Protocols in Dental Conditions

Recurrent Aphthous Ulcers
Dental Abscess
Xerostomia
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.

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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
Contents

Section 1: Introduction
Abbreviations 10
Glossary 10
Interpretation of shapes 11

Section 2: Treatment protocols
Introductory protocol common to all three conditions 14
Recurrent Aphthous ulcers protocol 16
Xerostomia protocol 21
Dental abscess protocol 26

Section 3: Appendix
Main predisposing factors of Recurrent Aphthous Ulcers 30
Table 1 PoMs used for severe Recurrent Aphthous Ulcers 30
Management for Major Aphthous Ulcers 31
Management for Herpetiform Ulcers 31
Table 2 Non-steroidal anti-inflammatory drugs 31
Table 3 Systemic Corticosteroids 32
Table 4 Drugs that may cause dry mouth 33
Table 5 Anticholinergic effects of antipsychotics (phenothiazines) 34
Table 6 Anticholinergic effects of antipsychotics (others) 34
Table 7 Anticholinergic effects of antidepressants 34
Oral hygiene 35

Section 4: References
References 37
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
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
PoMs: Prescription only Medicine
RAU: Recurrent Aphthous Ulcers

g: grams
kg: kilograms


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>
</table>
| ![Action box & Treatment box](image) | Action box: Indicates when an action is required to be carried out by the pharmacist  
Treatment box: Contains OTC treatment |
| ![Connector box](image) | Connects one box to another |
| ![Data box](image) | Represents known information about the patient |
| ![Decision box](image) | Poses yes-or-no questions to the pharmacist, thus leading to different paths |
| ![Termination box](image) | Indicates when it is time to exit the protocol |
| ![Treatment box for PoMs](image) | Contains treatments which are considered as PoMs |
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Effective Therapy
Gradient compression for high medical efficacy

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Section 2

TREATMENT PROTOCOLS

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Pharmacist greets the patient

Patient presents with a prescription?

YES -> Go to step 9

NO -> New patient?

NO -> Go to step 5

YES -> Establish the identity of the patient

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

Recurrent aphthous ulcers
- Go to step 21

Xerostomia
- Go to step 64

Dental abscess
- Go to step 104
Patients present with prescription

1. Establish identity of the patient
2. Confirm patient knowledge on prescribed medication
3. Is medication/dose adequate for the patient?
   - Yes
   - No: Order medication and ask the patient to collect it later or refer patient to another pharmacy; depending on the severity of the individual case
4. Is medication in stock at the pharmacy?
   - Yes
   - No: Contact the prescriber with queries
5. Is medication/dose adequate for the patient?
   - Yes
   - No: Contact the prescriber and discuss an alternative treatment which does not interact with the previous medication
6. Does the medication interact with the prescribed medication?
   - Yes: Go to step 18
   - No
7. Is the patient currently taking any other medication?
   - Yes
   - No: Explain the regimen, length of treatment and anything to be avoided with the medication
8. Check expiry date of the product
9. Dispense medication

Go to step 18
21. Recurrent Aphthous Ulcers

22. Accompanying conditions?
   - YES
   - NO

   - Extra-oral symptoms – genital or ocular?
     - YES
     - NO

   - Presence of predisposing factors? (as per page 30)
     - NO
     - YES

23. Signs of systemic illness e.g. fever
   - NO associated pain or discomfort
   - Uneven colouration
   - Patient is diabetic

24. Refer and exit protocol

25. Refer and exit protocol

26. Establish the number of ulcers in each attack

27. Refer and exit protocol

28. Go to step 29
Single ulcers? YES

Has a drug been applied topically at the site?

Is the patient taking any medication?

Are the ulcers recurrent and not confluent?

Located towards the back of the mouth?

Establish the location of ulcers

Refer and exit protocol; MjAU or HU

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

NO

NO

NO

NO

YES

YES

YES

YES

NO

GO to step 43

30

32

33

34

35

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40

41

42

29

31

33

Multiple ulcers

Has a drug been applied topically at the site?

