



# Common Drugs Used in Otorhinolaryngology Head and Neck Surgery

# 3

Saiming Chen and Jihong Huang

## 3.1 Common Drugs of Ear

1. 3% Hydrogen Peroxide
  - (a) Ingredients: 3% hydrogen peroxide.
  - (b) Action: clearance and disinfection.
  - (c) Application: acute and chronic suppurative otitis media, external otitis.
  - (d) Usage: ear washing, three times daily.
2. 0.25–0.5% Chloramphenicol Cortisone Solution
  - (a) Ingredients: 0.25–0.5% chloramphenicol and cortisone.
  - (b) Action: disinfection, sterilization, swelling, and anti-allergy. The effect on the gram-positive bacilli is better.
  - (c) Application: acute and chronic suppurative otitis media.
  - (d) Usage: ear drops, three times daily.
3. 2.5% Chloramphenicol Glycerin
  - (a) Ingredients: 2.5% chloramphenicol.
  - (b) Action: the effect on the gram-negative bacteria is good
  - (c) Application: acute and chronic suppurative otitis media.
  - (d) Usage: ear drops, three times daily.
4. 1–3% Phenol glycerin Ear Drops
  - (a) Ingredients: 1–3% phenol glycerin.
  - (b) Action: sterilization, analgesia and DE tumescence.
  - (c) Application: acute otitis media without tympanic membrane perforation and external auditory canal inflammation.
  - (d) Usage: Ear drops, three times daily.
5. 4% Boric Acid Ethanol Ear Drop
  - (a) Ingredients: 4% boric acid.
  - (b) Action: disinfection and sterilization. Short ear tingling may occur, which explain to the patients.
  - (c) Application: chronic suppurative otitis media and radical mastoidectomy (at unary operation cavity).
  - (d) Usage: ear drops, three times daily.
6. 3–5% Sodium Bicarbonate Glycerin Ear Drops
  - (a) Ingredients: 3–5% sodium bicarbonate.
  - (b) Action: alkaline solution, dissoluble to soften cerumen.
  - (c) Application: external auditory canal cerumen impaction.
  - (d) Usage: ear drops, several times daily. After the cerumen softens, fetch it or wash with water.
7. Ketone (Fluorine) Alconazole Ear Drops
  - (a) Ingredients: ketone (fluorine) conazole.
  - (b) Action: ketoconazole is a broad-spectrum imidazole anti-fungal drug, which could strongly inhibit the candida, the yeast, and the skin fungi.
  - (c) Application: combine with transdermal effect of the laurocapram (azone) to treat the fungal otitis, which is good at low dosage, short therapy course, good curative effect
  - (d) Usage: eardrops.
8. 0.3% ofloxacin Eardrops
  - (a) Ingredients: 0.3% ofloxacin.
  - (b) Action: It is a fluoroquinolone and a broad-spectrum bactericidal sterilization drug, which mainly inhibit the bacterial DNA synthesis.
  - (c) Application: bacterial otitis media, external otitis and myringitis.
  - (d) Usage: For adults, six to ten drops/time, three times daily; for children, appropriately lessen the medication drops.

## 3.2 Common Drugs for Nose

### 1. Rhinal Mucosal Decongestant Drugs

Apply them locally in the nose and combine them with the adrenergic receptor on the rhinomucosal vascular wall to reduce the rhinomucosal swelling. The common drugs

S. Chen · J. Huang (✉)  
Department of Otorhinolaryngology Head and Neck Surgery,  
The First Affiliated Hospital of Hainan Medical University,  
Haikou, China

include the 1% (0.5% for children) ephedrine and the xylometazoline (oxymetazoline nasal) spray.

(a) Ephedrine Rhinal Drops

- Ingredients: 1% ephedrine hydrochloride.
- Action: Reduce rhinomucosal edema and improve rhinal obstruction.
- Application: it has an instant effect on remitting the rhinal obstruction, but it is an  $\alpha$ - and  $\beta$ -receptor stimulant, having relatively side effects on the heart and the nerve system, therefore, patients with hypertension, coronary atherosclerosis heart disease, the hyperthyroidism, glaucoma and prostaticomegaly should be used carefully.
- Usage: Rhinal drops while necessary.

(b) 0.05–0.1% Xylometazoline (Oxymetazoline) Spray

- Ingredients: 0.05–0.1% xylometazoline (oxymetazoline).
- Action: xylometazoline is an imidazoline derivatives,  $\alpha$ -receptor agonist, which effect to contract the rhinomucosal vessels, reduce the congestion and improve the rhinal obstruction symptoms.
- Application: acute and chronic rhinitis, rhinal sinusitis, allergic rhinitis, and hypertrophic rhinitis.
- Contraindications: Patients with the atrophic rhinitis and the dry rhinal cavity and the patients who are receiving the single ammonia oxidase inhibitors (such as the isoniazid, etc.) are prohibited to use it.
- Usage: adults and children older than 6-year-old: three sprays each side each time, once each morning and bedtime.

