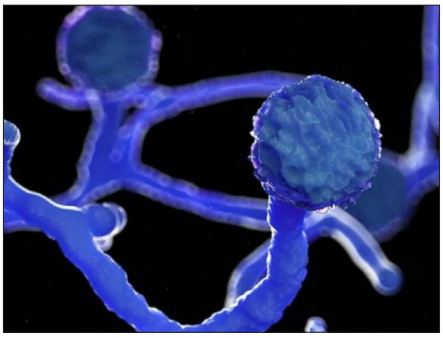
MSN Labs Launch Indigenous Drug Posaconazole

MSN Labs announced the launch of an anti-fungal drug Posaconazole meant to treat black fungus (mucormycosis) patients in India. This comes as several states in the country have declared black fungus as an epidemic.

In a company press release, MSN said the product has been launched under the brand name PosaOne as 100 mg Delayed-Release tablets and 300 mg injections, respectively. The drug has also been approved by the Drug Controller General of India (DGCI), the press release said.

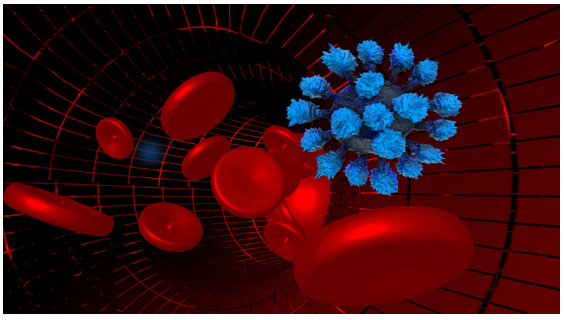


Posaconazole is a triazole anti-fungal agent indicated for treating mucormycosis patients.

MSN has developed the active pharmaceutical ingredient and the formulation of PosaOne in its in-house R&D and manufacturing units.

Covid Clotting Complication Now Adds Gangrene Risk

Experts have noted that gangrene is another burden that Covid-19 is piling onto the load of complications being heaped on patients.



So far, several families have been devastated by the deaths of their relatives, caused by heart attack not long after they were discharged from Covid hospitals. Scores of patients have been paralyzed by brain stroke due to prolonged hyper-coagulation triggered by the coronavirus.

Experts now report that a growing number of people are developing blood clots in the arteries of the hands and feet, which are leading to gangrene. In many instances, the clots were not tackled in time and the patients ended up losing their limbs.

"In a small 10-bed hospital setup, I have seen 40-50 cases of arterial thrombosis in the extremities and some 10 amputations in the past one-and-a-half months," said an Ahmedabad-based vascular surgeon Dr Manish Raval. "This rise could be due to an unprecedented surge in Covid this time."

"This rise could be due to an unprecedented surge in Covid this time." Nearly 80% of the cases come from rural areas, Ahmedabad-based vascular surgeon Dr Manish Raval said. "That could be because medical care in rural parts is compromised as compared to the cities," Dr Raval said.

Black Fungus Medicine Crisis Boosts Cheap Alternative

While treatment of mucormycosis, the black fungus affecting a section of Covid-recovered patients, has become synonymous with a 25-day course of an anti-fungal medication that costs more than Rs 30,000 daily, its shortage has forced city doctors to manage most with medicine that costs Rs 350 or less a day.

"The drug, liposomal amphotericin B, has been in short supply for several days, prompting us to use the conventional amphotericin B that costs a fraction but gives equal results," said ENT surgeon Dr Milind Navalakhe from Global Hospital, which has treated more than 35 patients in the past 60 days.

The drug liposomal amphotericin B to treat mucormycosis is in short supply. It is the newer drug and has emerged as the choice for several doctors because it has none of the side effects associated with the conventional option. It doesn't cause nausea, headache or impair the kidneys.

There is another drawback. The conventional drug has to be carefully administered as IV over 16 hours as against the six-injection daily course of liposomal amphotericin. However, if chosen carefully similar results can be attained according to doctors.

At present, most patients in Global Hospital and neighboring BMC-run KEM Hospital, Parel are on conventional therapy. "All our patients are doing well," said Dr Navalakhe.

COVID-19 Vaccines Protect Against Major Variants: WHO

A World Health Organization official has said that the COVID-19 vaccines, authorized for use in the United States and Europe, protect against the four key coronavirus variants that are known to exist at present.

