

Antimicrobial Resistance – A Ticking Bomb!

VIJAY NYEWALE

National President, Indian Academy of Pediatrics, 2014

*Correspondence to: Dr Yewale Hospital, Plot 6B, Sector 9, Vashi, Navi Mumbai, Maharashtra-400 703, India.
vnyewale@gmail.com.*

Antimicrobial resistance (AMR) is a global problem with serious regional impacts. We are on the verge of being thrown back to pre-antibiotic era. We are running out of antibiotics, especially those active against Gram-negative bacteria. Although there are several reasons for use and abuse of antibiotics, a major cause of increasing AMR is misuse of antibiotics by us – clinicians in individual practice. This irrational antibiotic use has led to multidrug-resistant infections like Extended spectrum beta-lactamase (ESBL) urinary tract infection/sepsis, Multidrug-resistant tuberculosis, Extensively drug-resistant tuberculosis (XDRTB), Multidrug-resistant typhoid fever, and New Delhi metallobeta-lactamase infections.

The medical fraternity appears to have woken up to the reality of multidrug resistance in old diseases like tuberculosis, malaria and typhoid, and to the call for an urgent introspection and finding out a solution. Indian Academy of Pediatrics (IAP) has taken a serious note of the menace of AMR and the threat to mankind by the bugs. The five-year plan announced by the IAP envisages training of fellow pediatricians and postgraduate students through various CMEs and workshops about rational antibiotic use. The plenary session at the Pedicon 2014 at Indore discussed the magnitude of the problem of AMR, the reasons behind, the way forward and the role of IAP. Workshops on Rational Antibiotic Practice under the IAP action Plan program is certainly a step in the direction of minimizing the antibiotic misuse. Recognizing the role of medical tutors casting a long lasting impression on the minds of postgraduate medical students, it is prudent to sow the seeds of rational antibiotic practice during their training. This workshop – designed by consensus among experts – should become a part of the postgraduate curriculum.

IAP also needs to engage into a dialogue with regulatory authorities and curb over-the-counter availability of antibiotics, prevent marketing of irrational antibiotic combinations, and control marketing of sub-

standard drugs. The responsibility of not falling prey to incorrect incentive-driven marketing strategies by pharmaceuticals lies with us. Preventing AMR involves encouraging rational antibiotic therapy at individual, hospital and community level. IAP has declared 26th September as the 'Rational antibiotic day', and plans to celebrate antibiotic awareness week.

A joint meeting of medical societies in India was convened as a pre-conference symposium of the 2nd Annual Conference of Clinical Infectious Disease Society (CIDSCON 2102) at Chennai in 2012. A road map to tackle the global challenge of AMR from Indian perspective was discussed. IAP plans to have a meeting on similar lines and involve all the stakeholders to formulate a national policy on rational antibiotic practice in pediatrics.

For policymaking and implementation of various public programs to combat the problem of AMR, it is extremely important to have sound data. It is unfortunate that in view of scarcity of such data, various conclusions about efficacy of interventions need to be extrapolated from experience of other countries. A sensitive surveillance system is required to document and track resistance.

Antibiotic stewardship is commitment to use antibiotics only when these are necessary to treat – or sometimes prevent – infections, by choosing the right antibiotics and administer them in the right way in every case. Every institute should have an antibiotic policy. While we inculcate the culture of culture-based diagnosis, laboratory facilities need to be scaled up. Good laboratory backup is essential to understand the culture-sensitivity trends in enteric fever, staphylococcal infections, tuberculosis and *Escherichia coli* infections where the threat of multidrug resistance appears to be growing day-by-day. Interactions between clinicians and microbiologists, in rationalizing the antibiotic therapy, cannot be over emphasized. Non-culture methods of establishing diagnosis need to be explored and made

available; their appropriate use should be encouraged. Strategies to control nosocomial infections and prevent spread of resistant infections are equally important and cost effective. Improving immunization coverage and introduction of new vaccines have tremendous potential of saving antibiotic use.

Pediatric infectious diseases have not yet officially been recognized as a specialty in India. Since the last two decades, the pediatricians have increasingly become sensitized to the need for information and constant update on various aspects of infectious diseases, including applied clinical pharmacology and immunization. IAP established separate Chapter of infectious diseases in 1997 under the pioneering efforts of Dr TJ Jacob John. Since then, infectious diseases have been discussed in towns, state and national levels through CMEs and conferences and the activities of the Chapter have grown

in popularity. The quarterly journal on pediatric infectious diseases was started with the similar purpose of spreading and sharing knowledge, and brainstorming over various issues in infectious diseases. Considering the ever-changing trends of infectious diseases and challenges like drug resistance, there is a need for a specialized formal training in this specialty to increase the manpower trained in their diagnosis and management. Though fellowships are available abroad, the spectrum of tropical infectious diseases and local host-environment interaction factors differ in Western countries.

Continued medical education to update and promote rational use of drugs in the rural and urban regions is of paramount importance. Unless each medical practitioner thinks twice about the need and choice of the drug before penning the prescription, the battle against resistance will be like flogging a dead horse.