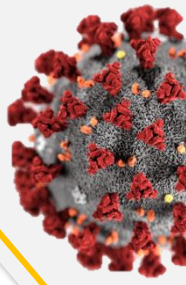
Magicopper

For Prevention of COVID-19

Based on available evidence up to 29 June 2020



INTRODUCTION

Magicopper is a soft, transparent copper-alloy film comes in the form of adhesive and non-adhesive film. It is claimed to reduce microbial burden by attaching it to high-touch surfaces and have the potential to reduce transmission of SARS-COV-2 infection as incorporation with other preventive measures such as social distancing, practicing proper hand hygiene and routine cleaning of frequently touched surfaces with disinfectants.

High-touch surfaces are surfaces that are handled frequently throughout the day by numerous people. These surfaces include doorknobs, light switches, phones, sink faucets, and toys. High-touch surfaces can become contaminated by direct contact with bodily fluids or through indirect contact with other contaminated objects, such as inadequately cleaned rags and sponges or improperly washed hands.[1] In hospital setting, high touch surfaces include bed rails, bed frames, moveable lamps, tray table, bedside table, handles, intravenous poles, and also blood-pressure cuff.[2]

COVID-19 is the infectious disease caused by the most recently discovered SARS-COV-2. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019. COVID-19 is now a pandemic affecting many countries globally.[3] As to date, confirmed cases of COVID-19 accumulated to 9 million people worldwide, with confirmed death cases of 495 760 people.[4] The disease is spread by human-to-human transmission via droplets or direct contact.[5] Surface contamination has recently been found to be more significant than originally thought in the spread of this disease. Spread of this respiratory disease often result in continuous recontamination of surfaces which are then touched, and infectious virus particles may be transferred to facial mucosa.[6]

SARS-CoV-2 was more stable on plastic and stainless steel with viable virus detected up to 72 hours after application to these surfaces. Comparatively, there was no viable SARS-CoV-2 was

measured after 4 hours on copper surface. On cardboard, there was no viable SARS-CoV-2 measured after 24 hours.[7] Human coronaviruses are responsible for severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).[6]

Currently, the mean to control the infection or prevent the spread of SARS-CoV-2 is by primary intervention.

EVIDENCE ON EFFECTIVENESS AND SAFETY

There was no article retrieved from the scientific databases such as Medline, EBM Reviews, EMBASE via OVID, PubMed and from the general search engines [Google Scholar and US Food and Drug Administration (USFDA)] on the use of copper-based foil adhesive for prevention of spread of SARS-CoV-2.

A published laboratory report showed that uncoated copper and copper alloy surfaces have antimicrobial activity against one strain of human coronavirus which is HUCoV-229E. In this study, there was rapid inactivation of human coronavirus occurs on brass and copper nickel surfaces at room temperature (21°C). Brasses containing at least 70% copper were very effective at inactivating HuCoV-229E, and the rate of inactivation was directly proportional to the percentage of copper.[6]

Another unpublished laboratory study conducted by the company to look for inhibitory effect of copper against bovine coronavirus was done in Seoul National University by introducing the virus to copper surfaces (n=3) versus control group of non-treated polybag (n=3). The finding showed that it has inhibitory efficiency of 99.99% of self-disinfection against bovine coronavirus when the exposure time is more than 4 hours. The inhibitory efficiency against bovine coronavirus at 30 minutes exposure was 99.94%.[8]

There were several other clinical studies retrieved on usage of copper as antimicrobial surfaces to reduce healthcare-acquired infections and/or against bacterial pathogens such as Clostridium difficile (C. difficile), Methicillin-resistant Staphylococcus aureus (MRSA), Vancomycin resistant enterococcus (VRE), Acinetobacter spp., Enterobacteriaceae (including Escherichia coli, Klebsiella sp. Enterobacter sp. and others) and extended spectrum beta lactamase (ESBL) producing organisms.[9-13]

CONCLUSION

There was limited evidence on effectiveness of copper against SARS-CoV-2, therefore further studies are required.

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