The recent pandemic of CoVid19 has increased our need to...

Comparative recovery rates across surfaces, organism types and...
Methods. We compared the inactivation of both SARS-CoV-2 and coronavirus 229E suspended in 5% fetal calf sera and dried on both metal and plastic surfaces. In addition, studies were conducted with a silanated quaternary ammonium compound that left a residual on the surface. Studies were also conducted on the finger transfer of coronavirus from various surfaces. The virus was allowed to dry on the surface for 30 minutes, then a transfer was conducted by placing the finger pad directly on the contaminated surface. The finger was tested for the virus. The study was then repeated with virus-contaminated porcelain surfaces that were sprayed with a quaternary product or placed on a surface with a quaternary ammonium compound that left a residual.

Results. Several readily available quaternary ammonium formulations were evaluated and proved to be effective with greater than a 99.9% reduction in titer after drying on both metal and plastic surfaces. In addition, a silanated quaternary ammonium compound that left a residual on the surface was capable of inactivating SARS-CoV-2 for at least seven days after application. Studies on the finger transfer of coronavirus from various surfaces showed that the amount of virus transfer to the finger varied from 0.46 to 49.0% depending upon the surface. Little or no virus transfer occurred from treated surfaces compared to the untreated controls. In addition, coronavirus 229E appears to be a good model for use in disinfection assessments for SARS-CoV-2.

Conclusion. Our results demonstrate that various quaternary ammonium disinfectant formulations are effective against human coronavirus. Finger transfer tests showed that transmission of coronavirus from surfaces can be prevented, reducing the risk of fomite transmission. Coronavirus 229E appears to be a good model for use in disinfection assessments for SARS-CoV-2.

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785. Distribution and Associated Mortality in Carbapenem-Resistant Gram-Negative Bacilli in Japan: A Multicenter Study From Multi-Drug Resistant Organisms Clinical Research Network (MDRnet)
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Background. Carbapenem-resistant gram-negative bacilli (CRGNB) are increasingly reported around the world as a cause of serious infections. However, the epidemiology and clinical course of patients with CRGNB in Japan is not well understood.

Methods. We prospectively collected CR cases from 4/2019 to 9/2020 in Multi-Drug Resistant organisms clinical research network (MDRnet) consisting of 5 tertiary care facilities in Japan. We looked at all CRGNB, and all unique patients with CR Enterobacterales, CR nonfermenting gram-negative bacilli (NFGNB) and CR Aeromonas sp. isolation were included. Carbapenem resistance was tested by agar dilution method and defined based on the CLSI criteria for each species. Infections were determined by NHSN protocols.

Results. In total, 156 patients (30 Enterobacteriales, 119 NFGNB, 7 Aeromonas spp.) were included (11 Enterobacter spp., 11 Klebsiella spp., 86 Pseudomonas aeruginosa, 29 Stenotrophomonas maltophilia, 7 Aeromonas spp.). Acinetobacter sp. was not detected. Isolation sites were sputum (n = 12) and urine (n = 7) in Enterobacteriales, sputum (n = 62) and blood (n = 18) in NFGNB, and blood (n = 6) in Aeromonas sp. The median age and male ratio of the patients were 68 years [IQR: 53-74] and 19 (63.3%) in Enterobacteriales, 72 years [IQR: 60-79] and 70 (58.8%) in NFGNB and 78 years [IQR: 54-83] and 2 (28.6%) in Aeromonas spp. Ten (33.3%) patients with CR Enterobacteriales, CR nonfermenting gram-negative bacilli (NFGNB) and CR Aeromonas sp. isolation were included. Carbapenem resistance was tested by agar dilution method and defined based on the CLSI criteria for each species. Infections were determined by NHSN protocols.

Conclusion. Mortality rates were high in infected cases of CR Enterobacterales, CR NFGNB and CR Aeromonas spp. Carbapenem-resistant Acinetobacter sp. was not detected, which differed from the CR epidemiology in Europe, the United States, and other Asian countries.

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