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One health approaches to zoonotic diseases especially on high pathogenic avian influenza (HPAI), MERS and antimicrobial resistant pathogens

One health approaches, 'One health, one medicine', have been globally recognized to control zoonotic diseases. World Organization of Animal Health (OIE) has reported 60% of human pathogens are animal origin and more than 75% of emerging animal diseases are zoonoses. This means collaboration and cooperation between animal and human medicine together can only solve the problem. Recent huge outbreaks of HPAI and MERS in Korea have more been paid attention to implement one health approaches in practice. Through the painful experience of these zoonotic diseases we may establish the effective preventive method and early diagnosis as critical control strategies. Antimicrobials have played an important role in maintaining the animal health and in producing the high quality food. The concern that the use of antimicrobials in food animal production can increase the risk of selection of antimicrobial resistant bacteria that may cause failure of treatment has led to international expert meeting and reports. Although the prevalence of zoonotic antimicrobial resistant bacteria in food animals or companion animals is maintained still low, however, resistant genotypes similar to or identical with those of the human isolates were also found in non-human sources. Therefore, the risk management interventions should be urgently implemented. Furthermore, a "One health" approach to antimicrobial use and resistance is essential to minimize the antimicrobial resistance in humans and animals, because these are the responsibility of all three health communities: human health, animal health, and environmental health-communities. Recent reports have documented MRSA (Methicillin Resistant Staphylococcus aureus) detection in animals, foods and animal workers. Now it is considered as one of the most important zoonotic pathogens. Extended-spectrum β -lactamase (ESBL)-mediated resistance is of considerable importance in both human and veterinary medicine. In a study done in Korea, CTX-M producing E. coli and Salmonella were detected in animals, raw meat, farm environment, and farm workers. These results suggest that a combination of clonal and horizontal transmission is spreading of CTX-M resistant NTS between animal and human sources. Prevention and control of infections in food animals is essential in fighting antimicrobial resistance. It is essential that all parties work together to ensure safe use and to minimize the development of resistance.

Biography

Yong Ho Park has achieved his DVM and MS at College of Veterinary Medicine, Seoul National University, Korea. In 1991, he has obtained his PhD in Veterinary Microbiology at Washington State University, US. He has worked at National Veterinary Research Institute for 18 years starting from 1978 to 1995 until he moved to College of Veterinary Medicine, Seoul National University where he worked as a Professor. He has been appointed as an Adjunct Professor at the College of Veterinary Medicine, Washington State University since 1996 and has also been appointed as an affiliate Professor at Mississippi State University since 2013.

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