

Minutes of the
Brainstorming Session on Antimicrobial Resistance during
'International Conference on Host-Pathogen Interactions'
organized by
National Institute of Animal Biotechnology

Venue: Auditorium, School of Life Sciences, University of Hyderabad, Hyderabad, India

Date: July 14, 2014

Time: 4:15 pm – 5:30 pm

Chaired by: Dr. Gowrishankar, CDFD, Hyderabad, India

Panel members:

Dr. Rajesh Kapur, DBT, India

Prof. Lothar Wieler, Freie University, Germany

Dr. Satya Dandekar, UC Davis, USA

Prof Gagandeep Kang, Christian Medical College, Vellore, India

Dr. J P S Gill, GADVASU, India

Dr. D.V. Singh, ILS, Bhubaneswar, India

Dr. Radha Rangarajan, Vitas Pharma, Hyderabad, India

Dr. Ashima Bhardwaj, IIAR, Ahmedabad, India

Dr. Kamini Walia, ICMR, India



The session was open to the audience for discussion. The following delegates of ICHPI participated in the discussion:

Dr. David Hume, Roslin Institute, Scotland, UK.
Dr. Niyaz Ahmad, University of Hyderabad, Hyderabad
Dr. Sandeep Prabhu, Penn State University, USA
Dr. AS Yadav, IVRI, Izatnagar
Dr. Satish Kumar, NIAB, Hyderabad

Highlights

The significance of rapidly spreading antimicrobial resistance issue in India was widely discussed in various fields such as human health, veterinary science and environment.

The major reasons for antimicrobial resistance development in India were identified as following:

- (i) Lack of awareness, education or data among the stake holders
- (ii) Unrestricted access/ availability of *over the counter* antibiotics
- (iii) Generic antibiotics are less expensive than sensitive diagnostic kits favouring indiscriminate use of antibiotics to cure illnesses
- (iv) Use of antibiotics as alternatives to good sanitary management and as growth promoters especially in poultry and dairy farms
- (v) Lack of emergency response protocols to handle and prevent epidemics
- (vi) Decreasing approvals of new antibiotics and emerging drug resistance

The following are the salient points suggested for immediate attention:

- (i) Awareness on the growing antimicrobial resistance and its impact on animal and human health to the public, doctors and other stakeholders- Lobbying the politicians for this.
- (ii) Regulation of the prescription/sale of antibiotics and standardization of antibiotic treatment regimen
- (iii) Collection of Epidemiological and Surveillance data and maintenance of a nationwide database to monitor and record developing antimicrobial resistance in hospitals, fields and among public.
- (iv) Research to identify novel growth promoters, novel targets to kill microbes, novel combination of approved drugs and alternatives to antibiotics such as probiotics, immunomodulators, anti-virulence drugs, anti-toxins, vaccines and improved sanitary managements
- (v) Development of community level, rapid, point of care diagnostics/screening tools

(vi) Understanding the molecular mechanisms involved in the development of antimicrobial resistance and development of strategies to overcome it.

(vii) Strict regulation of antibiotic withdrawal period in animal produce and need to monitor food borne illnesses

(viii) Development of alternatives to the use of antibiotics in the poultry/aquaculture/veterinary practices, as growth promoters

(ix) As large pharma is not interested in the development of new antibiotics, there is need for enhanced public funding and incentives for small and medium companies.

(x) Establishment of a **National network for antimicrobial resistance**

A national coordinating centre for molecular epidemiology, genomics and control of drug resistant pathogens with multiple regional monitoring and surveillance centres.

Emphasis on hospital and community acquired infections on the following:

- Enterobacteriaceae causing sepsis (mainly *E. coli*, *Proteus*, *Klebsiella* & *Enterobacter*)
- Gram negative non-fermenters (mainly *Acinetobacter* & *Pseudomonas*)-
- Fungi (mainly *Candida*)
- Methicillin resistant *Staphylococcus aureus*
- Vancomycin resistant enterococci
- *Streptococcus pneumoniae*
- Diarrhoea causing organisms (mainly *Vibrio* and *Shigella*)
- Enteric fever organisms (mainly *Salmonella*)

In conclusion the following are the strong recommendations:

1. Stronger policies on public awareness on the problem and strict implementation of policies for effective control and prevention of abuse of antibiotics
2. National network on epidemiology and surveillance of antimicrobial drug resistance
3. Public funding for targeting key R&D challenges in the development of novel therapeutic interventions to counteract AMR