Antibiotics have played a major role since last 60 years saving lives of millions of people. A famous infectious disease expert once remarked that the discovery of penicillin in the early 1940’s was a boon to the healthcare provider than the collective talent of all the physicians. Alas it was a short lived victory, with the fast developing antibiotic resistance. According to Professor Stuart H. Cohen, MD, of the University of California, quoted in Wall Street Journal that the problem of resistance has been smoldering for years, but recently like a switch it got triggered. According to a Harvard Medical School Pediatric Infectious Disease Specialist Jonathan Finklestein who quoted in the same article that antibiotic resistance is increasing too quickly and in too many organisms. Unfortunately in the battle between microbes and antibiotics, the microbes seem or have almost won the battle. This unfortunate phenomenon has occurred due to reckless use, overuse or misuse of antibiotics in the present era. A gentle caution mentioned by Sir Alexander Fleming in 1945 that “misuse of antibiotics could result in selection for resistant bacteria” has been conveniently forgotten.

Antibiotic resistance is now a global burden, where bacteria multiply even in the presence of antibiotics given in appropriate doses. No single country can vouch safety from the threat of existing and further emergence of drug resistant bacteria. Over a period of time we have seen that the bacteria have systematically developed resistance to any new agents introduced by various mechanisms.

Needless to say microbes that exhibit resistance to the above antibiotics involve, Streptococcus sp, Staphylococcus sp, Salmonella sp, Shigella sp, Enterococci sp, Acinetobacter sp, Klebsiella sp, Pseudomonas sp. Earlier nomenclature referring to simple drug resistance bacteria have progressed to multi-drug resistance bacteria (MDR), and pan-drug resistance bacteria (XDR).

The pipeline for development of new antibiotics is large, the challenge must be managed at any cost. But you cannot fool all the microbes all the time. You can fool some of the microbes all the time, you can fool all the microbes for sometime, as mentioned earlier this is essential since very few antibiotics are in the pipeline, with the microbes developing resistance through various mechanisms. Wisdom demands that the clinician in co-ordination with the microbiologist follows the concept of proper infection control, and antibiotic stewardship policy. In the editorial “Antibiotic Resistance”(Supplement to JAPI 2010;58:6), Dr. Rajiv Soman aptly states;

You can fool all the microbes for sometime,
You can fool some of the microbes all the time,
But you cannot fool all the microbes all the time.

Therefore though control of antimicrobial resistance is a major challenge for both medical fraternity, government and society at large, the challenge must be managed at any cost.

References