Refer and exit protocol

Refer and exit protocol

Refer and exit protocol

Repeat

Repeat

Repeat

Repeat

Repeat

Repeat

Repeat

Repeat

Repeat

Repeat
Is the patient symptomatic?

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

If YES, continue.

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

Was the treatment successful?

If YES, Patient is receiving adequate treatment.

If 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
Spiramycin-Metronidazole

To Prevent and Treat The Oral Infections

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 disulfiram, 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, non-recommended.

Diverse conditions: Peripheral neuropathy, paresthesia, ataxia, vertigo, convulsions. Avoid taking alcoholic beverages and medicinal products containing alcohol during treatment with Rodogyl and for at least 48 hours afterwards. Combinations requiring specific precautions: Oral anticoagulants Increase of the oral anticoagulant effect and risk of haemorrhage due to decrease in hepatic metabolism.

Pregnancy and lactation

Pregnancy The use of this medicament may be allowed during pregnancy, if required. Independently of the period. METRONIDAZOLE: There is inadequate evidence of the safety of metronidazole in pregnancy but it has been in wide use for many years without apparent ill consequence. Nevertheless metronidazole, like other medicines, should not be given during pregnancy or during lactation unless the physician considers it essential; in these circumstances the short, high-dosage regimens are not recommended. Metronidazole crosses the placental barrier and passes into maternal milk.

SPIRAMYCIN: The use of spiramycin may be allowed during pregnancy, if required. Actually, the extensive use of spiramycin during pregnancy has not shown, up to now, any malformation or foetotoxic effect. 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 Patients shall be warned of potential risk of vertigo, confusion, hallucinations or convulsions and be advised not to drive vehicles or use machines in case such problems may occur.

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, urticaria, 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) Glositis 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), Peripheral neuropathies, Convulsions, vertigo, ataxia. Psychiatric problems Confusion, hallucinations. Blood cell line: Very rare cases of neutropenia, agnanglycotosis and thrombocytopenia, pancitopenia. 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.
myalgia, arthralgia and visual disturbances. Appearance of a brown-reddish colour of the urines due to the presence of water-soluble pigments resulting from the product’s metabolism, psychiatric problems (confusion, hallucinations). Blood cell line: Very rare cases of neutropenia, agranulocytosis and thrombocytopenia, anaphylactic shock. Central and peripheral nervous system: Cephalalgia (headaches), peripheral neuropathies, convulsions, vertigo, ataxia.

Treatment. Skin and appendages: Constipation, pruritus, cutaneous eruption sometimes with fever, urticaria, Quincke edema, exceptionally.

TO METRONIDAZOLE: Gastro-intestinal disorders: Benign digestion problems (epigastric pain, nausea, vomiting, diarrhoea) glossitis with tests. Blood cell line: Very rare cases of hemolytic anemia have been reported (cf. 4.4 “Special warnings and precautions for use”). RELATED TO SPIRAMYCIN: Gastro-intestinal disorders: Gastric pain, nausea, vomiting, diarrhoea and very.

Undesirable effects.

Central and peripheral nervous system: Occasional and transient paresthesias. Hepatic manifestations: Very rare abnormalities in hepatic may occur.

of this medicament must be avoided during breastfeeding. to now, any malformation or foetotoxic effect.

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risk of haemorrhage due to decrease in hepatic metabolism.

combinations requiring specific precautions. 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 problems caused by high-dose treatment and/or prolonged treatment, it is recommended to carry out regular blood tests, especially for of glucose-6-phosphate dehydrogenase; the use of spiramycin in this population is not recommended. In case of history of hematological may occur.

