • If using a portable suction machine at home, we suggest using soft tip of suction tube rather than rigid Yankauer to avoid stroking the buccal mucosa to stimulate more production of saliva • If no suction machine available, some patients tried with putting gauze at the side of the buccal mucosa to soak the saliva and replace every 2 to 4 hours. (You can leave the string of the gauze outside the mouth if fear of swallow or chock with the gauze) • Mouth care is important, ensure clean the mouth cavity and the tongue regularly with gauze stick soaked in Sodium Bicarbonate/ baking powder or soda brush as illustrated below. Alternatively, you can wrapped the gauze at your gloved index finger for the oral swab and clean • Positioning may help. In the sitting reclining position, a collar or neck pillow to support the neck. At night, the patient can lie on the side. Waterproof cloth for lining is sometime useful • If the above methods failed, some patients underwent Radiotherapy to destroy the salivary glands. Some with successful outcome and some did not • In some cases resistance to treatment, injection of botox (botulinum toxin) to the salivary gland to decrease saliva can have the effect lasting up to 3 months. Potential side effect include causing difficulty in swallowing

Common problems with secretion	Suggestions to overcome
<p>Thick and sticky saliva that often stuck in the mouth and difficult to remove</p>	<ul style="list-style-type: none"> • Need to revise and stop the anticholinergic medications • Need to ensure good hydration with enough fluids • Positioning, suctioning and manual removal with gauze stick can help to remove the sticky saliva • regular mouth care with cleaning at least 3 times a day is important to prevent odour, improve comfort of the mouth and prevent oral thrush or infection • If the patient is a mouth breather (breath with the mouth open), putting a wet towel cover the mouth will help. If the patient is on NIV with nasal mask, consider change to oronasal mask • sips on popsicles, jelly, ice-cream or frozen yogurt, or citrus lozenges, will help • pineapple and papaya juices with the enzymes can help • spray water contain sodium bicarbonate or applying oil (coconut oil/olive oil/ghee) can help as lubricants and allow easier removal of secretion from mouth

Common problems with secretion	Suggestions to overcome
Thick mucus or phlegm that stuck at the airways with difficult coughing out and sometime can cause breathing difficulty	<ul style="list-style-type: none"> • Need to revise and stop the anticholinergic medications • Need to ensure good hydration with enough fluids • Positioning with sitting up and gentle chest percussion with cups of the finger can help to loosen the mucus/secretion to the central airway • Breathing exercise recommended by physiotherapist/Pulmonary Rehabilitation Therapist is helpful sometime. Taking deep breath in and out several times a day can help counteract hypoventilation and also help to relax anxiety during breathing difficulty • Suction is helpful if the secretion is in the oral cavity or at the back of the throat • If the patient is on NIV, too high of the pressure gushing in the airway can dry up secretion/mucus easily. If possible, titrate down to a lower and tolerable pressure • Medication as mucolytic: <ul style="list-style-type: none"> - N- Acetylcysteine (Flumucil) or NAC in sachet 200mg 3 times a day - If a portable nebuliser is available, use hypertonic saline (3% normal saline) nebulisation • We use mechanical insufflation and exsufflation machine/Cough assist for patient with weak cough to help clear secretions that potentially plug the airway and causing lungs collapse



Cough Assist



Soda brush

You can go to youtube to look for video on cough assist, here is one of the example:

<https://www.youtube.com/watch?v=EOGofPecRAM>