WHO European Regional Director Hans Kluge stated that all of the virus variants that have emerged thus far appear to respond to the available authorized vaccines. Kluge said that at present it can be stated that all the four variants respond to the vaccines made available; however, the best way to curb the spread is to accelerate the vaccination rollout. He added that the vaccination drive has brought down COVID case numbers in the WHO European region, with the cases decreasing 60% in a month.

Stillbirth, Prematurity Risks Maybe Higher in Pregnant Women With COVID-19 at the Time of Birth

A UK study suggests that having COVID-19 around the time of birth may heighten the odds of stillbirths and premature births; however, the overall risks remain low.

The study, published in the American Journal of *Obstetrics and Gynecology*, assessed data involving over 340,000 women who gave birth in England from the end of May 2020 through January 2021. It was noted that 3,527 had positive COVID tests. Among these, 30 had stillbirths. 8.5 per 1,000 women with a positive test had a stillbirth, compared to 3.4 per 1,000 women who had a negative test. Around 12% of women with a positive test gave birth prematurely (before 37 weeks), compared to 5.8% of women with a negative test. Women who had COVID-19 at the time of birth were younger and more likely to be from a black, Asian or other minority ethnic background.

Covid-19 Could Become Like the Common Cold in Future, Study Suggests

The novel coronavirus responsible for Covid-19 could cause no more than common cold-like coughs and sniffles within the next decade, according to a study.

The research, published in the journal *Viruses*, makes this likely prediction based on mathematical models that incorporate lessons learned from the current pandemic on how our body's immunity changes over time.

"This shows a possible future that has not yet been fully addressed," said Fred Adler, a professor of mathematics and biological sciences at the University of Utah in the US.

"Over the next decade, the severity of Covid-19 may decrease as populations collectively develop immunity," Adler said.

The study suggests that changes in the disease could be driven by adaptations of our immune response rather than by changes in the virus itself.

The researchers noted that some evidence indicates that one of these cold-causing relatives might have once been severe, giving rise to the "Russian flu" pandemic in the late 19th century. The parallels led the scientists to wonder whether the severity of SARS-CoV-2 could sim-

ilarly lessen over time.

They built mathematical models incorporating evidence on the body's immune response to SARS-CoV-2.

"At the beginning of the pandemic, no one had seen the virus before. Our immune system was not prepared," Adler explained. The models show that as more adults become partially immune, whether through prior infection or vaccination, severe infections all but disappear over the next decade, the researchers said.

"We have shown that mild infections will win, as long as they train our immune systems to fight against severe infections," Beams said. However, the researchers noted that the models do not account for every potential influence on disease trajectory.

Moderna, Pfizer Vaccines Work Better in Men: New Research

A researcher is raising awareness about an important subtlety in vaccines in use in the United States — the Moderna and Pfizer-BioNTech vaccines appear to work slightly better for males than for females. Researcher Morteza Mahmoudi of Michigan State University has published three peer-reviewed papers calling attention to the role of sex in nanomedicine studies, both in general and as they relate to coronavirus vaccines. The latest paper was published in *Nature Communications.*

The Moderna and Pfizer vaccines use tiny orbs, or nanoparticles, to deliver their active ingredients to cells in our immune systems. Mahmoudi has been studying how and why nanomedicines can affect patients differently based on their sex. He believes this could be a factor with the vaccines.

In his latest paper, Mahmoudi has advocated for systemic changes in how nanoparticles are used and studied in medicine. His article outlines challenges in researching the role of sex in nanomedicine performance along with strategies to mitigate them.

For example, researchers may not have sufficient resources to perform their studies in cells or other samples taken from males and females. Yet these researchers and others may still interpret their results as being equally applicable to all sexes. To prevent this, Mahmoudi is calling for researchers to be more transparent and share sex-specific limitations of studies.

In the case of the Moderna vaccine, clinical trials showed it was 95.4% effective at preventing Covid cases for males, compared with 93.1% for females. For the Pfizer-BioNTech vaccine, the numbers are 96.4% for males and 93.7% for females.

The study found natural killer cells from female donors took up fewer nanoparticles than natural killer cells from male donors. Based on this model system, then, it is plausible that the immune systems of males and females would respond differently to the vaccine.

