Every tooth in a man’s head is more valuable than a diamond.

(Miguel de Cervantes, Don Quixote, 1605)
This booklet was compiled by Daniela Attard as part of an undergraduate project carried out for the partial fulfillment of the requirements of the course leading to the Degree of Bachelor of Pharmacy (Honours).

This study was carried out under the supervision of Professor Lilian M. Azzopardi, Head of Department, Department of Pharmacy, University of Malta.

The material has been reviewed by a panel of experts, namely:

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• Georgeann Meilak B.Pharm. (Hons)
• Alan Miller B.Pharm
• Jacqueline Padovani M.D., DipWH., MMCFD
• David Tanti M.D., MMCFD
• Raymond W. Zammit B.Ch.D.

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Published in August 2011
Preface

Patients consult pharmacists with complaints of dental pain and oral lesions. While some presentations may reflect minor aetiologies there are instances where referral to a dentist is necessary for further assessment and specific management. Pharmacists require the necessary skills to be able to identify cases where referral is essential and should be cognizant of common oral lesions and the medications and advice necessary for the management of minor conditions that do not require referral.

Common oral lesions and conditions include recurrent aphthous ulcers, xerostomia and dental abscess. Aphthous ulcers are common recurrent lesions whilst xerostomia is an inconvenient condition which can be due to medications. In dental abscesses pharmacists may help in identifying the condition and in providing support until the patient contacts a dentist.

These three conditions have been identified for the development of protocols to be followed by pharmacists when responding to complaints related to dental conditions. Daniela Attard has prepared the protocols as part of her project leading to a degree in pharmacy. These protocols form part of a series of protocols that are being developed by the Department of Pharmacy at the University of Malta as part of a research project in the area of evidence-based pharmacist interventions.

Professor Lilian M. Azzopardi
Head, Department of Pharmacy
How to use this booklet

This booklet contains a set of three treatment protocols for dental conditions, which are designed to guide the pharmacist through important steps to follow when responding to the patient and providing appropriate advice. These protocols should be considered as guidelines and are not intended to replace the pharmacist’s clinical judgement.

- Any difficulties with understanding abbreviations or medical terms should be tackled by referring to Section 1 (pages 10-11). Also, this section includes the interpretation of shapes used for the construction of the flowcharts.
- Section 2 (page 14) contains the three treatment protocols initiating from step 1. Step 2 divides those patients that present to the pharmacy with a prescription from those without. For patients presenting with a prescription, you should go to step 9. Step 3 should be followed for patients without a prescription. Then, you should either choose step 6, step 7 or step 8 according to the presenting condition. The respective protocol should be followed until dispensing of a medication is carried out or the patient is referred to a general practitioner or dentist.
- For further details, refer to the explanatory text presented separately, and to Section 3 (page 30).
- Section 4 (page 37) contains the references that were used to compile the content of the booklet.
A barrier ointment which physiologically supports the natural extrinsic coagulation pathway, by topically supplying pro-coagulation factors:

- Saturated Fatty Acids
- Collagen
- Phospholipids
- Calcium
- Potassium
- Magnesium

**Indications:**
Medical device with a mechanical action used for the prevention of re-bleeding in some cutaneous mucosal hemorrhagic conditions like traumatic or essential epistaxis, gingival bleeding, etc.

**Administration:**
Apply a sufficient quantity of the product to the affected area, when necessary. In case of nasal use, it is recommended that the product be administered using a suitable device.

**Adverse reactions:**
No known adverse reactions have been reported.

**Composition:**
Saturated fatty acids, yeast protein extract (vegetal collagen), phosphatidylcholine, tocopherol acetate, beeswax, soya oil, stearyl alcohol, calcium, potassium, magnesium chlorides, glyceryl monostearate, methyl and propyl p-hydroxybenzoate, BHT.

**Cautions:**
Store between 18° - 25°C. At low temperatures the product can appear compact, which does not compromise the product's performance; it may be brought back to the original state by simply maintaining it at room temperature (not less than 18° C). Do not use in case of known hypersensitivity to any of the constituents of product. In case of adverse reactions stop treatment and consult a doctor. Close the tube tightly after use. Never use the product after the expiry date. Keep it out of the reach of children.
Section 1

INTRODUCTION
Abbreviations

DM: Diabetes Mellitus o.d.: every day
HIV: Human Immunodeficiency Virus b.d.: twice daily
HU: Herpetiform Ulcers t.d.s.: to be taken three times daily
MjAU: Major Aphthous Ulcers q.d.s.: to be taken four times daily
NSAIDs: Non-Steroidal Anti-Inflammatory Drugs mcg: micrograms
mg: milligrams
OTC: Over-the-Counter g: grams
PoMs: Prescription only Medicine kg: kilograms
RAU: Recurrent Aphthous Ulcers

