Mouthwashes and its use in children
Study objectives

• Describe the mechanism of action and use of chlorhexidine in the prevention and management of periodontal disease and caries in children.
• Describe the mechanism of action and use of Listerine in the prevention and management of periodontal disease and caries in children.
Chlorhexidine

- This is a disinfectant and antiseptic mouth wash used for preventing plaque accumulation.
- It is primarily used in the management of periodontal disease and secondarily as cariostatic agent due to its inhibition of plaque bacteria.
Chlorhexidine - 2

• It has a dicotonic nature and this enables it to adhere to oral surfaces from which it exerts a prolong bacteriostatic effect.

• It is absorbed by the hydroxyapatite crystals and also has affinity for the acidic protein of saliva and plasma. It is this affinity that enables it stay on the periodontium and tooth surfaces from which it exerts its inhibitory effects on plaque.
Action of chlorhexidine

- It completely inhibits the production of extracellular polysaccharides by bacteria thereby preventing plaque formation and adherence.
- The inhibitory effect is 100% for the first 12 hours and gradually decreases over the next 24 hours.
- It is used at least twice daily as a mouth gaggle. Its use must not exceed 2 weeks because the associated side effects.
Side effects of chlorhexidine

- Unpleasant taste.
- When used for a prolong period, it alters the taste sensation.
- Cause brown discolouration of the teeth and dorsum of the tongue due to its reaction with organic and inorganic components of the teeth structure.
Side effects of chlorhexidine - 2

- Could cause mucosal erosion depending on the concentration. This leads to desquamative gingivitis.
- When used for a prolong period, reports of parotid swelling has been noted. The pathophysiology of this remains unknown.
Listerine

- An antiseptic mouthwash.
- Acts by disrupting and lysis of cell wall of microorganism.
- Composed of methol (local anaesthesia), thymol (antiseptic), Methyl salicylate (anti-inflammatory agent), Eucalyptol (flavouring) and ethanol (solvent).
Listerine - 2

• Only effective in reducing 50% of plaque formation.
• Concern about the alcohol content as long term use of listerine may predispose to cancer formation.
• Most effective when used in conjunction with tooth brushing and flossing.
Listerine - 3

- Adverse events including cause of burning sensation, bitter taste and drying of the mucous membrane. It may also exacerbate xerostomia.
- Use 20mls as swash in the mouth for 30 seconds twice daily or when in need.
Listerine - 3

- Contraindications for use include as sole treatment for gingivitis, in patients with oral ulcers or desquamative disease and not advised for use in children because of high alcohol content. For adults, not advised in alcoholics.
Listerine

- Composed of methol which serves as local anaesthesia and eucalyptol which serves as anti-inflammatory agent.
- Inhibits plaque by 70%
- Effective when used four times a day
- Contraindicated for use in children less than 4 years
Quiz 2

Chlorhexidine

• Effective when used twice a day when in pain
• Causes brownish discolouration of the face when used for prolong periods
• Parotid swelling reported when used for prolong period
• The pathophysiology of parotid swelling is well understood.
Mouthwashes

- Chlohexidine is bacteriocidal in its action
- Listerine is absorbed by the hydroxyapatite crystals and also has affinity for the acidic protein of saliva and plasma.
- Listerine inhibits the production of extracellular polysaccharides by bacteria
- Listerine acts by disrupting and lysis of cell wall of micro-organism.
Acknowledgement

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• We hereby acknowledge that many of the materials are not primary quotes of the group.

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