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Hand Sanitizers Playing a Vital Role in Fighting the Viruses in the Covid-19 Pandemic Circumstances Across the Globe

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ABSTRACT: Hand sanitizers playing a vital role during the COVID -19 out break from the Wuhan City of People's Republic (PR) of China in December 2019, which has been declared as a global pandemic by the World Health Organisation (WHO). Keeping the present scenario of the Coronaviruses pandemic, very little known information is known for its transmission across the globe. Health practitioners across the world have recommended for the frequent hand washing with the alcohol-based hand sanitizers is one of the best alternatives for keeping the viruses at the bay. Hence the increased use of the alcohol-based sanitizers has resulted in a tremendous growth across the globe and also more care to be taken while handling the hand sanitizer as it is flammable in nature. The awareness of the personal hand hygiene has been increased in the COVID-19 out break in several geographies have propelled the demand for hand cleaners.in the healthcare, hospitality, residential, education, corporates, and government & defence agencies are major end-users witnessing high demand.

KEYWORDS: COVID – 19, WHO, Health practitioners, Alcohol based sanitizers

I. INTRODUCTION

Using of the hand sanitizers throughout the world, speciality alcohol based sanitizers playing a vital role in the COVID – 19 circumstances. It has been well known fact that the sanitizers are known in various forms, which is used for killing and decreasing the bacteria and viruses in our hands (1 & 2). It is generally recommended to use the alcohol-based sanitizer after hand washing with soap and water (3, 4 &5). According to the Centers for Disease Control and Prevention (CDC), alcohol-based hand sanitizers can help reduce the amount of germs and bacteria on your hands, but they do not get rid of all types of bacteria. They may also be less effective if you have dirt, grease or other substances on your hands, so should not be used to replace hand washing. Always necessary to clean the hands and use the hand sanitizers. Hand sanitizers is an effective liquid, which can be used to kill the emerging infections and viruses such as Coronavirus, which has emerged from the Wuhan City of People's Republic (PR) of China in December 2019. The PR of China, under its obligations for International Health Regulations (2005), reported to the World Health Organization (WHO) between December 31, 2019 and January 3, 2020, 44 cases with pneumonia of unknown aetiology had taken place, the disease Spread rapidly within and outside the Hubei Province, which has resulted in the spreading Coronavirus pandemic across large number of countries such as Thailand, Japan and the Republic of Korea and now across many countries in the globe, which is considered to be a serious issue. Proper working practices along with good hand hygiene practices to be followed in the working environment (6). It is recommended to use the alcohol based hand sanitizes tor killing the viruses (COVID-19) in most cases. One of the greatest disadvantages of using sanitizers is that some of the germs such as norovirus and clostridium cannot be eliminated and as well as it cannot be used for removing the chemicals from the hands (3). As the emerging of the COVID-19 people are using the disinfectants as well the sanitizers in a regular basis but they are not practising standards for the usage of sanitizers, it is a lacklustre approach by a common man, people use the soap by washing their hands and apply the sanitizers immediately, which may not give the desired results. Hand washed with the disinfectant soap should be dried before we use the hand sanitizer, as the minimum recommended time of at least 15 seconds for the alcohol based sanitizers, so that it can dried off in our palm and its back. Such type of practises has not been followed means it may result in the ineffectiveness of use of the hand sanitizers, overall and above it is difficult to eliminate the emerging pandemic COVID-19, if proper hand hygiene practises are not followed along with the inhalation protection by using the N (95) mask.

II. PREPARATION OF THE ALCOHOL BASED SANITIZER

Preparation of hand sanitizers has been increased in the COVID-19 circumstances. In this regard World Health Organisation (WHO) has recommended the standards for producing the alcohol based sanitizers to avoid the

coronaviruses spreading from the hands. WHO health hygiene practices recommend the following procedure for the producing the alcohol based hand sanitizers. Alcohol based sanitizers are manufactured in various forms such as gel based, liquid based, foam based, hand wipes and sprays. Preparation of 100 litres alcohol based sanitizers as per WHO are given in the below figure. 1

Preparation procedure for the usage of the Hand sanitizers as recommended by WHO

Raw materials	Isopropyl Alcohol	Hydrogen peroxide	Glycerol	Sterile distilled or Boiled cold water
Recommend Concentration (%)	99.8	3	98	100