Poor Oral hygiene Can Aggravate COVID-19 Complications: AAP Study

American Academy of Periodontology (AAP) in its recent report mentioned that there is a direct connection between oral hygiene and COVID-19. Dr James G Wilson, President, AAP, says, "It is well-established that systemic inflammation is not only linked with periodontal disease but to several other respiratory diseases as well. Therefore, maintaining healthy teeth and gums to avoid developing or worsening periodontal disease is crucial amid a global pandemic like COVID-19, which is also known to trigger an inflammatory response.

Furthermore, a report by McGill University in Montreal, Canada, has found a direct link between gums with inflammation and infection and even connected how oral hygiene can play a part in aggravating COVID-19 complications and even lead to deaths. According to this study people that have gums issues or periodontitis are 8.8 times more likely to die of COVID-19. Not just his, such people are 3.5 times more likely to require hospitalization for COVID-19 and 4.5 times more likely to require a ventilator.

It has also come to light that oral health plays a

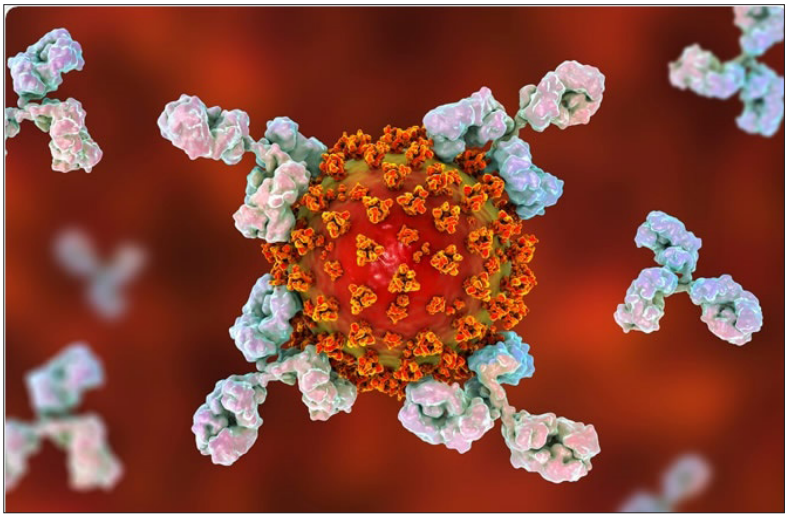
pivotal role even in the post-recovery period. Shedding more light on this, Dr Mohendar Narula, Founder and Chairman, MyDentalPlan Healthcare says, "Taking care of your gums and oral hygiene was always vital but it has become even more significant during this pandemic. In this second wave of COVID-19, oral symptoms are on the rise. However, maintaining optimum gum health with simple steps such as brushing twice a day, tongue cleaning, flossing and gargles can help people combat these life-threatening diseases even better. Furthermore, professional dental cleanings twice a year and regular dental check-ups are known to minimize the severity of COVID-19 and the associated complications."

When COVID-19 is Severe, Rogue Antibodies Attack Body Tissues and Organs

The coronavirus disease (COVID-19) pandemic, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), impacts patients in various ways. While most people develop only mild to moderate symptoms, some patients experience severe and potentially fatal symptoms.

COVID-19 presents a wide range of clinical manifestations characterized by misdirected and exaggerated innate immune responses. The role of autoantibodies in disease progression is unknown, but these activations have been well documented for patients with severe disease.

A cytokine storm has been cited as a significant contributor to severe symptoms. This is because of the immune system going haywire and causing massive damage to vital organs. Much remains unknown about the path the virus takes in severe cases, but past evidence shows a hyperactive immune response is tied to COVID-19 death.



Researchers at Yale University showed that the development of antibodies to the SARS-CoV-2 infection might go berserk and rogue, causing severe cases of COVID-19. These antibodies target and react with the body's tissues and organs, similar to those that cause autoimmune diseases, including rheumatoid arthritis and lupus.

