

# Antibiotics: Using Them Judiciously

by Tanya Melillo Fenech

A third of all primary care consultations are due to infectious diseases and more than half of these are due to respiratory tract infections. Respiratory infections are among the most frequent reasons for prescribing antibiotics even though the majority of upper respiratory tract infections are of viral origin and antibiotics are known to have minimal effect against them. In fact many studies show that over 75% of cases of otitis media and sinusitis and more than half of all pharyngo-tonsillitis and acute bronchitis are treated with antibiotics.

There is obviously seasonal variation in the use of antibiotics as maximum consumption of antibiotics correlates with influenza activity. Research has shown that the excessive use of antibiotics has contributed to the emergence and spread of antibiotic-resistant bacteria in the community. Resistance to antibiotics is high among Gram-positive and Gram-negative bacteria. Countries with the highest per-capita antibiotic consumption have the highest frequency and patterns of resistance.

Studies have shown significant differences in prescription of antibiotics between countries and also between physicians in the same country. Factors contributing to these differences include the doctor's patient load, years of practice, limited consultation time, characteristics of the prescribers such as their age and sex, as well as patients' employment status and their demand for antibiotics.

It has been suggested that doctors who are more familiar with their patients adopt a more subjective way of prescribing and are more influenced by the patient's expectations and requests, rather than following clinical practice guidelines.

One of the main problems general practitioners face on a daily basis is that the information obtained from the clinical history and physical examination does not provide enough information to enable them

to conclude whether the aetiology of the infection is bacterial or not and so when in doubt, antibiotics are prescribed. Moreover, family doctors tend to overestimate the proportion of their patients who expect to receive antibiotics. To add to all this, those patients who indeed expect to receive antibiotics, often have expectations based on false assumptions or experiences from previous visits. Another aspect that plays a part in prescribing antibiotics is the different weight doctors give to different signs and symptoms. Many doctors give greater weight to purulent sputum in bronchitic disease while scientific evidence shows that purulence is a natural part of the evolution of bronchitis and that its presence does not imply a bacterial superinfection in patients with no chronic lung disease.

Furthermore, during emergencies, such as influenza epidemics, doctors have to deal with high work loads and with limited available consultation time to make quick

decisions and it takes less time to write a prescription than to give a patient a detailed explanation as to why antibiotic treatment is not indicated.

Various strategies have proven useful in promoting more prudent use of antibiotics in primary care and these include:

- Delayed prescription of antibiotics in non-serious infections of suspected viral aetiology in patients who express a preference for antibiotics: This consists in telling patients to withhold from taking antibiotics unless symptoms persist or worsen after a few days. Various studies performed in the UK have found a reduction in the use of antibiotics when delayed prescription is implemented in uncomplicated respiratory illnesses.
- Improving communication skills between the family doctor and his patients: Doctors need to communicate clearly with their patients about the evolution of the infectious process they are suffering from. In one study, McFarlane et al. observed that adults who visit their doctor because of coughing revisit less if they receive clear information on the natural history of the disease.
- Educate our patients on misconceptions on antibiotics: A Eurobarometer survey done in 2009 in EU member states clearly showed that still many Europeans including Maltese people have many misconceptions on antibiotics use. 53% of Europeans wrongly think that antibiotics kill viruses and that they are effective against colds and influenza. The survey showed that respondents from Southern European union countries are the ones most likely to use antibiotics. The Italians (57%), seconded by the Maltese (55%) and then by Spain (53%) and Romania (51%) stated that they have taken antibiotics in the last year. When asked for reasons for taking antibiotics, the Maltese gave the highest score (31%) from all the EU countries for sorethroats, and 26% for influenza.
- The use of rapid diagnostic tests in the doctor's office: These include rapid antigenic tests for the diagnosis of pharyngitis by group A beta-haemolytic streptococcus and the determination of C-reactive protein in capillary blood.

A reduction in the consumption of antibiotics can lead to a decline in the resistance of the microorganisms. This has been seen in a number of countries. Antibiotic use for prevention purposes should be avoided except in the specific cases such as for contacts of bacterial meningitis, latent tuberculosis infection, anatomical or functional asplenia, and contacts with pertussis.

Antibiotic resistance remains a serious public health issue as it causes a threat to patient safety, reducing options for treatment and increasing lengths of hospital stay, as well as increasing patient morbidity and mortality. It is our responsibility as doctors to raise awareness amongst our patients on the prudent use of antibiotics and to practice what we preach by using antibiotics judiciously.