2. Mast Cell Stabilizing Agent

2% sodium hyaluronate rhinal drops

- (a) Ingredients: 2% sodium hyaluronate.  
 (b) Action: inhibit release of allergic substances.  
 (c) Application: allergic rhinitis.  
 (d) Usage: rhinal drops, three times daily.

3. Antihistamines Rhinal Spray

(a) Levocabastine hydrochloride rhinospray

- Ingredients: 0.05% levocabastine.
- Action: antihistamine
- Application: allergic rhinitis
- Usage: rhinal spray, three times daily

(b) Ketotifen Fumarate Aerosol

- Ingredients: ketotifen fumarate
- Action: antiallergic, antihistamine
- Application: allergic rhinitis
- Usage: rhinal spray, three times daily

(c) Azelastine Hydrochloride rhinal spray

- Ingredients: azelastine hydrochloride

- Action: antiallergic, antihistamine
- Use: allergic rhinitis.
- Usage: rhinal spray, twice daily

4. Glucocorticoid rhinal spray

(a) Beclometasone dipropionate aqueous rhinal spray

- Ingredients: Beclomethasone.
- Action: glucocorticoids, anti-inflammatory and anti allergic.
- Application: allergic or vasomotor rhinitis
- Usage: rhinal spray. For adults: totally four times daily two sprays per time, and for severe conditions, dosage could be increased but the daily intake should not be beyond 20 sprays; for children, two to four times daily one to two sprays every time.

(b) Fluticasone Propionate rhinal spray

- Ingredients: 0.05% fluticasone propionate.
- Action: it has potent anti-inflammatory activity, but when it locally has an effect on the rhinomucosa, its systemic activity isn't detected.
- Application: prevention and therapy of children and adults (not younger than 12) with seasonal allergic rhinitis and perennial allergic rhinitis.
- Usage: Only rhinal inhalation: once daily, two sprays each nostril; the maintenance dose is once daily, one spray each nostril. The minimum dosage to effectively control the symptoms should be firstly applied, and only regular medication could help obtain the maximum efficacy.

(c) Mometasone Furoate rhinal spray

- Ingredients: 0.05% mometasone furoate.
- Action: glucocorticoids, for local anti-inflammatory and anti-allergic.
- Application: allergic rhinitis. Adults and children (not younger than 3).
- Usage: rhinal spray. For adults: three times daily; for children not younger than 12 years, once each day, two sprays per rhinocavum; for children 3–11 year-old, once daily, one spray each rhinocavum [1].

(d) Budesonide rhinal spray

- Ingredients: Budesonide.
- Action: glucocorticoids, for anti-inflammatory and anti allergy.
- Application: Treatment of seasonal perennial allergic rhinitis and perennial non-allergic rhinitis, prevent rhinopolyps' regeneration after its resection and treat rhinopolyps symptomatically [2].
- Usage: rhinal spray, one spray in the morning or evening respectively.

(e) Triamcinolone Acetonide rhinal spray

- Ingredients: triamcinolone acetonide

- Action: glucocorticoids, for local anti-inflammatory and anti allergy.
- Application: prevention and treatment of perennial and seasonal allergic rhinitis.
- Usage: rhinal spray. Fully shake it before using to make it even. For adults and children not younger than 12-year-old, once daily, two sprays each time each rhinocavum (220 µg/ daily); for children at 6~12-year-old, once daily, one spray each time each rhinocavum (110 µg/ daily). Regularly take medicines, and the maximum curative effect could be achieved after 1 week.

#### 5. Spray Rhinal Allergen Blocking Drugs

It is compounded by the chitosan hydrochloride and the polyethylene hydrogenated castor oil. After being sprayed into nose, it could prevent and adjuvant treats allergic rhinitis by reducing the allergen inhalation by the absorption effect. The patients allergic to chitosan should be cautioned to avoid its usage.

#### 6. Rhinal Irrigation

As a common post-endoscopic surgical therapy, rhinal irrigation could be applied to treat chronic paranasal sinusitis as well. Pathogenic substances and dirt accumulated in rhinal cavum could be discharged by water flow so as to restore the normal physiological rhinocavum environment and the rhinocilia function and protect the rhinocavum [1]. Rhinal irrigation mainly contains isotonic saline, hypertonic saline and other natural sea salt. Basically, hypertonic saline over 3.5% is not suitable for rhinal irrigation; hypertonic saline 2%–2.3% and distilled seawater often be applied in clinic. Compared on the clinical effect, hypertonic saline is better than hypotonic saline, however, patients suffered dry rhinocavum should not be applied with hypertonic saline. As to brine, its temperature should be close to 37 °C (normal human body temperature) to reduce stimulation to the rhinomucosa and it should be applied twice daily due to personal needs (Fig. 3.1) [3].

#### 7. Compound menthol camphor rhinal drops

- (a) Ingredients: totally 100 ml, including 1 g mint, 1 g camphor and paraffm.
- (b) Action: lubricate rhinomucosal membrane, stimulate nerve endings, deodorization, promote rhinomucosal secretion.
- (c) Application: atrophic rhinitis, rhinitis sicca.
- (d) Usage: rhinal drops, three times daily.