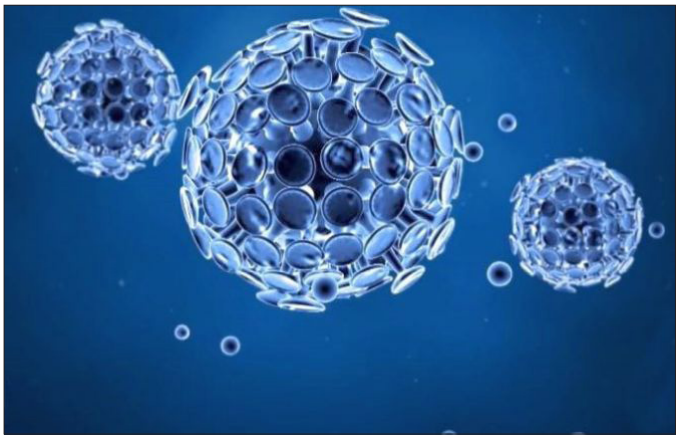
The researchers utilized a high-throughput autoantibody discovery technique known as Rapid Extracellular Antigen Profiling (REAP) to arrive at the study findings. The team screened a group of 194 SARS-CoV-2-infected patients and healthcare workers for autoantibodies against 2,770 extracellular and secreted proteins.

The researchers found that COVID-19 patients manifest marked elevation in autoantibody reactivities compared to uninfected controls. Additionally, they exhibited an abnormal prevalence of autoantibodies to immunomodulatory proteins, such as chemokines, cytokines, and cell surface proteins. This shows the link between autoantibodies produced by the immune system and cytokines, which have been tagged as culprits in severe cases of cytokine storm among COVID-19 patients.

Strong Links Between Hormones and Covid-19 Confirmed

The human body's endocrine system that makes hormones is strongly involved in the SARS-Cov-2 infection so much so that evidence of an "endocrine phenotype" of Coronavirus has emerged, according to a statement by the European Society of Endocrinology.

A team of scientists from the University at Autonoma de Barcelona in Spain looked at the available evidence concerning Covid-19 across several endocrine conditions and related factors: diabetes, obesity, nutrition, hypocalcemia, vitamin D insufficiency, vertebral fractures, adrenal insufficiency, as well as pituitary/thyroid issues and sex hormones. The effect on hormones cannot be ignored in the context of Covid-19," said lead author Manel Puig from the varsity, adding "the evidence is clear".



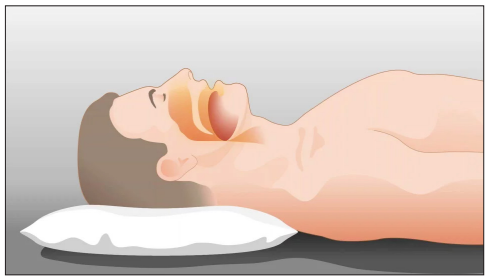
"We need to be aware of the endocrine consequences of Covid-19 for patients with a known endocrine condition such as diabetes, obesity or adrenal insufficiency, but also for people without a known condition. Vitamin D insufficiency for example is very common, and the knowledge that this condition has emerged frequently in the hospitalized Covid-19 population and may negatively impact outcomes should not be taken lightly," Puig added, in the statement published in the journal *Endocrine*.

The researchers posit that nutritional management is important both for patients with obesity or undernourishment to limit their increased susceptibility and severity of infection. Vitamin D, calcium and bone are other areas showing a growing body of evidence that better monitoring and solutions for patients are needed in the context of Covid-19.

Sleep Apnea Raises Odds for Severe COVID-19

People suffering from severe obstructive sleep apnea are at a greater risk of catching COVID-19, a new study finds.

But researchers at Kaiser Permanente Southern California also found that the longer patients used a continuous positive airway pressure (CPAP) mask while sleeping, the more their COVID-19 risk dropped.



For the study, a team led by pulmonologist Dr Dennis Hwang collected data on nearly 82,000 U.S. patients who were evaluated for sleep disorders between 2015 and 2020.

Of those, nearly 1,500 would test positive for a COVID-19 infection. In all, 224 were hospitalized, and 61 were in the intensive care unit and/or died.

Untreated sleep apnea was associated with a higher rate of COVID-19 infection, the findings showed.

"Greater PAP adherence, when therapy was used at least four hours a night during the pandemic period, also showed a reduced infection rate," the researchers reported.

Pfizer Vaccine Can be Stored in the Refrigerator For up to a Month: U.S. CDC

The U.S. Food and Drug Administration has approved the storage of the Pfizer-BioNTech COVID-19 vaccine at standard freezer temperatures for up to a month, in a bid to make the vaccine available more extensively.

