The fight between man and microbes has been ongoing ever since antibiotics were first introduced in the 20th century. Despite initial success of antibiotics in combating infections, microbes have definitely won the war.

Recent reports of worldwide spread of multiresistant New Delhi Metallo Beta lactamase (NDM-1) producing Enterobacteriaceae have serious implications. These are highly resistant to most antibiotics except colistin and Tigecyline. Since there are hardly any new antibiotics in the pipeline we are facing a grim situation. Of note is the fact that most of the Indian isolates in the study were from community acquired infections.

In a recent article in JAPI by Deshpande et al from Hinduja Hospital 22 out of 24 carbapenem resistant enterobacteriaeae were NDM-1 produces rendering carbapenems useless as choice of antibiotic of enterobacteria. Carbapenem resistance in pseudomonas and acinetobacter is well known.

Already there is widespread β lactam resistance reported since 2004 amongst enterobacteriaeae. ESBL prevalence rate of 70-90% is reported from most tertiary hospitals. Prior use of cephalosporins is an important contributor to this. Methycillin resistant staphylococcus aureus, pathogenic coagulase negative staphylococcus aureus and vancomycin resistant enterococci have been increasingly reported from various hospitals in India.

With continued antibiotic overuse, clostridium difficile may become a menace as seen in the West.

Raghunath D 3 has reviewed available data on antibiotic susceptibility of common organisms from the community.

In typhoid fever, quinolones which were initially favoured drugs in 80’s are no longer effective.

In lower respiratory tract infections, streptococcus pneumonia has retained sensitivity to penicillins, macrolides and fluoroquinolones but not to cotrimoxazole.

Vibrio cholerae and shigella have acquired resistance to the usual antibiotics.

Hence at both at community and hospital level there is urgent need for reforms. The editorial in March 2010 issue of JAPI by Dr. Abdul Ghafur states that it is already too late however it is important to at least take responsibility and change our practices for the better.

The following are the needs of the hour.

At community level:
1. Public and professional education towards rational use of antibiotics
2. Regulatory measures to control over the counter availability of antibiotics.
3. Guidelines at National / regional / local levels for use of antibiotics.
4. Improvement in standards of hygiene.
   At hospital level
1. Strict enforcement of hand hygiene.
2. Infection control committee, antibiotic managers to keep a check of usage.
3. Regular surveillance of data and antibiograms to guide empiric antibiotics selection.
4. Antibiotic Stewardship Programme
   This involves selecting an appropriate drug, optimizing its dose and duration to cure an infection while minimizing toxicity and conditions for selection of resistant bacterial strains.
5. Ensuring that cultures are sent prior to starting antibiotics to a good microbiology laboratory.
6. Measuring outcomes to evaluate effectiveness of policies.

As medical science is seeing immense technological advances, we are sure to encounter complex patients. It is time that as a nation we wake up and join hands to combat the problem of antibiotic misuse by drawing guidelines and following them strictly.

References
5. Lakshmi V. Need for national / regional guidelines and policies in India to combat antibiotic resistance. IJMM 2008,26:105-7.