Sulphacetamide – from eyes to fingers and toes?

By Dr Lisa Nissen

Skin and nail conditions are common occurrences in everyday pharmacy practice, ranging from simple cut and scratches to allergic reactions and infections. One of the most common hand infections is paronychia, an infection of the perionychium (the skin that hangs over the side of the nail). Paronychia is generally categorised as either acute or chronic depending on the amount of time the infection has been present.

Paronychia is a condition frequently occurring in children because of nail biting and finger sucking. However, it is also commonly seen in adults where people have their hands repeatedly exposed to moist environments or in those who have prolonged and repeated contact with irritants such as alkaloids, alkalis, or other chemicals.

Both acute and chronic paronychia starts with a break in the epidermis. An acute infection is usually associated with trauma to the skin, for example ingrown nails or nail biting. The most common bacteria responsible being Staphylococcus aureus, while other bacteria such as Streptococcus species and Pseudomonas species are less common.

Acute infections start as a red, warm, painful swelling of the skin around the nail which may lead to the formation of pus that separated the skin from the nail. The infection generally develops over a few hours. However, it will usually clear completely in a few days and rarely recurs.

Chronic paronychia is associated with repeated irritation such as exposure to detergents and water and is most commonly caused by Candida albicans or other fungi, often mixed with bacteria. In chronic paronychia the redness and tenderness we see in acute forms of the condition are less noticeable. Each affected nail fold is swollen and lifted off the nail plate. The nail plate becomes distorted and ridged as it grows, it may become yellow or green and brittle. After recovery from the infection it may take up to a year for the nail to grow back to normal.

The relief of pain and inflammation and treatment of the bacterial infection with topical antibiotic (e.g. cephepin) is the mainstay of treatment of acute infections. However, chronic paronychia may involve a course of oral antifungal agents (e.g. itraconazole) and topical antiseptics or antifungal lotions, for example thymol, miconazole and sulphacetamide.

Sulphacetamide is a sulphonamide antibiotic, which are synthetic bacteriostatic antibiotics with a wide spectrum against most gram-positive and many gram-negative organisms. Sulphonamides inhibit multiplication of bacteria by acting as competitive inhibitors of p-aminobenzoic acid in the folic acid metabolism cycle. Topically applied sulphonamides are considered active against susceptible strains of Escherichia coli, Staphylococcus aureus, Streptococcus pneumoniae, Streptococcus viridans group, Haemophilus influenzae, Klebsiella sp. and Enterobacter sp.

Sulphacetamide is the primary ingredient in over-the-counter preparations used to treat conjunctivitis and other superficial ocular infections. One of the commonly used preparations is Bistoph-10 which contains sulphacetamide 10%. Although this product is licensed for use in the eyes, the mixed etiology of chronic paronychia (bacterial and fungal) has led to its use by dermatologists and other specialists as a topical solution of sulphacetamide for treatment of the skin condition with good effect.

While the clinical data used to support the topical use of sulphacetamide for skin infections goes back into the early 1950s its benefit is still being seen today in patients around the world. Topical preparations such as the 10% eye drop solution provide a mean of accessing this useful antibacterial agent and may be something pharmacists will see recommended for patients under their care. In this case sulphacetamide is definitely an old drug with a modern indication.

**Dosing information**

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<th>Indication</th>
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<td>Conjunctivitis, corneal ulcer, superficial ocular infections.</td>
<td>1–2 drops into the lower conjunctival sac of the affected eye(s) every 2–3 hours.</td>
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<td>Paronychia</td>
<td>Apply topically to the affected area 2–3 times a day</td>
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**Useful references**