#### 8. Omalizumab for Injection

As the world's first innovative targeted drug for asthma, omalizumab for Injection reduces inflammatory mediators and eosinophils by binding to circulating free IgE. It is suitable for patients with allergic rhinitis accompanied by asthma or nasal polyyps [2, 3].



**Fig. 3.1** Nasal irrigator

### 3.3 Common Drugs of Throat

#### 1. Compound Borax (Dobell) Solution

- (a) Ingredients: totally 100 ml, including 1.5 g borax, 1.5 g sodium bicarbonate, 0.3 ml phenol, 3.5 ml glycerol, and distilled water.
- (b) Action: alkaline solution, for antibacterial, antiseptis, disinfection and convergence.
- (c) Application: acute and chronic pharyngitis, tonsillitis and mouth wash.
- (d) Usage: diluted gargle, several three times daily.

#### 2. Iodine Glycerol.

- (a) Ingredients: totally 100 ml, including 1.25 g iodine, 2.5 g potassium iodide, 0.5 ml peppermint oil, 25 ml distilled water, and glycerol.
- (b) Action: disinfection, lubrication and mild stimulation.
- (c) Application: chronic pharyngitis and atrophic pharyngitis, atrophic rhinitis as well.
- (d) Usage: apply on posterior pharyngeal wall and other lesion sites, three times daily.

3. Doniphan Throat Lozenge
  - (a) Ingredients: 0.5 mg domifen each lozenge.
  - (b) Action: bactericidal effect on staphylococcus and streptococcus, and local anti-inflammation
  - (c) Applications: acute and chronic laryngopharyngitis, tonsillitis.
  - (d) Usage: Lozenge. Several times daily. One to two tablets each time
4. Iodine Throat Lozenge
  - (a) Ingredients: 0.0013 g iodine each lozenge.
  - (b) Action: anti-inflammation, antibacterial, and reduce local inflammatory responses.
  - (c) Application: acute and chronic laryngopharyngitis.
  - (d) Usage: four to six times daily, One tablet each time.
5. Lysozyme Lozenge
  - (a) Ingredients: it is a polypeptidase extracted from the fresh egg white, which can decompose the mucopolysaccharide, and 20 mg per lozenge.
  - (b) Action: antibacterial, antiviral, hemostasis, DE tumescence and accelerate tissue function restoration
  - (c) Application: acute and chronic laryngopharyngitis
  - (d) Usage: Lozenge four to six times daily, one tablet each time.
6. Basic Bismuth Carbonate Powder
  - (a) Ingredients: basic bismuth carbonate.
  - (b) Action: converge and protect the mucosal wound surface and promote its healing.
  - (c) Application: pharyngeal and esophageal mucosal damage, postoperative esophagoscopy.
  - (d) Usage: Take it on tongue without water four to six times daily.
7. 1% Tetra Caine
  - (a) Applications: Common mucosal superficial anesthetics. Apply it topically to anesthetize the mucosal surface during otorhinolaryngology operations, esophageal and tracheal inspection. It is a clinical error to apply it as an infiltration anesthesia drug.
  - (b) Notice
    - Injection and surface anesthetic agents must be strictly reserved respectively, and marked with respective labels. The tetra Caine solution should be mixed with another color (such as eosin) so as to distinguish them.
    - Fresh preparation is the best, not suitable for long time.
    - Apply a small dose at first to observe whether the drug anaphylaxis existing or not, if it doesn't occur, an appropriate therapy dose could be applied, total of which commonly is not over 60 mg (6 ml) for adults.
  - While using the tetra Caine, adding a few epinephrine is necessary to contract the capillaries so as to slower the drug absorption and prolong the anesthesia time.
  - Enjoin the patients not to swallow the medicines (except for the esophageal inspection).
  - Children and pregnant women have low tolerance to this drug, so they should take it with great caution or not take it. During the medication period, the medical staff should pay close attention to their complexion, facial expression, pulse, respiration and so on.
- (c) poisoning symptoms: dizziness or vertigo, blurred vision, airiscluse, panic terror, pallor, dry mouth, mydriasis or excitement, hallucination, delirium, talkative, wild laugh and weak pulse, reduced blood pressure, irregular and shallow respiratory and other symptoms. Once the poisoning is found, stop taking the medicine immediately, fetch the tetra Caine cotton piece in nose and perform the first aids. Intravenously inject the dexamethasone by 5 mg; to the excitement or the convulsions, give them the sedative (such as diazepam, 0.1–0.2 mg/kg, intravenous injection) or thio-pental it is used to control the tic by a viable 2–2.5% by slow intravenous injection, and immediately stop injecting once the tic is under control but keep the needle incase the recurrent tic, but the total medicine is commonly not over 5 mg/kg. Simultaneously, set the patients in the supine positioning with head-down tilt, then quietly and closely observe their pulse, HR, respiration, Bp and consciousness till the poisoning symptoms are gone. The arterial respiration, endotracheal intubation, oxygen inhalation and other measurements could be applied if necessary.

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## References

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