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Does the patient smoke? [71]

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

Is the patient elderly? [75]

Assess the medication profile of the patient [76]

Does the patient drink alcohol? [73]

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

Is the cause known? [79]

Polypharmacy? [77]

Objective evidence of hyposalivation? [80]

Establish whether patient suffers from anxiety, stress or depression [81]

Management with salivary substitutes and salivary stimulants [83]

Go to step 85

Refer to a doctor for an alternative drug/a decrease in dose [90]

Dispense same medication [98]

Refer and exit the protocol [92]

Go to step 99

Is the medication known? [96]

Is the medication suitable? [97]

Any medication previously used to treat condition? [95]

Drug-induced hyposalivation [86]

Irradiation of salivary glands? [91]

Radiation-induced hyposalivation [93]

Onset related to drugs producing hyposalivation? [85]

Establish whether patient started using a new drug treatment/a recent increase in dose [87]

Assess the medication profile of the patient [88]
Onset related to drugs producing hyposalivation?

YES

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

NO

Drug-induced hyposalivation

Refer and exit the protocol

Management with salivary substitutes

Any medication previously used to treat condition?

YES

Is the medication known?

YES

Is the medication suitable?

YES

Dispense same medication

NO

No

NO

Go to step 99

Irradiation of salivary glands?

YES

Go to step 95

NO

Radiation-induced hyposalivation

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

Any medication previously used to treat condition?

YES

Is the medication known?

YES

Is the medication suitable?

YES

Dispense same medication

NO

NO

NO

Go to step 99

98

95

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99
<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation/s</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Salivary substitutes:</strong> e.g.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylitol, glucose oxidase, lactoperoxidase (biotène®, biotène® oralbalance®)</td>
<td>• Mouthwash</td>
<td>• Rinse and gargle b.d.</td>
</tr>
<tr>
<td></td>
<td>• Oral gel</td>
<td>• Apply to gums and tongue, as required</td>
</tr>
<tr>
<td></td>
<td>• Xylitol, mineral salts spray</td>
<td>• Spray b.d. or t.d.s., as required</td>
</tr>
<tr>
<td></td>
<td>• Xylitol, Sodium fluoride, provitamin B5, vitamin E (Kin Hidrat)</td>
<td>• Brush for 2-3 minutes t.d.s.</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>
<tr>
<td><strong>Salivary stimulants:</strong> e.g.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylitol or sorbitol</td>
<td>• Sugar-free chewing gum</td>
<td>• Use as required</td>
</tr>
<tr>
<td>Diabetic sweets</td>
<td>• Sweets</td>
<td>• Use as required</td>
</tr>
<tr>
<td>Xylitol, betaine, olive oil (Xerostom® with Saliactive®)</td>
<td>• Toothpaste</td>
<td>• Toothpaste and mouthwash: t.d.s., after main meals</td>
</tr>
<tr>
<td></td>
<td>• Mouthwash</td>
<td>• Spray as required</td>
</tr>
<tr>
<td></td>
<td>• Oral spray</td>
<td>• Apply saliva substitutes before bedtime</td>
</tr>
<tr>
<td></td>
<td>• Saliva substitutes</td>
<td>• Dental gum and pastilles: as required</td>
</tr>
<tr>
<td></td>
<td>• Dental gum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Pastilles</td>
<td></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

**Flowchart:**
- Was the treatment successful?
  - Yes: Patient is receiving adequate treatment
  - No: Refer and exit protocol
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

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

0% ALCOHOL

Immediate relief

**XYLITOL (10%) MINERALS SALTS**

SODIUM FLUORIDE

**XYLITOL (10%)**

**PRO-VITAMIN B5**

**VITAMIN E**

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

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

No

Yes

Refer and exit protocol

No

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

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

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

Does the patient practice good oral hygiene?

Yes

Go to step 113

No

Does the patient smoke?

Yes

No
**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><strong>For beta-lactam resistant organisms:</strong> Co-amoxiclov monotherapy (Augmentin®)</td>
<td>Tablets, Oral suspension</td>
<td>22.5mg/kg/dose b.d.</td>
</tr>
<tr>
<td><strong>In penicillin-allergic patients:</strong> Clindamycin (Dalacin C®)</td>
<td>Capsules</td>
<td>10mg/kg/dose t.d.s.</td>
</tr>
<tr>
<td>Paracetamol (Panadol®)</td>
<td>Tablets, Oral suspension</td>
<td>15-20mg/kg orally q.d.s., 30mg/kg rectally as a single dose</td>
</tr>
<tr>
<td>NSAIDs e.g. Ibuprofen (Nurofen®)</td>
<td>Tablets, Oral suspension</td>
<td>5-10mg/kg every 8 hours</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

Check that dose/therapy is appropriate. Confirm that previous treatment has not worsened condition or caused any side effects.

