Russia's 'Sputnik-V' vaccine

India trials for Russia's 'Sputnik-V' vaccine could start in next few weeks
(The Indian Express: 2020923)

India trials for Russia's 'Sputnik-V' vaccine could start in next few weeks
Photo for representation only.

Dr Reddy's Laboratories Ltd could begin late-stage Indian clinical trials of Russia's potential coronavirus vaccine in the next few weeks, an executive at the Indian drugmaker said on Tuesday.

Indian trials of the Sputnik-V vaccine candidate, being developed by Russia's sovereign wealth fund, will enroll 1,000-2,000 participants and be conducted at multiple government and private hospitals across the country, Deepak Sapra, CEO for API and pharmaceutical services at Dr. Reddy's, told Reuters.

"We want to get to the first step - which is the commencement of the clinical trials by getting the necessary approvals from the Indian regulators - within the next few weeks," Sapra said.

The trials are part of a deal between the Russian Direct Investment Fund (RDIF) and Dr Reddy's, in which the Indian firm will conduct Phase III studies in India, pursue local regulatory approvals and, subject to approval, distribute the finished vaccine product in India. RDIF will supply 100 million doses to Dr Reddy's.

The RDIF has also reached agreements with Indian manufacturers to produce 300 million doses of the shot in India.

Russia was the first country to grant regulatory approval for a novel coronavirus vaccine.
Sputnik-V doses supplied in India will likely be a combination of Indian- and Russian-made doses, Sapra said, adding that RDIF and Dr Reddy's would soon identify potential manufacturers in India.

The RDIF has said vaccine deliveries to India could begin in late 2020, but Sapra suggested it could take longer. "I think it's going to be several months before we accomplish all the steps in the process," he added.

India, which has a population of more than 1.3 billion, is the world's second worst affected country by COVID-19 behind the United States. For weeks, it has reported the world's highest daily jump in infections, which reached a total of 5.6 million on Tuesday. Reuters

**Fluorescent nanoparticle**

This new model may speed drug discovery for Covid-19(The Tribune: 2020923)


Researchers have developed a new tool that mimics how SARS-CoV-2 -- the virus that causes Covid-19 -- infects a cell, information that could potentially speed the search for treatments against the disease.

The tool is a fluorescent nanoparticle probe that uses the spike protein on the surface of SARS-CoV-2 to bind to cells and trigger the process that pulls the virus into the cell.

According to the study, published in the journal ACS Nano, the probe could be used in tests to rapidly gauge the ability of biologics, drugs and compounds to block the actual virus from infecting human cells.

"Our goal is to create a screening system to find compounds that block SARS-CoV-2 from binding to cells and infecting them," said study author Kirill Gorshkov from the National Center for Advancing Translational Sciences (NCATS) in the US.

To create the probe, scientists built a fluorescent nanoparticle called a quantum dot, fashioned from cadmium and selenium. At around 10 nanometers in size, these spherical nanoparticles are 3,000 times smaller than the width of a human hair.

The research team then studded the quantum dots' surfaces with a section of the SARS-CoV-2 spike protein that binds to the angiotensin-converting enzyme 2 (ACE2) receptor on human cells. The union of the spike protein with ACE2 is the first step in the pathway to viral
infection. The glow from the quantum dots allows scientists to track the dots' behaviour under a microscope.

"Because they're such bright fluorescent objects, the quantum dots give us a powerful system to track viral attachment and effects on the cell in real-time," explained Gorshkov.

The investigators tracked how the quantum dot probes interacted with human cells that have ACE2 on their surfaces. They watched the nanoparticle probes attach to ACE2, which combined with the probes and pulled them into the cells. The quantum dot probes did the same in a lung cell line commonly used in coronavirus assays.

Safety data showed that the probes were not toxic to the test cells at the concentrations and exposure times used in the study. The quantum dots followed the SARS-CoV-2 pathway into cells, but the research team found the probes also mimicked the virus in the presence of antibodies.

Antibodies are proteins made by the immune system that can neutralize viruses such as SARS-CoV-2. The antibodies proved to be potent inhibitors of the quantum dot probes as well, preventing them from binding to ACE2 and entering human cells, the researchers said.

That antibody response means the quantum dot probes could help researchers rapidly test the ability of potential therapeutic agents to block the virus from entering and infecting cells.

**Influenza vaccine**

**Influenza vaccine does not increase COVID-19 risk: Study (The Tribune: 2020923)**


Researchers at Cleveland Clinic in the US analysed over 13,000 patients tested for COVID-19 between early March and mid-April

Influenza vaccine does not increase COVID-19 risk: Study

Receiving the influenza vaccine does not increase a person’s risk for contracting COVID-19 or worsen associated conditions or mortality, according to a study.

The research, published in the Journal of Clinical and Translational Science, shows the flu vaccine is the single most important intervention to help stay healthy.

