

ABSTRACT

The aims of the study were to describe and analyse current antibiotic use in the public and private sectors in the Ramallah District of Palestine before and during the Intifada and to investigate the feasibility of implementing guidelines to promote the safe and effective use of antibiotics.

The main sources of data were a record-based audit of 14,600 bacteriological samples carried out by the four main laboratories, a prospective study of antibiotic use in 575 patients with suspected infections attending 12 general practice and speciality outpatient clinics, in both public and private sectors, and semi-structured interviews with laboratory directors, physicians, pharmacists and patients.

Microbial sensitivity patterns obtained from 2731 isolates were of limited value due to inaccurate and incomplete record keeping and lack of standard operating procedures. Isolates of *E. coli*, *Klebsiella* spp, *Proteus* spp. showed relatively high resistance to co-trimoxazole, while β -haemolytic *Streptococcus* group A had lower sensitivity to penicillin than described elsewhere.

The most common suspected clinical infections were respiratory (82%) and urinary (14%) conditions. Almost all cases (97%) were treated with antibiotics. Amoxicillin (44%) was by far the most prescribed antibiotic, regardless of the type infection. Inappropriate prescribing was common, due to incorrect indication (73%), choice of antibiotic (15%) or the dose and duration of therapy (12%). 40% of patients were

followed-up after one week, at which time only 46% of patients had complete symptoms resolution.

77% of all physicians (n=64) and 90% of all pharmacists (n=44) in Ramallah were personally interviewed during the Intifada. Both groups acknowledged that practices were altered during the Intifada, with antibiotics frequently provided without prescription (i.e. "over the counter" sales) and the choice of antibiotic limited by availability and cost. Patients (63) interviewed during the Intifada had sought more free or partly-free treatment, with children having priority.

Physicians and pharmacists supported the development and implementation of antibiotic guidelines, particularly under the circumstances of the Intifada. Draft guidelines were prepared for the management of respiratory and urinary tract infections.

The study is the first of its kind in Palestine and shows that urgent action is required to address the use of antibiotics. A clear policy for when and how to carry out sensitivity testing is essential, supported by adequate surveillance system for monitoring local and national trends. The Health System needs to provide appropriate training to ensure physicians are fully conversant with the principles and practice of using clinical guidelines and to support the extended role of pharmacists. The draft guidelines could then be implemented with strategies tailored to the local conditions to promote adherence. Finally, educational strategies are required to ensure that patients are made aware of the key issues surrounding antibiotic use to foster realistic expectations.