Refer to a dentist and exit protocol.

Is the patient under 12 years?

NO

Go to step 121

YES

Refer to a dentist.

Step 120 shows routinely prescribed antibiotics for management of Dental Abscess.
### Medication Formulation/s Frequency

<table>
<thead>
<tr>
<th>Medication</th>
<th>Formulation/s</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paracetamol</td>
<td>• Tablets</td>
<td>0.5-1g q.d.s.</td>
</tr>
<tr>
<td></td>
<td>• Oral suspension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Suppositories</td>
<td></td>
</tr>
<tr>
<td>NSAIDs e.g. Ibuprofen</td>
<td>• Tablets</td>
<td>300-400mg t.d.s. or q.d.s.</td>
</tr>
<tr>
<td></td>
<td>• Oral suspension</td>
<td></td>
</tr>
<tr>
<td>Amoxicillin (Amoxil®) and Metronidazole (Flagyl®)</td>
<td>• Tablets</td>
<td>250-500mg, 200mg, respectively, 8 hourly with meals for 3-7 days</td>
</tr>
<tr>
<td></td>
<td>• Capsules (amoxicillin only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Oral suspension</td>
<td></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></td>
<td>• Oral suspension</td>
<td></td>
</tr>
<tr>
<td><strong>For beta-lactam resistant organisms:</strong></td>
<td>• Tablets</td>
<td>375mg t.d.s. for 5 days</td>
</tr>
<tr>
<td>Co-amoxiclav monotherapy (Augmentin®)</td>
<td>• Oral suspension</td>
<td></td>
</tr>
<tr>
<td><strong>In penicillin-allergic patients:</strong></td>
<td>• Capsules</td>
<td>150-300mg q.d.s. for 5 days</td>
</tr>
<tr>
<td>Clindamycin (Dalacin C®)</td>
<td>• Capsules</td>
<td></td>
</tr>
</tbody>
</table>

Step 123 shows routinely prescribed antibiotics for management of Dental Abscess

Refer to a dentist
Section 3

APPENDIX
Main predisposing factors of Recurrent Aphthous Ulcers

• Haematological deficiency states:
  - Low levels of iron
  - Low levels of folate or vitamin $B_{12}$
• Gastrointestinal disorders; coeliac disease, ulcerative colitis and Crohn’s disease
• Exaggerated response to trauma
• Genetic predisposition
• Stress
• Hormonal disturbances
• Infections
• Immunological abnormalities

