OTC treatment of the side effects of antibiotics

Antibiotics are some of the most frequently prescribed drugs in modern medicine. They are derived wholly or partially from bacteria or moulds and are used to treat bacterial infections. They are not effective in the treatment of viral and fungal infections. They either kill microorganisms or stop them from reproducing, allowing the body’s natural defences to eliminate them.

Antibiotics may be used to treat many different bacterial infections, but unfortunately, like all drugs, they have potential side effects.

Some of the more common side effects a person taking antibiotics may experience include: thrush, diarrhoea and oral ulcers. Although these side effects may at times be serious and necessitate discontinuation of the medication, there are also times when the pharmacist may play a role in alleviating some of the side effects and ensuring better patient compliance, which in turn plays a role in reducing antibiotic resistance.

Thrush
Candida albicans causes thrush when normal host immunity or normal host flora is disrupted, as may be the case with antibiotic use. C. albicans is both normal flora and an invasive pathogen. Infection can vary from mild mucosal membrane infection to disseminated disease.

Although Candida can flourish in most environments, patients will most commonly present in the pharmacy with either oral or vaginal thrush (Candidiasis).

Vaginal candidiasis is the most common form of mucosal candidiasis. It normally occurs secondary to overgrowth of normal flora Candida species in the vagina. Bacteria such as Lactobacillus acidophilus balance Candida and prevent yeast overgrowth and pathogenic infection. Antibiotic use could disrupt the balance of normal vaginal flora and may lead to the development of vaginal thrush.

Oral candidiasis is characterised by creamy white, curd-like patches on the tongue and oral mucosa.

Topical treatment may be initiated with any of the following products:

Nystatin
Nystatin is a fungicidal and fungistatic agent effective against various yeast and yeast-like fungi. It may be used in the treatment of oral as well as vaginal thrush. Treatment should continue until 48 hours after the disappearance of symptoms.

Imidazole derivatives
The imidazole derivatives include: clotrimazole, econazole, fenticonazole or miconazole. All the agents in this group are equally effective in treating vulvovaginal candidiasis. The choice of product would depend on patient preferences such as cost and method of application. Some of the products also require a shorter treatment time.

Most of these products are available as vaginal creams, tablets or capsules. The pessary or vaginal cream should be inserted high into the vagina with the aid of the applicators provided. The creams may be applied to the vulva as well.

Both clotrimazole and miconazole are also available in oral preparations used to treat oral thrush.

Diarrhoea
Antibiotic-associated diarrhoea refers to diarrhoea that develops in a person who is taking or recently took antibiotics. It occurs when antibiotics disturb the natural balance of “good” and “bad” bacteria in the intestinal tract causing harmful bacteria to grow beyond their normal numbers. This can often lead to watery diarrhoea. The symptoms of antibiotic-associated diarrhoea are mostly mild and clear up shortly after the patient stops taking the antibiotic. In some cases however the patient may become infected with another bacterium named Clostridium difficile (C. difficile) and may develop colitis (an inflammation of the colon) or even a more serious form of colitis called pseudomembranous colitis.

Symptoms of these complications include watery diarrhoea (passing of loose watery stools) (up to 10-15 times per day), blood or pus in the stool, dehydration, abdominal tenderness and cramping of the stomach, a low grade fever, nausea, loss of appetite and weight loss. If a patient develops any of these more serious symptoms they should be referred to a doctor as soon as possible.

For patients with milder symptoms of diarrhoea there are a number of products available over the counter.

Probiotics
Probiotics are “healthy” microorganisms (bacteria, yeast) that can be taken by mouth. Probiotic supplements may help prevent antibiotic-associated diarrhoea. Studies on probiotics are however inconclusive regarding the benefit a patient may derive from their use. Data from trials have provided us with clear evidence on the efficacy of some strains in the gut, but more research needs to be done before their clinical benefit can be confirmed.

Rehydration
Diarrhoea can cause a person to become dehydrated quickly, especially if it is severe. To avoid becoming dehydrated, it is important to drink an adequate amount of fluids. The fluids should contain water, salt and sugar.

Commercially prepared products, similar to the oral rehydration solution recommended by the South African Paediatric Association may be used for oral rehydration. The inclusion of dextrose in the formulation is important as it promotes the absorption of fluids and electrolytes.

Symptomatic therapy
The antimotility agent loperamide may be used for the symptomatic treatment of patients with acute diarrhoea in whom fever is absent or low grade and the stools are not bloody.

Diphenoxylate is an alternative but it has central opiate effects and may cause cholinergic side effects.

Patients should also be warned that these agents may mask the amount of fluid loss since fluid may pool in the intestine. It is therefore important to advise patients to still take lots of fluids when antimotility agents are being used.

Intestinal adsorbents
Evidence that adsorbents such as chalk and kaolin mixtures are effective is unconvincing.
Oral ulcers
Oral ulcers (also called aphthea) are painful oral lesions that appear as localised, shallow, round to oval ulcers with a greyish base.

Topical analgesics may be applied to the ulcer two to four times daily until the ulcer is healed. Early initiation of treatment may result in more rapid healing. Topical analgesics available in South Africa include benzydamine a non steroidal anti inflammatory agent that also has topical analgesic and local anti inflammatory properties. Choline salicylate gel may also provide analgesia.

Local anaesthetics for example benzocaine and lidocaine are found in several products including mouthwashes, throat sprays, mouth paints and lozenges.

Antibacterial agents have also been used to help prevent secondary infection. These include chlorhexidine and povidone-iodine mouth washes. They may also help accelerate healing of recurrent lesions.

Conclusion
Antibiotics have been hailed as one of the greatest medical breakthroughs in recent times. Improper use and prescribing may however lead to resistance and the drugs may become ineffective. Helping patients manage any side effects experienced whilst on treatment may help with patient compliance and minimise resistance.

Reference:
1. Wanke. C.A. Calderwood, S.B. Baron, E.L. Approach to the adult with acute diarrhea in developed countries. 2008. UpToDate
3. Kelly, C.P. LaMont, J.T. Treatment of antibiotic-associated diarrhea caused by Clostridium difficile. UpToDate: 2008
4. Kelly, C.P. LaMont, J.T. Patient information: Antibiotic-associated diarrhea caused by Clostridium difficile. UpToDate: 2008