

World Congress on Infectious Diseases

August 10-12, 2015 London, UK



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From Ebola what's next - Hierarchy of microbicide resistance as a predictor of activity against emerging viruses

A combination of factors has caused an upsurge in the emergence of infectious agents in the past few decades, with viruses representing nearly 67% of those recognized between 1980-2014; prominent among the newly discovered ones are the causes of AIDS, hepatitis C, pandemic influenza, Ebolavirus and severe respiratory infections (e.g., SARS, Nipah, Hendra, MERS). Predictive modelling suggests that by 2020 another 10-40 new viruses will be discovered.

Although vaccination, antiviral chemotherapy, control of insect vectors, screening of blood/tissues, and the use of barriers such as condoms can effectively interrupt virus dissemination, the use of microbicidal chemicals for environmental decontamination and hand hygiene in both domestic and institutional settings remains an essential preventive strategy to safe-guard public health. Consequently, national and international agencies including WHO emphasize the use of appropriate environmental surface disinfectants and antiseptics, in conjunction with proper hand hygiene, as essential and generic components of preventive strategies against viruses as well as other types of infectious agents.

While most regulatory agencies normally register environmental surface disinfectants for sale based on testing against surrogate microbial agents, the U.S. Environmental Protection Agency (EPA) requires test data against each virus to be listed on product labels. Such a system makes selection of disinfectants difficult against emerging viruses. To address this, an interim guidance system against emerging viruses has been developed based on the known hierarchy of resistance/susceptibility of existing human pathogenic viruses to environmental surface disinfectants. This presentation will summarize this predictive approach and its applications to Ebola and other newly discovered viruses.

Biography

M. Khalid Ijaz received DVM, MSc (Honours) from University of Agriculture, Faisalabad, Pakistan and completed Ph.D. in Microbiology and Immunology in 1985 at University of Ottawa, Canada. He did his post-doctoral work at the Vaccines and Infectious Disease Organization (VIDO), Canada. Currently, he's Research Fellow at RB, Montvale, N.J. and Adjunct Associate Professor at The City University of New York (CUNY). His research focuses on human pathogenic microbial agents' spread via the environment and mitigational role of hygiene agents. He is an active member of various scientific organizations including American for Microbiology, American Society for Virology, ASTM-International, Association of Professional for Infection Control and Epidemiology and International Society for Infectious Diseases.

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