Seasonal flu activity is unpredictable, and otherwise healthy people are hospitalised due to serious respiratory infection each year, the researchers said.
It was even more important to receive the flu vaccination this year to help prevent a ‘twindemic’ of flu and COVID-19, they said.

Researchers led by Joe Zein, a pulmonologist at Cleveland Clinic in the US, analysed over 13,000 patients tested for COVID-19 between early March and mid-April.

They compared those who had received unadjuvanted influenza vaccines in the fall or winter of 2019 (4,138 patients) with those who did not receive the vaccine (9,082 patients).

The study found that influenza vaccination was not associated with increased COVID-19 incidence or disease severity, including risk for hospitalisation, admission to the intensive care unit or mortality.

“Our findings suggest that we should proceed as usual with our vaccination strategy for global influenza this flu season,” said Zein, adding: “Getting the annual flu vaccine remains the best safeguard against the influenza virus, both for yourself and the people around you.”

The researchers noted that much was still unknown about the possible outcomes of concurrent SARS-CoV-2 — the virus that causes COVID-19 — and influenza infection, including disease pathology and burden to the healthcare system.

They believe that the population’s adherence to widespread and early flu vaccination while researchers continue to collect data will help to mitigate the risk of simultaneous viral infections and pandemics.

“We have already seen the stress that COVID-19 can put on our hospitals and resources,” said Zein.

“While we’re not yet sure how flu season will affect COVID-19 susceptibility and infections, we strongly advise people to get their influenza vaccines, both for their individual health and the collective health of our care systems,” he said. PTI

Curb bacterial disease

CIBA develops new product to curb bacterial disease (The Tribune: 2020923)


CIBA develops new product to curb bacterial disease

The ICAR-Central Institute of Brackishwater Aquaculture (CIBA) on Monday said it had developed a 'bacteriophage-based' product that is effective in bio-control of bacterial diseases in shrimp hatchery settings, killing only specific disease-causing bacteria.
The specific bacteriophages, which are viruses, would help produce quality shrimp seeds, free from antibiotics, the CIBA, established by the Indian Council of Agricultural Research, said in a release here.

"The 'phage prophylaxis and therapy' developed by the research institute is based on bacteriophages which are viruses that kill only specific disease-causing bacteria and act as therapeutic agents in controlling bacterial infections," it said quoting scientists.

Unlike in the case of antibiotics, bacteriophage therapy has no residual issues and has advantages of being specific to their host bacteria without harming other micro-organisms, it said.

According to Dr SV Alavandi, Principal Scientist and Head of Aquatic Animal Health and Environment Division of CIBA which developed the technology, bacterial diseases like vibriosis in aquaculture hatcheries often cause considerable economic loss to hatchery operators across the globe.

"CIBA's new product will be of great use in preventing and controlling such diseases in aquaculture especially in shrimp hatcheries," he said.

CIBA Director KK Vijayan said the product comprises of a "cocktail of phages" which could neutralise a wide range of pathogenic bacteria-causing diseases and was helpful in replacing the use of antibiotics which, according to him, pose the concern of residues and antimicrobial resistance.

In order to popularise the product through large-scale commercial production and marketing, the CIBA signed an MoU with Salem Microbes Private Limited in Salem to transfer the technology to the company, said the release. PTI

**Should we cheer the fall in India’s Covid-19 cases? (Hindustan Times: 2020923)**

[https://epaper.hindustantimes.com/Home/ArticleView](https://epaper.hindustantimes.com/Home/ArticleView)

The simple answer, at a time when good news is at a premium, is yes, but there is more to the fall than meets the eye. First, the facts. In the past week, the curve of new cases across the country has seen a rare dip, with the seven-day average of daily cases actually dropping for the five consecutive days to Monday — something that has never happened since the coronavirus outbreak started in the country in March. The numbers may suggest that cases in the country have started to plateau. Have they?
1 Have cases across India hit a plateau?

On September 10, there were 93,181 new cases of Covid-19 reported across the country, according to HT’s Covid-19 dashboard. Till that day, the trailing seven-day average of daily cases (commonly referred to as the daily case trajectory or the case curve) had been rising consecutively since August 16.

The August 16 drop in the trajectory was a single day aberration, largely explained by the decreased testing and reporting of cases due to the August 15 weekend. Before August 16, the trajectory had been rising for 81 straight days. All signs till a week ago pointed to the daily case number crossing the 100,000 mark in coming days. But this mark was never breached.

The seven-day case average touched a peak (so far) on September 16, at 93,617, and dropped for five consecutive days after that. By Monday night, this number had dropped to 90,472. This is an unprecedented drop for a country, which has seen a near-steady increase of the case trajectory throughout the pandemic.

