

Book Review

Antibiotic resistance - The modern epidemic-Current status and research issues, D. Raghunath, V. Nagaraja, C.Durga Rao, editors [Macmillan Publishers (India), New Delhi] 2009. 407 pages. Price: Rs.715. 00
ISBN 978-0230-63824-2

Emergence of antibiotic resistant pathogens all over the world is becoming a global problem. The infectious diseases which were thought to have been conquered with the discovery of antibiotics, are back. This is no longer a problem of the developing countries alone because with the rapid travel, international trade, *etc.*, infections have disseminated across the borders. The burden of antibiotic resistance continues to increase and is acknowledged to be a major threat to the treatment of infectious diseases, particularly among patients in hospitals. In the present era of practice of evidence based medicine, there are enough data available to suggest that the risk of adverse outcomes has been found to be higher in patients with infections caused by antibiotic-resistant organisms compared with that by susceptible strains of the same pathogen, even after adjustment for underlying co-morbidities.

The problems are not limited to bacterial pathogens alone but also emerging in fungi, protozoa and viruses. Again, it is not only the rampant use of antimicrobials in human populations in the hospitals and community which is responsible for the increasing selective pressure of antibiotics, but their use in animals, aquaculture and environment also adds to the problem.

As we face this threat, there is a need to remain updated about the problem and the factors responsible for the emergence of antimicrobial resistance. The present publication is a compilation of lectures delivered by eminent national and international experts including microbiologists, clinicians and basic scientists,

having vast experience in the subject of antimicrobial resistance, conducted as a part of “The Ninth Sir Dorabji Tata Symposium”. The keynote address on worldwide threat of resistance gives an overview of the problem which addresses to the solution to the problem as well as the future plan of action.

The book includes various aspects of antimicrobial resistance including epidemiology, clinical impact of resistance, *in vitro* antimicrobial susceptibility testing, emerging resistance in *Mycobacterium tuberculosis*, fungi, and research questions for future development. Antibiotic resistance in hospitals as well as community has been extremely well covered which will give the readers a holistic view of the problem. Some of the emerging resistant pathogens are appropriately covered like XDR- TB, MDR *Salmonella enterica*, Penicillin resistant *Streptococcus pneumoniae*, MRSA and HIV strains resistant to antiretroviral agents.

To be able to control antimicrobial resistance it is important to undertake surveillance as a regular practice. To know the extent of the problem and to be able to monitor various control strategies it is important to use standard methods to generate quality result and reliable information. The chapter on testing of antibiotics has covered all these aspects. It would have been more complete if some newer approaches to antibiotic susceptibility test were added. The inclusion of susceptibility testing for *Mycobacterium tuberculosis* and antifungal susceptibility test completes the topic. The relevance of *in vitro* testing in a clinical setting and clinical correlation makes an interesting reading. The nosocomial pathogens have been a cause of concern and have been covered appropriately. The community perspective from remote areas have been added which is an eye opener. The book gives overviews of some of the control strategies needed in community as well as in hospital.

One important area of resistance in Gram negative bacteria specially the problems of ESBL producing strains, has not been covered which in the present times, is taking us back to the “pre antibiotic era”.

The problem of resistance in malaria and kala-azar has been dealt with covering some of the basic mechanisms and strategies to control the development of resistance. There is a need to understand specific mechanisms of resistance which may lead to the identification of novel targets for new antimicrobial drug development. Section on basic research includes discovery and development of new drugs, molecular mechanisms of resistance and exploring new targets.

The often neglected topic of use of antibiotics in veterinary practice and its contribution to the emergence of resistant genes has been included and addresses the issue of judicious antibiotic use in animals as well.

Besides these chapters on specific topics, the book compiles the views of experts in a panel discussions in which national and international experts participated. The interaction between the audience and the experts is interesting.

Overall, this is a comprehensive publication on the subject and should be a useful source for a better understanding of mechanisms for emergence and spread of antimicrobial resistance and to formulate effective prevention and control strategies. To develop an antibiotic policy is an international and national responsibility.

Arti Kapil

Department of Microbiology
All India Institute of Medical Sciences
New Delhi 110 029, India
akapilmicro@gmail.com

Book Received

Tuberculosis, Ira Shah (Pediatric Oncall, Mumbai)
2010. 50 pages. Price: Not mentioned.
ISBN 978-81-903035-2-1