Glossary

Coeliac disease: a small bowel condition caused by a sensitivity to gluten.
Crohn’s disease: a chronic, idiopathic inflammatory bowel disease.
Cushing’s Syndrome: pituitary adenoma or hyperplasia with hypersecretion of ACTH/corticotrophin resulting in adrenal cortical overactivity.
Dental abscess: infection of the mouth, face, jaw or throat with local collection of pus.
Recurrent Aphthous Ulcers: inflammation of the mucosa of the mouth with painful ulceration.
Ulcerative colitis: a chronic, episodic inflammatory bowel disease.
Xerostomia: dryness of the mouth.
# Interpretation of shapes

<table>
<thead>
<tr>
<th>Shape</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action box &amp; Treatment box</td>
<td>Action box: Indicates when an action is required to be carried out by the pharmacist</td>
</tr>
<tr>
<td></td>
<td>Treatment box: Contains OTC treatment</td>
</tr>
<tr>
<td>Connector box</td>
<td>Connects one box to another</td>
</tr>
<tr>
<td>Data box</td>
<td>Represents known information about the patient</td>
</tr>
<tr>
<td>Decision box</td>
<td>Poses yes-or-no questions to the pharmacist, thus leading to different paths</td>
</tr>
<tr>
<td>Termination box</td>
<td>Indicates when it is time to exit the protocol</td>
</tr>
<tr>
<td>Treatment box for PoMs</td>
<td>Contains treatments which are considered as PoMs</td>
</tr>
</tbody>
</table>
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An exceptional combination of comfort, style and gradient compression therapy.

Style
Six new fashionable colors let you mix and match for every occasion

Comfort
Softly caresses your legs and keeps them cool

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Gradient compression for high medical efficacy

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TREATMENT PROTOCOLS

Section 2

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gradient compression therapy.

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1. Pharmacist greets the patient

2. Patient presents with a prescription? 
   - YES: Go to step 9
   - NO: Go to step 3

3. New patient? 
   - NO: Go to step 5
   - YES: Establish the identity of the patient

4. Enquire about the symptoms: 
   - Onset 
   - Duration 
   - Type 
   - Intensity

5. Go to step 64

6. Recurrent aphthous ulcers 
   - Go to step 21

7. Xerostomia 
   - Go to step 64

8. Dental abscess 
   - Go to step 104
Is medication/dose adequate for the patient?

Is the patient currently taking any other medication?

Order medication and ask the patient to collect it later or refer patient to another pharmacy; depending on the severity of the individual case

Contact the prescriber with queries

Contact the prescriber and discuss an alternative treatment which does not interact with the previous medication

Go to step 18

Does the medication interact with the prescribed medication?

Explain the regimen, length of treatment and anything to be avoided with the medication

Dispense medication

Establish identity of the patient

Confirm patient knowledge on prescribed medication

Is medication in stock at the pharmacy?

Is medication/dose adequate for the patient?

Check expiry date of the product

Patients present with prescription
21

Extra-oral symptoms – genital or ocular? 

YES

NO

Recurrent Aphthous Ulcers

22

Accompanying conditions?

YES

NO

Refer and exit protocol

23

Presence of predisposing factors? 

YES

NO

Refer and exit protocol

24

NO

Refer and exit protocol; MjAU or HU

25

Establish the number of ulcers in each attack

YES

NO

Refer and exit protocol

26

NO

Go to step 29

27

Refer and exit protocol

28

Refer and exit protocol; MjAU/HU

29

NO

YES

NO

Has a drug been applied topically at the site?

NO

YES

NO

Is the patient on medication?

YES

NO

Presence of predisposing factors? 

(as per page 30)

Refer and exit protocol

21

Recurrent Aphthous Ulcers

22

Accompanying conditions?

YES

NO

Refer and exit protocol

23

Establish the number of ulcers in each attack

YES

NO

Refer and exit protocol

24

NO

Go to step 29

27

Refer and exit protocol

28

Refer and exit protocol; MjAU or HU

29

NO

YES

NO

Has a drug been applied topically at the site?

NO

YES

NO

Is the patient on medication?

YES

NO

Establish the location of ulcers

Located towards the back of the mouth?

YES

NO

Refer and exit protocol

23

Refer and exit protocol

28
Multiple ulcers

Single ulcers?

Has any chemical been applied to the mouth?

Is the patient taking any medication?

Is the patient on medication?

Do the ulcers recur and present individually?

Establish the location of ulcers

Located towards the back of the mouth?

Refer and exit protocol; MjAU/HU

Refer and exit protocol; MjAU or HU

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Go to step 43

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

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Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol
Is the patient symptomatic?