Preparation concentration for 100 L

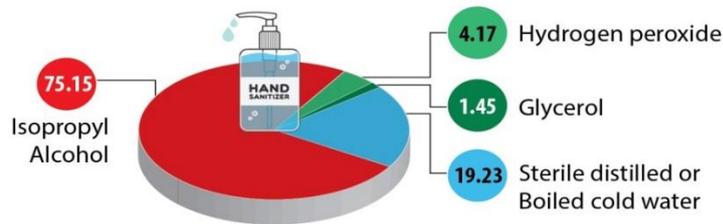


Figure.1

Alcohol is primarily used as an antiseptic in the early years of 1363 with evidence to support its use becoming available in the late 1800s. Alcohol-based hand sanitizer has been commonly used in Europe from 1980s (7). The alcohol based sanitizers are most recommended (3), which are considered as an effective needed medicine in the health care system as recommended by the WHO (8). Considering the above table.1, care must be taken while using the alcohol based hand sanitizers because sanitizers consist of 75.17 L alcohol (for 100 L preparation of hand sanitizers), where the amount of alcohol used in the preparation of the sanitizers is the highest. The alcohol is highly flammable in nature (8). It is recommended to keep it away from the fire and the hot conditions. Without the use of the alcohol hand sanitizers are not recommend (3). The alcohol based sanitizer’s works well against most variety of microorganisms but not the spores (2). The non-alcohol based sanitizers, which contains benzalkonium chloride or triclosan; but are less effective than alcohol-based sanitizers (9, 10 and 11). In the present scenario the demand for alcohol based sanitizers have become high and they are shortage of resources because of the Coronavirus pandemic (12). In this situations many or the manufacture’s around the globe who were involved in manufacturing of liqueurs and perfumes now they have started manufacturing the hand sanitizers (5). Alcohol based hand rubs provide a better skin tolerance as compared to antiseptic soap (13). Many peoples and organisations reported simple hand washing could save one million lives a year (14 & 15) and many public health campaigns worldwide have addressed “hand hygiene” with varying success. (16, 17 & 18). Considering the present scenario in the world in this global COVID-19 pandemic there is an increased growth across the globe for the alcohol hand sanitizer products could rise up to 2.1 billion dollars by 2027 according to the one of the estimate, which has been conducted by the market research firm Fior Markets, which was released recently. Above and all the alcohol-based sanitizers are flammable in nature and it is 63-degree c. Also it is very much important to put a flammable sticker on the alcohol based sanitizer bottle (Figure – 1a). The Centers for Disease Control and Prevention, US, in order to make sure that the sanitizer does not catch fire, one has to make sure that their hands are dry after using hand sanitizer. Only then they can continue with their work, and the chances of catching fire are zero.



Figure 1a - Flammable symbol

IIU.ALCOHOL-BASED SANITIZERS FOR THE PALM AND ITS BACK SIDE

Sufficient quantity of the hand sanitisers should be used to eradicate the viruses such as COVID -19. Few drops are inadequate to kill the viruses and the emerging pandemic in the world. American council of science and health has communicated that a team of European researches have conducted a study for the sufficiency of quantity of the alcohol based sanitizer to be used for killing the viruses; in this regard the volunteers have been encouraged to use 1, 2 and 3 ML of alcohol based sanitizer on the palm and its back. In order to track the sufficiency of the alcohol based sanitizer for killing the bacteria and viruses, they have used UV tracer, they have identified UV light stains on the palm and its hand. The team has considered 90 % of the hand coverage to be adequate, which is considered to be more than half of a teaspoon. They found (Figure.2) that the 1 and 2ml alcohol based sanitizer, which has coverage of less than 90 % of the palm and its back side of the palm but whereas 3ml has coverage of more than 90 % for the palm and almost it is 90 % to its back also. Taking the above study and the figure.2 it is recommended to take 3.5 ml of hand sanitizer to be rubbed in the palm and its back, which will be sufficient for the large and medium size hands for covering of 95 % of palm and its back. It should be dried for at least 15 seconds for the better efficiency of killing the bacteria and getting the efficiency viruses in the COVID – 19 pandemic circumstances.

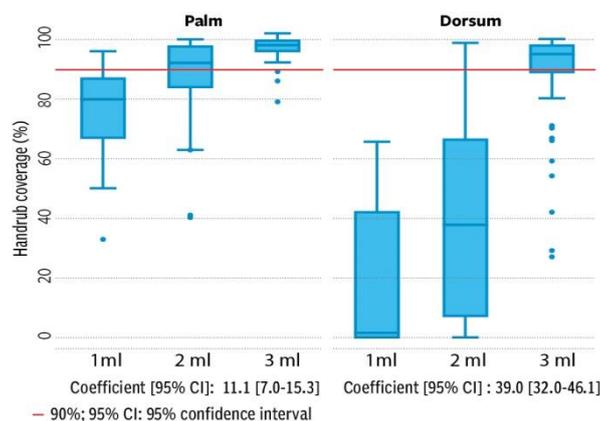


Figure – 2 – Source - By Alex Berezow, Jan 2017, American council on science and health

IV. CONCLUSION

Alcohol based sanitizers playing a vital role in protecting against the Coronavirus in the COVID-19 pandemic circumstances across the globe and also it has resulted in the increased demand over the manufactures of alcohol based hand sanitizers across various countries in this present scenario. It is recommended to use 3.5 ml of alcohol based sanitizer for the palm and its back and dry it for 15 seconds for the effective killing of the bacteria or viruses. Considering the present outbreak of the COVID – 19, it also gives hope to the possible development of newer

diagnostics, therapeutics and vaccines to combat COVID-19 although alcohol based hand sanitizers are recommended for the hand hygiene. A comprehensive approach is needed to break the chains of transmission, and more aggressive testing, early diagnosis and isolation along with adequate treatment seem to be the way forward in tackling this infection in the future.

Note - My condolences and prayers for the dear and near once who have lost their life in the COVID -19 pandemic

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