spread of pathogens to other patients or surfaces. Therefore cleaning and disinfection are paramount for keeping the environment and fomites safe for animals and humans in a hospital and field environments. Studies in humans and veterinary settings have shown that contaminated environment and fomites (stethoscopes, thermometers, etc.) are routinely found, thus posing a risk for disease transmission. Furthermore routine cleaning and disinfection has been shown to be effective in decreasing the bioburden on environmental surfaces, thus decreasing the chances of disease transmission. Practices such as improved education and training, checklists to assure that all surfaces and equipment/devices are treated and assessment of environmental cleanliness with feedback to the environmental service worker have been shown in human medicine to improve frequency of adequate cleaning by 71 to 77%. Practices like these, with the added environmental surveillance cultures for Salmonella spp. were instituted by the author with success in the past in both the field and hospital environments. Even though studies have shown that environmental cleaning and disinfection reduces pathogen loads, these measures should be complemented by other interventions that strengthen and complement it. For example monitoring of Salmonella shedders will enhanced infection control practices by performing a more thorough cleaning and disinfection of high risk areas. Moreover biosecurity education of personnel involved with animal care would increase engagement and compliance, thus strengthening infectious control measures.

010 Antimicrobial resistance and the new stewardship paradigm: Where do horse vets and the horse fit in?

J.F. Prescott
Department of Pathobiology, University of Guelph, Guelph, Ontario N1G 2W1, Canada

Equine medicine is not exempt from the global antimicrobial resistance crisis. Resistance threatens everyone. Since bacteria are changing, everyone who uses antibiotics also has to change. This talk will describe the resistance tsunami, and discusses resistance and resistance issues within the context of equine veterinary practice. The talk will discuss whether there is a resistance problem in horses, and where resistance has become or is becoming a problem. The emergence of MRSA and the widespread resistance of Rhodococcus equi on some horse farms will be used to illustrate important aspects of antimicrobial stewardship. We will promote the emerging ethic of Good Stewardship Practice (GSP), defined as an active, dynamic process of continuous improvement. GSP is an ethic with many steps of different sizes by everyone involved with antibiotic use. GSP takes a “5R” approach of responsibility, reduction, refinement, replacement and review. The talk will discuss the development of practice guidelines based on the British Equine Veterinary Association’s “Protect ME” approach, infection control, the use of clinical microbiology laboratories, understanding of the principles of pharmacokinetics and pharmacodynamics, regulations, and education, as major aspects of GSP and of the efforts being made to improve antibiotic use practices in equine medicine.

Posters

053 Comparative efficacies of disinfectants against bacteria causing healthcare-associated infections

A. Ochi, H. Niwa, Y. Kinoshita, T. Ueno, Y. Katayama
Equine Research Institute, Japan Racing Association, Japan

Healthcare-associated infection (HAI) is a considerable problem in veterinary and human medicine. HAI is caused by a broad range of bacterial, viral, fungal, and parasitic pathogens. In horses, the common bacterial causes are methicillin-resistant Staphylococcus aureus (MRSA), Pseudomonas aeruginosa, Clostridium difficile, and Streptococcus equi subsp. zooepidemicus. These infectious organisms can survive on environmental surfaces for long periods with the possibility of being transmitted to susceptible hosts. Therefore, the environment may serve as an important reservoir, and a wide variety of disinfectants have been used for HAI prevention and control. However, there is currently insufficient evidence to select a disinfectant and use it efficiently in horse facilities. We used suspension tests to investigate the comparative efficacies of disinfectants available in Japan against MRSA (Stap-163), P. aeruginosa (NE-209), S. zooepidemicus (Strep-232), and C. difficile spores (anaero-125). All the bacterial strains used were isolated from horses with HAI at our institute. The chemical disinfectants tested were: quaternary ammoniums (QAs; Astop and Pacoma L), biguanide (Hibitane), aldehydes (Sterihyde and Hermin 25), hypochlorites (Purelox and Bi-jia), oxidizing agents (Vircon S and Hyprox accele), an iodine compound (Cleanup A), and isopropanol. The bactericidal effect was evaluated after an exposure time of 0.5 to 30 min and at a range of chemical concentrations. Moreover, the influences of temperature (20 and 4°C) and organic load (10% fetal bovine serum; FBS) on bactericidal effectiveness were investigated. Among the tested bacteria, C. difficile spores were highly resistant to the disinfectants. In the absence of FBS and at 20°C, aldehydes, hypochlorites, and oxidizing agents were highly effective, and iodine also inactivated spores with a contact time of 30 min. However, QAs, biguanide, and isopropanol showed no sporicidal activity under any of the conditions tested. In the presence of 10% FBS or at 4°C, both, Hyprox accele remained effective, whereas the sporicidal effects of the other agents were reduced. There was no significant difference between the susceptibilities of MRSA, P. aeruginosa, and S. zooepidemicus to the disinfectants. These bacteria were inactivated by all the disinfectants within 5 min in the absence of FBS. The bactericidal effects varied considerably among different types of active compounds at 4°C or in the presence of FBS, or both. QAs and biguanide were less effective in the presence of FBS or at 4°C, or both. The efficacy of aldehydes was decreased at 4°C rather than by the presence of FBS. Hypochlorites, oxidizing agents, and the iodine compound remained effective at 4°C, but their activities were markedly decreased in the presence of FBS. In contrast, the bactericidal efficacy of isopropanol was almost unaffected. In conclusion, all the disinfectants tested were effective against clinical isolates of MRSA, P. aeruginosa, and S. zooepidemicus and aldehydes, hypochlorites, and oxidizing agents efficiently inactivated C. difficile spores. However, the efficacy of disinfectants was reduced at 4°C or in the presence of organic matter, or both.

055 Health knowledge and infection control by event horse owners: a qualitative analysis

H. Ellis, N.R. Kendall, J.H. Kydd*
School of Veterinary Medicine and Science, University of Nottingham, Sutton Bonnington, Loughborough, Leicestershire LE12 5RD, United Kingdom

Infection control and quarantine measures are essential to minimise the impact of equine infectious diseases, but their uptake by equestrians involved with sport horses in the United Kingdom is undocumentated. Using a questionnaire, this study aimed to: 1) determine the knowledge and practices of eventing equestrians about their horses’ health and the clinical signs of endemic and