YES

No treatment – only reassurance and offer advice, as per step 59

NO

Was the treatment successful?

YES

Patient is receiving adequate treatment

NO

Refer and exit protocol

Advice:

- Avoid foods that may irritate the mouth
- Eat healthy foods to circumvent nutritional deficiencies
- Practice good oral hygiene habits, brush and floss regularly, and regular visits to a dentist

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation/s</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triamcinolone</td>
<td>• Oral paste</td>
<td>• ADULT and CHILD, q.d.s., not more than 5 days</td>
</tr>
<tr>
<td>High-molecular-weight hyaluronic acid (Afta med®)</td>
<td>• Gel/junior gel • Mouthwash</td>
<td>• ADULT and CHILD, b.d. or t.d.s. after meals, for 1 week</td>
</tr>
<tr>
<td>Benzydamine (Tantum Verde)</td>
<td>• Mouthwash • Toothpaste • Lozenge</td>
<td>• 15ml b.d. to t.d.s. • t.d.s., after meals • ADULT and CHILD over 6 years, 1 lozenge t.d.s., for not more than 7 days</td>
</tr>
<tr>
<td>Chlorhexidine (Corsodyl)</td>
<td>• Mouthwash</td>
<td>• ADULT and CHILD, t.d.s., hold in mouth for 1-2 minutes</td>
</tr>
<tr>
<td>Choline salicylate (Bonjela®)</td>
<td>• Oral gel</td>
<td>• ADULT over 16 years, apply half an inch, not more often than every 3 hours</td>
</tr>
</tbody>
</table>
**Spiramycin-Metronidazole**

**To Prevent and Treat The Oral Infections**

**RODOGYL**, film-coated tablets  
*Spiramycin 0.75 MIU  
Metronidazole 125.0 mg*

**Therapeutic indications**  
The indications are limited to acute, chronic or recurrent stomatological infections:  
* Dental abscess, phlegmon, perimaxillary cellulitis, periconoritis,  
* Gingivitis, stomatitis,  
* Periodontitis,  
* Parotiditis, submaxillitis.  
* Preventive treatment of local infectious post-operative complications of stomatological and dental surgery.

**Dosing**  
Curative treatment: Adults: 4 to 6 tablets daily in 2 to 3 divided doses with meals (i.e.: 3 to 4.5 MIU of spiramycin and 500 to 750 mg of metronidazole). In severe cases, the dosage may be increased to 8 tablets daily. **Children**: Between 6 to 10 years: 2 tablets daily (i.e. 1.5 MIU of spiramycin and 250 mg of metronidazole). Between 10 to 15 years: 3 tablets daily (i.e. 2.25 MIU of spiramycin and 375 mg of metronidazole). Preventive treatment of local infectious post-operative complications of stomatological and dental surgery: Adults: 4 to 6 tablets daily in 2 to 3 divided doses with meals. **Children**: Between 6 to 10 years: 2 tablets daily (i.e. 1.5 MIU of spiramycin and 250 mg of metronidazole). Between 10 to 15 years: 3 tablets daily (i.e. 2.25 MIU of spiramycin and 375 mg of metronidazole).

**Contraindications**  
Hypersensitivity to imidazoles, spiramycin and/or any of the excipients; In children under 6 years of age, due to the pharmaceutical form. AVOID in combination with disulfram, alcohol and medicaments containing these substances. Special warnings and precautions of use Warnings: Due to the presence of metronidazole, the risk of worsening of the neurological state in patients suffering from severe, central and peripheral neurological conditions, whether stable or progressive, should be taken into account. Due to the presence of sorbitol, this medicinal product is contraindicated in the event of intolerance to fructose. Precautions for use: Cases of hemolytic anemia have been very rarely reported in patients with a deficit of glucose-6-phosphate dehydrogenase; the use of spiramycin in this population is not recommended. In case of history of hematological problems caused by high-dose treatment and/or prolonged treatment, it is recommended to carry out regular blood tests, especially for the purposes of white-blood count control. In the event of leucopenia, the decision whether or not to continue treatment depends on the severity of infection. In case of prolonged treatment, inspect for signs indicating an undesirable effect of central or peripheral neuropathy nature (paresthesia, ataxia, vertigo, convulsions). Interactions with other medicaments and other forms of interaction DUE TO SPIRAMYCIN: Combinations to be taken into account: Levodopa (associated with carbidopa): Decrease in carbidopa absorption with decrease in the severity of infection. In case of prolonged treatment, inspect for signs indicating an undesirable effect of central or peripheral neuropathy nature (paresthesia, ataxia, vertigo, convulsions). Alcohol Antabuse effect (disulfram, alcohol and medicaments containing these substances). Special warnings and precautions of use Warnings: Due to the presence of metronidazole, the risk of worsening of the neurological state in patients suffering from severe, central and peripheral neurological conditions, whether stable or progressive, should be taken into account.