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

<table>
<thead>
<tr>
<th>Cautions</th>
<th>Contra-indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Children and adolescents</td>
<td>• Systemic infection</td>
</tr>
<tr>
<td>• Elderly</td>
<td>• Live virus vaccines in immunosuppressive doses</td>
</tr>
<tr>
<td>• Hypertension</td>
<td></td>
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<tr>
<td>• Pregnancy and breast-feeding</td>
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<tr>
<td>• Recent myocardial infarction</td>
<td></td>
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<tr>
<td>• Congestive heart failure</td>
<td></td>
</tr>
<tr>
<td>• Hepatic and renal impairment</td>
<td></td>
</tr>
<tr>
<td>• History of, or acute peptic ulcer</td>
<td></td>
</tr>
<tr>
<td>• Diabetes mellitus</td>
<td></td>
</tr>
<tr>
<td>• Osteoporosis</td>
<td></td>
</tr>
<tr>
<td>• Glaucoma</td>
<td></td>
</tr>
<tr>
<td>• Mental illness</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Common side-effects</th>
<th>Common interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diabetes</td>
<td>• Antiepileptics</td>
</tr>
<tr>
<td>• Hypertension</td>
<td>• Antihypertensives</td>
</tr>
<tr>
<td>• Sodium and water retention</td>
<td>• NSAIDs</td>
</tr>
<tr>
<td>• Potassium and calcium loss</td>
<td>• Oral Anticoagulants</td>
</tr>
<tr>
<td>• Osteoporosis</td>
<td></td>
</tr>
<tr>
<td>• Muscle wasting</td>
<td></td>
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<tr>
<td>• Adrenal suppression</td>
<td></td>
</tr>
<tr>
<td>• Immunosuppression</td>
<td></td>
</tr>
<tr>
<td>• Suppression of growth in children</td>
<td></td>
</tr>
<tr>
<td>• Gastro-intestinal effects e.g. dyspepsia, abdominal distension</td>
<td></td>
</tr>
<tr>
<td>• Musculoskeletal effects e.g. muscle weakness</td>
<td></td>
</tr>
<tr>
<td>• Endocrine effects e.g. menstrual irregularities, hirsutism</td>
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<tr>
<td>• Ophthalmic effects e.g. glaucoma</td>
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<tr>
<td>• Neuropsychiatric effects e.g. mood and behavioural disturbances</td>
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</tr>
<tr>
<td>High doses may lead to:</td>
<td></td>
</tr>
<tr>
<td>• Cushing’s syndrome, with moon face, striae and acne</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>• Gradual withdrawal of corticosteroids is recommended, as this may lead to acute insufficiency, hypotension or death.</td>
</tr>
<tr>
<td>• Low maintenance dose reduces the occurrence of side-effects.</td>
</tr>
<tr>
<td>• To be taken with or after food to reduce gastric irritation.</td>
</tr>
<tr>
<td>Pharmacological class</td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td><strong>Antihistamines</strong></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Anticholinergics or antispasmodics</strong></td>
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<td></td>
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<tr>
<td><strong>Benzodiazepines</strong></td>
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<tr>
<td><strong>Antidepressants</strong></td>
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<tr>
<td><strong>Antidiarrhoeals</strong></td>
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<tr>
<td><strong>NSAIDs</strong></td>
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<td></td>
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<tr>
<td><strong>Antiparkinsonian drugs</strong></td>
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<td><strong>Diuretics</strong></td>
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<tr>
<td><strong>Proton Pump Inhibitors</strong></td>
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</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

(Table 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 |
|-----------------------------------|----------------------------------|
| Drug                              | Anticholinergic effects          |
| Aliphatic e.g. chlorpromazine      | 4+                               |
| Piperazine e.g. trifluoperazine    | 2+                               |
| Piperidine e.g. thioridazine       | 5+                               |

<table>
<thead>
<tr>
<th>Table 6 - Relative anticholinergic potency of other antipsychotic drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug</td>
</tr>
<tr>
<td>Thioxanthenes e.g. flupentixol</td>
</tr>
<tr>
<td>Butyrophenones e.g. haloperidol</td>
</tr>
<tr>
<td>Atypical e.g. clozapine</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 7 - Relative anticholinergic potency of antidepressants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug</td>
</tr>
<tr>
<td>Amitriptyline</td>
</tr>
<tr>
<td>Clomipramine</td>
</tr>
<tr>
<td>Imipramine</td>
</tr>
<tr>
<td>Maprotiline</td>
</tr>
<tr>
<td>Fluoxetine</td>
</tr>
<tr>
<td>Paroxetine</td>
</tr>
<tr>
<td>Venlafaxine</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.
References


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

Angelini
Paracetamol tablets Reinvented

Introducing New Panadol Advance 500 mg Tablets, the only paracetamol formulation to contain the unique Optizorb™ disintegration system.

This allows the tablets to disperse up to 5 times faster in the stomach than ordinary paracetamol.¹

From the above graph you can see Panadol Advance Tablets reach therapeutic levels faster than ordinary paracetamol.²

Recommend Panadol Advance to your patients to tackle everything from period pain to backache.

For relief from mild to moderate pain, help customers get their day back on track with Panadol Advance