Unopened, thawed vials can now be stored in a refrigerator at 2 to 8 degrees Celsius for up to a month, increasing from an earlier limit of 5 days. Peter Marks, director of FDA's Center for Biologics Evaluation and Research, said, "This change should make this vaccine more widely available to the American public by facilitating the ability of vaccine providers, such as community doctors' offices, to receive, store and administer the vaccine. "The change is particularly significant for global and remote facilities in the U.S. having poor transport and storage infrastructure.

Antibodies 6 Months After COVID-19 Infection in Patients on Dialysis

A study published in the *Annals of Internal Medicine* suggests that patients undergoing kidney dialysis demonstrate encouraging antibody levels 6 months following COVID-19 infection, with a slow reduction thereafter. This points to a good immune response to COVID-19 among this patient population, which is at high risk for severe outcomes.

Investigators assessed 2215 patients from a nationwide sample from 1200 dialysis centers across the United States. All patients had evidence of SARS-CoV-2 infection in July 2020 or earlier. Monthly levels of RBD IgG levels were evaluated with the help of plasma samples from routine monthly lab work, for up to 6 months. Around 93% of the patients had attained or maintained detectable antibody response, with an IgG index value of 1 or higher. Around 60% of patients had an immune response that was classified as high (IgG ≥ 10), and 76% of the subjects in this group had a sustained response that remained high.

AstraZeneca Vaccine Followed by Pfizer Dose Safe and Effective: Spanish Study

Preliminary results from a Spanish study on mixing COVID-19 vaccines have revealed that administering a dose of Pfizer vaccine to those who have already been given the first dose of the AstraZeneca vaccine is highly safe and effective.

The Combivacs study noted that the presence of IgG antibodies was around 30 to 40-fold higher in the individuals who received a second dose with the Pfizer vaccine compared to a control group that received only one AstraZeneca dose. The presence of neutralizing antibodies was found to increase seven times following a dose of the Pfizer vaccine, which was significantly more than the doubling effect noted following a second dose of the AstraZeneca vaccine.

Indian Army Sets up 100-bed Covid Care Facility in Bengaluru

The Indian Army has set up a Covid-19 care facility with 100 beds at Ulsoor in Bengaluru.

While speaking to ANI, Major General JV Prasad, General officer commanding (GOC), Karnataka and Kerala sub-division said, "This is a 100-bed Covid-19 Care Centre for mild cases. Out of these beds, around 55 are oxygen-fitted beds."

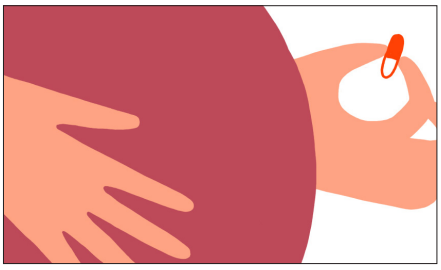
"Concentrators have been contributed by an NGO, United Sikhs", the official informed.

The 100 bed Covid-19 Community care center is set up at Kendriya Vidyalaya MEG Centre, Bangalore. The centre is set up by the Army in joint efforts with United Sikhs and Bruhat Bengaluru Mahanagara Palike (BBMP).

Study Tracks Antidepressant Use During Pregnancy

Almost half of New Zealand women who take antidepressants in the months before getting pregnant, stop during their pregnancy, a new University of Otago study shows.

The research, undertaken by the Pharmacoepidemiology Research Network, published in the Australian and New Zealand Journal of *Obstetrics and Gynaecology*, used pharmacy dispensing data of more than 800,000 pregnancies to describe patterns of antidepressant use in women before, during and after their pregnancies.



They found that antidepressant use in the nine months before pregnancy was stable but dropped considerably during the first trimester and further in the later trimesters. Use then rebounded within the first three months after pregnancy and continued to rise during the first postnatal year.

Lead author Dr Sarah Donald, of the Department of Preventive and Social Medicine, says evidence from a longitudinal study suggests that about 12 per cent of women in New Zealand experience depression, but this study revealed fewer than 5 per cent were using an anti-depressant at any time during pregnancy.

Effective management of depression throughout pregnancy is crucial, she said.