**Precautions for use**  
**PREGNANCY AND LACTATION:** 
Pregnancy: The use of this medicament may be allowed during pregnancy, if required. 
Lactation: Metronidazole and spiramycin pass into maternal milk; therefore, the administration of this medicament must be avoided during breast-feeding. **EFFECTS ON THE ABILITY TO DRIVE AND THE USE MACHINES**

**Undesirable effects**  
**Related to spiramycin:** Gastro-intestinal disorders: Gastric pain, nausea, vomiting, diarrhoea and very rare cases of pseudo-membranous colitis. Skin and appendages: Eruption, urticaaria, pruritus. Very rarely Quincke edema, anaphylactic shock.  
Central and peripheral nervous system: Occasional and transient paresthesias. Hepatic manifestations: Very rare abnormalities in hepatic tests. Blood cell line: Very rare cases of hemolytic anemia have been reported (cf. 4.4 “Special warning and precautions for use”). RELATED TO METRONIDAZOLE: Gastro-intestinal disorders: Benign digestion problems (epigastric pain, nausea, vomiting, diarrhoea). Glosstis with sensation of dryness of the mouth, stomatitis, metallic taste, anorexia. Exceptionally, cases of pancreatitis, reversible upon discontinuation of treatment. Skin and appendages: Constipation, pruritus, cutaneous eruption sometimes with fever Urticaria, Quincke edema, exceptionally anaphylactic shock.  
Central and peripheral nervous system: Cephalalgia (headaches). Hepatic manifestations: Very rare cases of reversible abnormalities in the hepatic function and cholestatic hepatitis. Other: Appearance of a brown-reddish colour of the urines due to the presence of water-soluble pigments resulting from the product’s metabolism, myalgia, arthralgia and visual disturbances. **MARKETING AUTHORISATION HOLDER** Sandi-Aventis Malta Triq Kan. K. Piratta Birkirkara. BKR 1114 Malta. Marketing Authorisation Number 082/02601 POM. MT-SPM-11-03-01
**Xerostomia**

**Accompanying conditions?**

- Uncontrolled DM
- Dry eyes, joint pain & dry skin
- Extensive tooth decay
- HIV
- Halitosis
- Candidiasis

**Enquire whether:**
- Symptoms worsen at night
- It is a problem to swallow dry foods
- The patient sips liquids to aid swallowing
- The speech has a clicking quality
- The amount of saliva is too sparse most of the time

**Advice:**
- Wet dentures before wearing them
- Leave dentures out of mouth at night and stored in water
- The use of chlorhexidine mouthwash

**Does the patient wear dentures?**

- Yes
- Go to step 71
**Advice:**
- Stop smoking
- Recommend the use of nicotine replacement products
- Suggest joining smoking cessation groups

**Advice:**
- Stop consuming alcohol
- Suggest joining alcohol support groups

**Advice:**
- Stop consuming alcohol
- Suggest joining alcohol support groups

**Advice:**
- Stop smoking
- Recommend the use of nicotine replacement products
- Suggest joining smoking cessation groups

**Advice:**
- Stop consuming alcohol
- Suggest joining alcohol support groups

**Go to step 79**

**Is the cause known?**

**YES**

**Refer for adjustments and exit protocol**

**NO**

**Refer to a doctor**

**Go to step 84**

**Is there any identifiable cause of dry mouth?**

**YES**

**Go to step 85**

**Establish whether patient suffers from anxiety, stress or depression**

**NO**

**Go to step 83**

**Management with salivary substitutes and salivary stimulants**

**Is the patient elderly?**

**YES**

**Assess the medication profile of the patient**

**NO**

**Is the patient elderly?**

**YES**

**Assess the medication profile of the patient**

**NO**

**Is the cause known?**

**YES**

**Refer for adjustments and exit protocol**

**NO**

**Is there any identifiable cause of dry mouth?**

**YES**

**Go to step 85**

**Establish whether patient suffers from anxiety, stress or depression**

**NO**

**Psychogenic**

**Does the patient smoke?**

**YES**

**Advice:**
- Stop smoking
- Recommend the use of nicotine replacement products
- Suggest joining smoking cessation groups

**NO**

**Does the patient drink alcohol?**

**YES**

**Advice:**
- Stop consuming alcohol
- Suggest joining alcohol support groups

**NO**

**Is the patient elderly?**

**YES**

**Assess the medication profile of the patient**

**NO**

**Does the patient drink alcohol?**

**YES**

**Advice:**
- Stop consuming alcohol
- Suggest joining alcohol support groups

**NO**

**Is the patient elderly?**

**YES**

**Assess the medication profile of the patient**

**NO**
Is the patient taking medication that causes dry mouth?

Drug-induced hyposalivation

Establish whether patient started using a new drug treatment/a recent increase in dose

Assess the medication profile of the patient

Management with salivary substitutes and salivary stimulants

Refer to a doctor for an alternative drug/a decrease in dose

Any medication previously used to treat condition?

