

Excess use of Hand Sanitizers may lead to Antibiotic Resistance?

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Dear Editor,

As we all know that the world is fighting against the novel coronavirus (COVID-19) which outspread all over the world. The main preventions suggested by the microbiologists, physicians, and other stake holders of health-care systems are social distancing, use of hand sanitizers, and wearing of the mask in public places.

As the misuse of antimicrobials leads to antimicrobial resistance, use of excessive sanitizer and other cleaning agents could also led to antimicrobial resistance.^[1] Sudden increase in the usage of sanitizers and other cleaning agents during this COVID-19 era increases the number of antimicrobial resistant bacteria which led to other serious health conditions after this pandemic.

Antimicrobials which include antibiotics, antivirals, antifungals, and antiprotozoal are very important and basic need of our health-care systems. These agents are used to fight against different types of infections in human beings and their importance increases if the immune system of an individual is weak or compromised. Some of the bacteria mutate or change their structure or function when exposed to an antimicrobial and they withstand those medications which are designed to treat them. Infections which were easily treatable in the past are becoming life threatening nowadays due to antimicrobial resistance.^[2]

Some of the microbials also became resistant after excessive or inappropriate usage of different chemicals and cleaning agents including sanitizers.^[3] Usage of hand sanitizers by diluting them and used inappropriately could lead some of the microbials to became resistant to them which ultimately increase the antimicrobial resistance all over the world.^[3]

Many so-called scientists emerged on the internet and social media making homemade sanitizers and selling them without knowing the efficacy of these sanitizers and claim openly that these sanitizers kill the virus up to 99%. Majority of the products have no evidence that they even work on bacteria and virus. There is a possibility of other adverse effects of using these products. The main ingredient of these homemade products is alcohol which has antibacterial properties and anything that have antibacterial properties may lead to antimicrobial resistance.

We recommend not to buy cheap and unauthorized hand sanitizers over the internet. Always buy authentic products and treat the usage of hand sanitizers as a prescription drug. Carefully read the label because if inappropriate used, make them ineffective. Please do not dilute the original strength of the hand sanitizer or combine with other cleaning agents as they decrease the efficacy of the original product.

REFERENCES

1. Pidot SJ, Gao W, Buultjens AH, Monk IR, Guerillot R, Carter GP, *et al.* Increasing tolerance of hospital *Enterococcus faecium* to handwash alcohols. *Sci Transl Med* 2018;10:eaar6115.
2. Srinivasan A. Engaging hospitalists in antimicrobial stewardship: The CDC perspective. *J Hosp Med* 2011;6:S31-3.
3. Akimitsu N, Hamamoto H, Inoue R, Shoji M, Akamine A, Takemori K, *et al.* Increase in resistance of *Methicillin-resistant Staphylococcus aureus* to β -lactams caused by mutations conferring resistance to benzalkonium chloride, a disinfectant widely used in hospitals. *Antimicrob Agents Chemother* 1999;43:3042-3.

How to cite this article: Akhtar A, Akhtar M, Fatima S, Khan AH. Excess use of Hand Sanitizers may lead to Antibiotic Resistance. *J Community Prev Med* 2020;3(2):1.

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