

Short Communication

Respiratory Infection Prevention – What’s Your Strongest Weapon?

Dr. Nilotpal Bhattacharjee

***Corresponding Author: Dr. Nilotpal Bhattacharjee**, DNB Resident Respiratory Medicine
National Institute of Tuberculosis and Respiratory Diseases New Delhi India.

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It’s been almost two centuries, and the world’s smartest being is still searching for the best weapon to ward off infections. If we look at the statistics, we see respiratory diseases has a lion’s share. And to fight it off, scientists, researchers, doctors have modulated new antibiotics, advocated new control measures and formulated new guidelines.

The human body is daily exposed to multiple pathogens from various sources. The most common portal of entry is the lungs and the skin. We inhale around 20000 liters of air daily while only 3 liters of water and 1.5 kg of food, hence we do not have much control over what exactly we want to inhale. From recent and remote past, we have seen that it’s the respiratory pathogens that have created havoc in the environment and have been a major cause of epidemics and pandemics across the globe. And we have either come up with vaccines or protective measures to tackle them.

The commonest mode of spread for any respiratory infection is by droplets. A cough generates about 3000 droplets while a sneeze produces approximately 40000 droplets. And for an adult human being, an exposure to 500 droplets is enough to infect.

COVID 19 is the recent most pandemic that has been causing menace, but we have already faced similar things in the name of SARS, MERS, etc. Still, our age-old Pulmonary Tuberculosis has always been the ruling burden in this section. Though there have been many advancements in medical science and ways to tackle them, the primary prevention method to control them has been very concise.

The first prevention and the most vital in this regard will always be a face mask. The recent pandemic has created the most awareness about facemasks like no other. Previously facemasks were worn only to prevent polluted air or by workers in factories. But the pandemic has created a mass awareness about the role of masks in this regard. Facemasks are generally worn over the mouth and nose.

There are 9 types of masks being worn by various people around the world, but the surgical masks and the N95 respirators the most effective in preventing infections. Reporting from a country like India with such high population density and yet COVID infection has reached just 71 lakhs among 135 crores, considering some cases as underreported yet, this has to be said, early awareness about using facemasks has played a role.

The second method of control comes from hand washing. We were all taught in our internship days the effective way of 1-minute hand washing by the seniors, but we hardly followed and the method passed onto successive generations. Now coming to this era of pathogens being present on surfaces for long, effective handwashing has been our savior. Soap water or alcoholic sanitizers, which is more effective, has been an issue of debate. Based on a short trial by my microbiologist colleague, he proved that after hand washing for 1 minute with soap and then rubbing your hand with a sanitizer, a swab taken from the palm has found to be growing no pathogens in culture media while it's not the same result for either of them.

The third method and quite vital in this scenario is cough etiquette. We were all taught in elementary how to bring out a handkerchief while coughing or sneezing, but as we grew up, we forgot the basics of life. Came back those values and morals, and it has been proved with no doubt that preventing the spread of aerosols in the air has created significantly less viral load to the environment.

Fourth comes to body immunity. We all are born with a god gifted immunity level which can ward off any pathogen to a level. But, for people with less immunity, often the role of antioxidants has been considered. There have been multiple publications where the role of Vitamin D has been proved in control of asthma or the role of antioxidants has been proved in control of recurrent infections.

Vitamin A, D, E, C have always been considered vital in this regard from the Before Christ era.

Fifth comes to the vaccinations and herd immunity. For a disease as infectious as COVID 19, the role of herd immunity has been just discarded and rightly so. In very few viral diseases, we develop herd immunity. Either the virus loses its potency over time or we come up with a vaccine at the right time. The Great Spanish flu of 1920 is an example of this. Vaccines are immune shots being given to us to fight just like a boxer is given a mouthguard to significantly decrease the lethality of the attack.

Now after comparing all these, from a respiratory practitioner's point of view, Facemask is the one and most vital weapon that we have in combating this Covid19 and maybe more shortly. With appropriate usage of masks, we are not only stopping us from inhaling infected air but also preventing ourselves from depositing infected droplets in the environment. The biggest gain that we had from wearing masks is not only preventing the spread of COVID like wildfire but also halting the spread of other respiratory diseases like Pulmonary Tuberculosis. Recent data has shown that there is a significant decrease in the percentage of new cases of Pulmonary Tuberculosis in India as reported in the last 3 months.

So, I would like to end with just one thing, WEAR A MASK, SAVE LIFE.

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