Is the medication known?

Is the medication suitable?

Refer and exit the protocol

Management with salivary substitutes

Go to step 99

Dispense same medication

Go to step 95

Management with salivary substitutes
### Medication Formulation/s Frequency

**Salivary substitutes:** e.g.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation/s</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylitol, glucose oxidase, lactoperoxidase (biotène®, biotène® oralbalance®)</td>
<td>• Mouthwash • Oral gel</td>
<td>• Rinse and gargle b.d. • Apply to gums and tongue, as required</td>
</tr>
<tr>
<td>Xylitol, mineral salts spray</td>
<td>• Oral spray • Toothpaste</td>
<td>• Spray b.d. or t.d.s., as required • Brush for 2-3 minutes t.d.s.</td>
</tr>
<tr>
<td>Xylitol, Sodium fluoride, provitamin B5, vitamin E (Kin Hidrat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casein Phosphopeptide – Amorphous Calcium Phosphate (GC Dry Mouth Gel)</td>
<td>• Oral gel</td>
<td>• o.d. in the morning, apply generously</td>
</tr>
</tbody>
</table>

**Salivary stimulants:** e.g.

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation/s</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xylitol or sorbitol</td>
<td></td>
<td>• Use as required</td>
</tr>
<tr>
<td>Diabetic sweets</td>
<td></td>
<td>• Use as required</td>
</tr>
<tr>
<td>Xylitol, betaine, olive oil (Xerostom® with Saliactive®)</td>
<td>• Sugar-free chewing gum • Sweets</td>
<td>• Use as required</td>
</tr>
<tr>
<td>Casein Phosphopeptide – Amorphous Calcium Phosphate (GC Dry Mouth Gel)</td>
<td>• Toothpaste • Mouthwash • Oral spray • Saliva substitutes • Dental gum • Pastilles</td>
<td>• Toothpaste and mouthwash: t.d.s., after main meals • Spray as required • Apply salivary substitutes before bedtime • Dental gum and pastilles: as required</td>
</tr>
<tr>
<td>Chlorhexidine</td>
<td>• Mouthwash</td>
<td>• Rinse mouth for 1 minute, b.d.</td>
</tr>
</tbody>
</table>

**Advice:**

- Patient should avoid eating spicy foods or hard, dry, crunchy foods; take small bites and eat slowly
- Eat plenty of soft, creamy foods or cool foods with a high liquid content e.g. grapes and melon
- Best to drink water or non-alcoholic drinks with meals
- Sip on juices and other fluids frequently throughout the day
- Avoid beverages that may cause diuresis e.g. coffee and tea
- Protect against dental caries and other complications by maintaining good oral hygiene
- Patient may hydrate the lips with a water-based or a lanolin-based product
dry mouth affects more than 10% of the population

COMMON CAUSES
Antidepressants, Antihistamines, Radiotherapy and Chemotherapy, Diabetes

COMPLETE TREATMENT FOR DRY MOUTH DISCOMFORT

**Spray**
- Hydrates and refreshes the oral cavity
- Restores the salivary balance
- Easy and convenient use

**Toothpaste**
- Specific oral hygiene
- Protects against caries
- Protects gums

ASK YOUR DENTIST, DOCTOR OR PHARMACIST FOR ADVICE. THIS WILL ENSURE OPTIMAL ORAL AND DENTAL HEALTH.
Advice:
• Brush and floss on a daily basis after meals
• Visit the dentist every 6 months

Accompanying conditions?

YES

NO

Establish the signs and symptoms:
• Pain and swelling of the mouth and face
• Persistent halitosis or bad taste
• Loose or shifting teeth
• Sensitivity to very hot or cold food and drink

Refer and exit protocol

Advice:
• Severe pain despite using OTC products
• Fever, chills, nausea or vomiting
• Spreading facial infection
• Immunosuppressed patients
• Uncontrolled diabetes
• Cardiovascular prosthetics
• Congenital/acquired heart disease

Does the patient smoke?

YES

NO

Advice:
• Stop smoking
• Recommend the use of nicotine replacement products
• Suggest joining smoking cessation groups

Does the patient practice good oral hygiene?

