RESOLUTION health Medical Scheme

Microbial resistance towards antibiotics on the increase

Tuesday, 5 April 2011: World Health Day will be commemorated on 7 April and this year, the World Health Organisation (WHO) has selected antimicrobial resistance as its focus area. According to Resolution Health Medical Scheme (RHMS), antibiotic resistance is a problem which continues to escalate, mainly as a consequence of the long-standing misuse of antimicrobial agents. As a result, there are fewer and fewer antibiotics available to treat serious infections.

The discovery of penicillin revolutionised the treatment of infective diseases such as septic wounds, pneumonia and the like. “However, as with any other evolutionary pressure, fast dividing microorganisms devised ways of ‘avoiding’ or ‘resisting’ the antibiotic threat to their existence, so necessitating the development of newer agents able to kill the more resistant organisms,” says Professor Jacques Snyman of RHMS.

Anti-microbial resistance is a continuous process. The current resistance problem is however more daunting than ever, as we are quickly running out of antibiotic options able to kill pathogens such as resistant staphylococci (known to cause serious infections in patients in hospital), tubercle bacilli (responsible for resistant TB, especially in immune compromised patients), etc.

“The over-prescription and inappropriate use of broad spectrum antibiotics hastens the process of antimicrobial resistance due to selection pressure on microbes,” says Snyman. “Patients often inappropriately demand and clinicians follow or lead by the equally inappropriate prescription of antibiotics for the treatment of viral infections which are not responsive to antibiotics in any event, resulting in the development of resistance in other organisms.”

This is particularly problematic in the elderly (>65 years), very young (<3 years) and those who are immune-compromised, i.e. patients with HIV/AIDS, on cancer chemotherapy, or those taking immunosuppressive drugs for whatever reason. “These patients’ immune systems are not able to appropriately assist in clearing infective organisms even with the assistance of antibiotics, resulting in the quicker development of resistant pathogens which are often also more virulent,” says Prof Snyman.

In 2005, methicillin-resistant Staphylococcus aureus caused more than 90 000 life-threatening infections in the USA alone.

By 2015, it is believed that multi-drug resistant TB (MDR-TB) will affect 2 million individuals. According to the WHO, 500 000 MDR-TB cases and 40 000 XDR-TB cases (extensively drug resistant) emerge every year worldwide. Says Snyman: “This poses a tremendous challenge for TB control, especially in a society where the prevalence of HIV/AIDS is high and the socio-economic status of large parts of the population allows for extensive spread.”

According to Snyman, the burden of TB is already picking up speed in South Africa, resulting in many deaths due to the inability to treat these patients as antibiotics can no longer cure all these infections.

"The solutions are complex. We need to use antibiotics more judiciously; follow guidelines for prescription better; avoid the unnecessary use of antibiotics, assist patients to comply with long-term treatment in cases such as TB and seek medical advice when necessary, and don't self-medicate with left-over antibiotics."