

Hand Rub Manufacturing Initiative

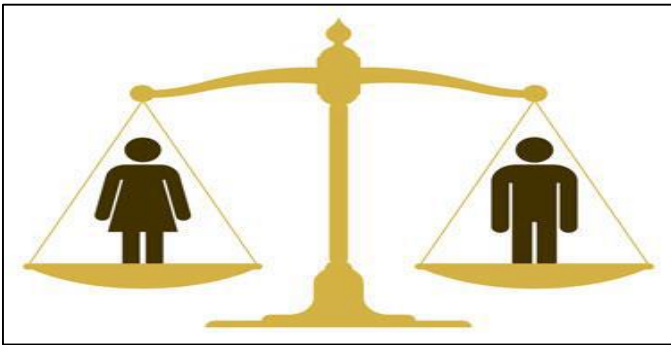


Department of Pharmacy of Brac University and Brac University Pharma Society (BUPS) with the commitment to help the society in this crisis of COVID-19 pandemic, started making hand rubs (hand sanitizers) from mid-March 2020. When soap and water are not available for washing hands, the use of hand rubs is the next most effective way to prevent infection by the virus. Starting with a pilot batch of 3 liters we prepared an estimated total of 150 liters of hand rub in three batches. Later we joined Brac NGO to continue this initiative and additional 500 liters of hand rub was made. All hand rub bottles have been given free of cost to public authorities, hospitals, and underprivileged people around Dhaka city and Chittagong/Chattogram. Distribution of the hand rub has been prioritized to the most impacted and high- risk communities, such as the underprivileged people. We are grateful to those who have been associated with this project. We hope that this initiative is continued and helps to ensure that the most vulnerable have access to this vital prevention method.



By: Department of Pharmacy and BUPS

Learning More about Why Some Diseases Have a Sex Bias



Some diseases occur with a higher frequency in one sex or the other, showing that there could also be subtle differences in physiology or biochemistry that we don't know about. For example, autoimmune diseases tend to affect women more often, while schizophrenia affects more men and typically does so more severely than women. New research reported in Nature has suggested that a protein that functions in the immune system, called complement component 4 (C4). This component, which is encoded by the C4 gene, is more abundant in men, where it protects them from lupus but increases their risk of schizophrenia. The protein helps tag cellular trash so the immune system will remove it. In individuals with the highest numbers of C4 genes, the risk of systemic lupus erythematosus and an

autoimmune disease called Sjögren's syndrome was reduced 7 and 16-fold, respectively, while the risk of schizophrenia was 1.6 times higher. Men tend to produce more of this protein than women, amplifying the impact. "Sex acts as a lens that magnifies the effects of genetic variation," explained the first author of the study, Nolan Kamitaki, a research associate in genetics in the lab of Steven McCarroll at Harvard Medical School and the Broad. Though this gene makes a significant contribution to the risk of these diseases, many other factors are also involved.

The complement system contributes to the sex bias, but it's only one of probably many genetic and environmental contributors. While this study presents a potential drug target, the protein plays a critical role in the complement system, part of the immune response, so it has to be altered cautiously, and should take the sex of the patient receiving treatment into account. For example, researchers will need to make sure that drugs that tone down the complement system do not unintentionally increase risk for autoimmune disease.

Written by: Syeda Fahria Hoque Mimmi (TA)

Substantial Antiviral Response Seen in Adults Recovered from COVID-19



Scientists from the La Jolla Institute for Immunology report that the human immune system is indeed capable of launching a full-fledged response when exposed to coronavirus. The report comes from a study of 20 adults who successfully recovered from COVID-19 without major problems. The new study builds off of a previous bioinformatics study of how to predict which viral

fragments could activate human T cells and initiate an immune response. In the most recent study, researchers analysed samples from 20 adults who had recovered from COVID-19 without major problems, considering them to have a "normal" immune response. In this analysis, researchers aimed to see if T cells isolated from these adults recognized the viral fragments identified in the bioinformatics study.

They considered two main types of fragments, those from the coronavirus's namesake, the "spike protein," and those not from the spike protein. Promisingly, they observed a strong T cell response to all types of viral fragments, spike protein and others. Researchers also saw a multi-faceted T cell response, both from CD4 "helper" T cells, which activate B cells and contribute to antibody production, and from CD8 "killer" T cells, which target and destroy cells the virus has already infected, preventing further infection. Additionally, researchers analysed T cells from older blood samples collected years before the current coronavirus pandemic. It was observed

that most of the blood samples were able to evoke immune responses which also showed signs of T cell reactivity to the SARSCoV-19. This study suggests that the reinfection of recovered patients may not be as likely as previously thought. However, a larger study may be required to further clarify this.

While the scientific community is still cautious and considering that in some cases, an excessive immune response may be harmful, the present study offers some promising conclusions.

Written by: Sabiha Akhter (TA)

Biohaven's Nurtec ODT (Rimegepant) Receives FDA Approval for Treatment of Migraine



The FDA has approved the use of 75-mg Rimegepant, marketed as Nurtec ODT, for the acute treatment of migraine in adult patients. The approval was granted to Biohaven Pharmaceuticals and this marks the company's first agency approval of a product. Nurtec ODT, with its novel quick-dissolve oral tablet formulation, works by blocking calcitonin gene-related peptide (CGRP) receptor, treating a root cause of migraine. In clinical trials, rimegepant achieved statistical significance on the co-primary endpoints of pain freedom and freedom from the most bothersome symptom (MBS) at 2 hours post-

dose compared to placebo. Additionally, the treatment demonstrated statistical superiority at 1 hour for pain relief and return to normal function. In its clinical development, more than 3100 patients were treated and it was seen that rimegepant was generally well tolerated and the most common side effect was nausea. The benefits of pain freedom, pain relief, and return to normal function and freedom from MBS were sustained up to 48 hours for many patients. Importantly, these benefits were seen with only a single dose of Nurtec ODT. Eighty-six percent of patients treated with Nurtec ODT did not require rescue medication (e.g. NSAIDS, acetaminophen) within 24 hours post dose. The long-term safety study assessed the safety and tolerability of rimegepant with multiple doses used over up to one year. Although the data presented an exciting first step, the mechanism underlying the benefits of concomitant use of a small molecule CGRP receptor antagonist is unknown and requires further study.

Written by: Rakhi Chowdhury (TA)