YES

NO

Advice:
• Brush and floss on a daily basis after meals
• Visit the dentist every 6 months

Go to step 113
**Medication Formulation/s Frequency**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation/s</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin (Amoxil®) and Metronidazole (Flagyl®)</td>
<td>• Tablets • Capsules (amoxicillin only) • Oral suspension</td>
<td>• 15-25mg/kg/dose t.d.s., 10mg/kg/dose t.d.s., respectively</td>
</tr>
<tr>
<td>Spiramycin with Metronidazole (Rodogyl®)</td>
<td>• Tablets • Oral suspension</td>
<td>• 2-3 tablets daily</td>
</tr>
<tr>
<td>For beta-lactam resistant organisms:</td>
<td>• Tablets • Oral suspension</td>
<td>• 22.5mg/kg/dose b.d.</td>
</tr>
<tr>
<td>Co-amoxiclav monotherapy (Augmentin®)</td>
<td>• Tablets</td>
<td></td>
</tr>
<tr>
<td>In penicillin-allergic patients:</td>
<td>• Capsules</td>
<td>• 10mg/kg/dose t.d.s.</td>
</tr>
<tr>
<td>Clindamycin (Dalacin C®)</td>
<td>• Tablets</td>
<td></td>
</tr>
</tbody>
</table>

*Advice:*
- The patient may rinse mouth with warm salt water
- Aspirin should not be placed directly over the tooth or gums because this may irritate the tissues and can result in mouth ulcers
- Eat cool, soft foods and avoid hot or cold food or drink

---

**Step 120 shows routinely prescribed antibiotics for management of Dental Abscess**
Medication | Formulation/s | Frequency
--- | --- | ---
Paracetamol | Tablets, Oral suspension, Suppositories | 0.5-1g q.d.s.

NSAIDs e.g. Ibuprofen | Tablets, Oral suspension | 300-400mg t.d.s. or q.d.s.

Step 123 shows routinely prescribed antibiotics for management of Dental Abscess

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation/s</th>
<th>Frequency</th>
</tr>
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<tbody>
<tr>
<td>Amoxicillin (Amoxil®) and Metronidazole (Flagyl®)</td>
<td>Tablets, Capsules (amoxicillin only), Oral suspension</td>
<td>250-500mg, 200mg, respectively, 8 hourly with meals for 3-7 days</td>
</tr>
<tr>
<td>Spiramycin with Metronidazole (Rodogyl®)</td>
<td>Tablets</td>
<td>4-6 tablets daily, in 2-3 divided doses</td>
</tr>
<tr>
<td>For beta-lactam resistant organisms: Co-amoxiclav monotherapy (Augmentin®)</td>
<td>Tablets, Oral suspension</td>
<td>375mg t.d.s. for 5 days</td>
</tr>
<tr>
<td>In penicillin-allergic patients: Clindamycin (Dalacin C®)</td>
<td>Capsules</td>
<td>150-300mg q.d.s. for 5 days</td>
</tr>
</tbody>
</table>

Refer to a dentist
Main predisposing factors of Recurrent Aphthous Ulcers

- Haematological deficiency states:
  - Low levels of iron
  - Low levels of folate or vitamin B₁₂
- Gastrointestinal disorders; coeliac disease, ulcerative colitis and Crohn’s disease
- Exaggerated response to trauma
- Genetic predisposition
- Stress
- Hormonal disturbances
- Infections
- Immunological abnormalities

Table 1 – Prescription only Medicines used for Recurrent Aphthous Ulcers

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation</th>
<th>Frequency</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steroid aerosols e.g. beclomethasone dipropionate (100 mcgs/puff)</td>
<td>Aerosols</td>
<td>50-100mcg sprayed on the oral mucosa b.d.</td>
<td>Able to deliver potent steroids to inaccessible areas e.g. oropharynx. Risk of steroid adverse effects with prolonged use.</td>
</tr>
<tr>
<td>Systemic drugs e.g. oral prednisolone, colchicine</td>
<td>Tablets</td>
<td>• Oral prednisolone 40mg for 5 days, dose to be reduced by 5mg every 2 days down to 5mg, then by 1mg per day OR • Colchicine 500mcg/day</td>
<td>Reserved for more severe ulceration. Significant risk of adverse effects.</td>
</tr>
</tbody>
</table>

Management for Major Aphthous Ulcers

- Clobetasol ointment in adhesive gel may be applied twice or three times daily for up to one week.
- If necessary the treatment may be prolonged for a further 3 days, along with the addition of an antifungal agent e.g. chlorhexidine solution, and miconazole oral gel for 1 day.
- When the condition does not improve or in hard-to-reach ulcers, the patient may be prescribed oral corticosteroids such as 50mg prednisolone daily until the ulcers decrease to at least half of their original size, the dose is then to be tapered down slowly (Gandolfo et al, 2002).

Management for Herpetiform Ulcers

- Oral prednisolone 50mg is to be administered as a daily dose for 3 days, reduced to 25mg o.d. for another 3 days and then 3 tablets administered every other day until there is a reduction of at least half of the number of lesions (Scully, 2008).
- Parenteral or oral (tablets or oral suspension) aciclovir may be prescribed in immunocompromised patients (Scully and Felix, 2005).

<table>
<thead>
<tr>
<th>Table 2 - NSAIDs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cautions</strong></td>
</tr>
<tr>
<td>- Elderly</td>
</tr>
<tr>
<td>- Hepatic or cardiac impairment</td>
</tr>
<tr>
<td><strong>Contra-indications</strong></td>
</tr>
<tr>
<td>- Hypersensitivity</td>
</tr>
<tr>
<td>- Pregnant or breast-feeding mothers</td>
</tr>
<tr>
<td>- Renal impairment</td>
</tr>
<tr>
<td>- Severe heart failure</td>
</tr>
<tr>
<td>- Haemophilia and bleeding disorders</td>
</tr>
<tr>
<td>- History of, or acute peptic ulcer</td>
</tr>
<tr>
<td>- Asthma</td>
</tr>
<tr>
<td><strong>Common side-effects</strong></td>
</tr>
<tr>
<td>- Gastro-intestinal discomfort, nausea and diarrhoea</td>
</tr>
<tr>
<td>- Bleeding and ulceration</td>
</tr>
<tr>
<td>- Hypersensitivity reactions e.g. rashes, angioedema</td>
</tr>
<tr>
<td><strong>Common interactions</strong></td>
</tr>
<tr>
<td>- Antidepressants</td>
</tr>
<tr>
<td>- Antihypertensives</td>
</tr>
<tr>
<td>- Corticosteroids</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
</tr>
<tr>
<td>- To be taken with or after food to reduce gastric irritation.</td>
</tr>
<tr>
<td>- If used in renal impairment, the lowest possible dose should be prescribed for the shortest possible time, along with monitoring of renal function.</td>
</tr>
<tr>
<td>- May cause worsening of asthma.</td>
</tr>
</tbody>
</table>
Table 3 – Systemic Corticosteroids

<table>
<thead>
<tr>
<th>Cautions</th>
<th>Contra-indications</th>
<th>Common side-effects</th>
<th>Common interactions</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Children and adolescents | • Systemic infection  
• Live virus vaccines in immunosuppressive doses | • Diabetes  
• Hypertension  
• Sodium and water retention  
• Potassium and calcium loss  
• Osteoporosis  
• Muscle wasting  
• Adrenal suppression  
• Immunosuppression  
• Suppression of growth in children  
• Gastro-intestinal effects e.g. dyspepsia, abdominal distension  
• Musculoskeletal effects e.g. muscle weakness  
• Endocrine effects e.g. menstrual irregularities, hirsutism  
• Ophthalmic effects e.g. glaucoma  
• Neuropsychiatric effects e.g. mood and behavioural disturbances | • Antiepileptics  
• NSAIDs  
• Oral Anticoagulants | • Gradual withdrawal of corticosteroids is recommended, as this may lead to acute insufficiency, hypotension or death.  
• Low maintenance dose reduces the occurrence of side-effects.  
• To be taken with or after food to reduce gastric irritation. |

Notes:
- Gradual withdrawal of corticosteroids is recommended, as this may lead to acute insufficiency, hypotension or death.
- Low maintenance dose reduces the occurrence of side-effects.
- To be taken with or after food to reduce gastric irritation.
<table>
<thead>
<tr>
<th>Pharmacological class</th>
<th>Examples of generic name/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antihistamines</td>
<td>• loratidine</td>
</tr>
<tr>
<td></td>
<td>• hydroxyzine</td>
</tr>
<tr>
<td></td>
<td>• promethazine</td>
</tr>
<tr>
<td>Anticholinergics or antispasmodics</td>
<td>• hyoscyamine</td>
</tr>
<tr>
<td></td>
<td>• tolterodine</td>
</tr>
<tr>
<td></td>
<td>• oxybutynin</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>• flurazepam</td>
</tr>
<tr>
<td></td>
<td>• triazolam</td>
</tr>
<tr>
<td></td>
<td>• temazepam</td>
</tr>
<tr>
<td>Antidepressants</td>
<td>• clomipramine</td>
</tr>
<tr>
<td></td>
<td>• sertraline</td>
</tr>
<tr>
<td></td>
<td>• venlafaxine</td>
</tr>
<tr>
<td>Antidiarrhoeals</td>
<td>• loperamide</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>• ibuprofen</td>
</tr>
<tr>
<td></td>
<td>• celecoxib</td>
</tr>
<tr>
<td></td>
<td>• naproxen</td>
</tr>
<tr>
<td>Antiparkinsonian drugs</td>
<td>• levodopa</td>
</tr>
<tr>
<td></td>
<td>• orphenadrine</td>
</tr>
<tr>
<td></td>
<td>• amantadine</td>
</tr>
<tr>
<td>Diuretics</td>
<td>• spironolactone</td>
</tr>
<tr>
<td></td>
<td>• bumetanide</td>
</tr>
<tr>
<td></td>
<td>• amiloride</td>
</tr>
<tr>
<td>Proton Pump Inhibitors</td>
<td>• omeprazole</td>
</tr>
<tr>
<td></td>
<td>• lansoprazole</td>
</tr>
</tbody>
</table>

(Adapted from: Azzopardi LM. Lecture notes in Pharmacy Practice. Pharmaceutical Press; 2010, p.193, 357-8)
Comparison of anticholinergic effects of different classes of xerogenic drugs
(Tables 5-7 - Adopted from: Azzopardi LM. Lecture notes in Pharmacy Practice. Pharmaceutical Press; 2010, p.193, 357-8)

**Table 5 - Relative anticholinergic potency of antipsychotic drugs – phenothiazines**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Anticholinergic effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aliphatic e.g. chlorpromazine</td>
<td>4+</td>
</tr>
<tr>
<td>Piperazine e.g. trifluoperazine</td>
<td>2+</td>
</tr>
<tr>
<td>Piperidine e.g. thioridazine</td>
<td>5+</td>
</tr>
</tbody>
</table>

**Table 6 - Relative anticholinergic potency of other antipsychotic drugs**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Anticholinergic effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thioxanthenes e.g. flupentixol</td>
<td>2+</td>
</tr>
<tr>
<td>Butyrophenones e.g. haloperidol</td>
<td>1+</td>
</tr>
<tr>
<td>Atypical e.g. clozapine</td>
<td>3+</td>
</tr>
</tbody>
</table>

**Table 7 - Relative anticholinergic potency of antidepressants**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Anticholinergic effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitriptyline</td>
<td>4+</td>
</tr>
<tr>
<td>Clomipramine</td>
<td>4+</td>
</tr>
<tr>
<td>Imipramine</td>
<td>3+</td>
</tr>
<tr>
<td>Maprotiline</td>
<td>2+</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>0</td>
</tr>
<tr>
<td>Paroxetine</td>
<td>1+</td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>1+</td>
</tr>
</tbody>
</table>
Oral hygiene


“Oral health begins with clean teeth. Too tired to brush your teeth? Too busy to floss? If you’re tempted to skip these daily chores, remember that your smile depends on these simple dental care habits” (Mayo Clinic, 2009).

Brushing teeth

Teeth should be brushed from two to three times daily with a soft-headed, soft-bristled toothbrush along with toothpaste which contains added fluoride. For greatest effect the toothbrush should be held at a slight angle against the teeth. Brushing should be gentle with regular back-and-forth motions, including the tongue and all the faces of the teeth to remove any mouth-borne bacteria. A toothbrush should be replaced regularly, every 3-4 months or once the bristles have frayed.

Electric- or battery-operated toothbrushes are indicated for those patients with reduced manual dexterity e.g. people with rheumatoid arthritis and the elderly.

Flossing teeth

Daily flossing is important, as floss reaches areas of the mouth which are inaccessible with a normal toothbrush. A piece of dental floss should be wound between the two middle fingers of each hand, leaving a small piece of floss in between to start flossing the first tooth. The floss should be gently pulled from the gumline to the upper part of the tooth, and to all sides of the tooth. The next tooth should be flossed with a new piece of floss.

Rinsing the mouth

In addition to daily brushing and flossing, mouthwashes may be used to help remove the debris and other contents from between the teeth. Mouthwashes may help in reducing the occurrence of plaque. Several different types of mouthwashes are available; with antiseptic or antimicrobial properties. The addition of alcohol to mouthwash may dry out the mouth, and therefore alcohol-free mouthwashes are preferred.

Regular visits to the dentist

In addition to daily brushing, flossing and rinsing, it is important to visit a dentist at least every 6 months. Dentists are health care professionals specialised in the buccal area and can therefore easily diagnose any oral problems.
Section 4

REFERENCES
References


FOR THE TREATMENT OF PAIN AND IRRITATION OF THE THROAT, MOUTH AND GUMS.

Angelini

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