2 But testing follows a similar drop

India set a new record for the daily tests for Covid-19 on Saturday when 1.2 million samples were tested, according to the Indian Council of Medical Research (ICMR), the country’s apex body on biomedical research. However, notwithstanding Saturday’s record, daily testing has been seeing a long plateau since the first week of September.

For the week ending Monday, on average 1,001,928 tests were conducted every day across the country. This number was 1,096,274 for the week ending September 13 (the highest it has ever touched so far).

In fact, the seven-day average line for daily tests (or the daily test trajectory) has largely followed the same path as the daily cases—a week-long plateau around September 10, followed by a drop over the past five-six days.

3 Meanwhile, positivity rate is rising, again

The seven-day average of positivity rate—the proportion of tests that come back positive for Covid-19—
On Monday, the World Health Organization (WHO) announced that 64 rich countries have joined its Covax facility for fair distribution and allocation of a Covid-19 vaccine. This writer has previously referred to Covax, a partnership of vaccine developers and countries set up by Gavi, the Vaccine Alliance, the Coalition of Epidemic Preparedness Innovations (Cepi), and WHO, that aims to source and distribute two billion doses of the vaccine by the end of 2021. Another 38 countries are expected to join Covax in the next few days, WHO said. Currently (including the 64), 156 countries are part of the facility under which they will receive the vaccines – with 92 eligible for free or subsidised vaccines. The rich countries will pay for the vaccine, though – their participation is, in effect, a hedge to ensure they have access to a successful vaccine (although many of them have already signed deals with vaccine-makers for hundreds of millions of doses). WHO said on Monday that its alliance now covers 64% of the world’s population. Interestingly, neither China nor the US (the world’s most populous and third most populous nations) are part of the facility. India is part of the facility by virtue of being a lower-middle income economy.

Covax is a work-in-progress, and is yet to raise the money it needs to pay for or subsidise the vaccines for lower-income countries. There have also been questions about whether the richer countries that are part of the facility will pay because of the deals they have already struck with vaccine-makers (the argument for is that they will do so as a way to build a vaccine stockpile in the best-case scenario and as a sort of insurance for the worst-case one). A previous instalment of this column cited an article from Nature magazine that showed that many rich countries have already struck deals with vaccine-makers to cover their entire population. The UK, for instance, has firm agreements that ensure a little more than five doses per capita; the US, two; the EU, close to two; Japan, 1.5; and Australia, one. This data is as of late August, so it is likely the numbers have increased.

WHO’s vaccine allocation plan, which has been public for some time, envisages distributing vaccine doses to cover 3% of the population of each of the participating countries and then scaling this up to 20%. Its assessment is that this will cover frontline workers in the fight against Covid, as well as the most vulnerable groups. In the second phase of distribution, WHO plans to use a risk assessment technique to understand “the potential impact of Covid-19” on a
country and “the vulnerability of a country based on health systems and population factors”. The agency actually has a detailed methodology for risk assessment. There has been some criticism of WHO’s allocation protocol – the countries that need the vaccine the most should be prioritised even in Phase 1, some say. But that would have perhaps made Covax a non-starter.

Interestingly, the US National Academies of Sciences Engineering and Medicine (Nasem) put out, in early September, a document detailing a possible protocol for what it termed “equitable allocation of vaccine for the novel coronavirus”. The organisation suggests four criteria to determine the allocation: infection risk, mortality risk, “risk of negative societal impact”, and transmission risk. Based on these, Nasem came up with a four-phase plan for the allocation of the vaccine. In the first part of Phase 1, it suggests vaccinating frontline workers in the fight against Covid-19; in the second part of the first phase, it extends this to people with comorbidities as well as old people living in crowded areas. Its recommendation for the second phase includes workers in “essential” industries with high exposure risk, teachers, old people not covered in the first phase, and the homeless. In Phase 3, Nasem recommends the coverage of “young adults” and children, and also workers in “essential industries” with “increased” risk. And Phase 4 covers everyone not already covered.

India’s expert group on vaccines is working on the country’s own vaccine prioritisation protocol, and it could do worse than to look closely at the Covax allocation methodology of WHO or Nasem’s allocation framework. We need a plan for when the vaccine will be available.

**Aerosols**

**In the air: On CDC’s acknowlegement of COVID-19 spread through aerosols (The Asian Age: 2020923)**

https://www.thehindu.com/opinion/editorial/in-the-air/article32663532.ece

With more evidence of aerosol transmission, physical distancing and masking are crucial. The Centers for Disease Control and Prevention (CDC) is revising its guidelines to acknowledge the spread of the novel coronavirus through aerosols, and to point to inhalation of particles as a common way the virus spreads. A draft of the proposed changes to its recommendations, which was later withdrawn pending finalisation, confirmed that airborne particles can spread even by breathing, remain suspended in air and be inhaled and spread beyond six feet in certain enclosed settings. This comes after a body of evidence provided sufficient indication of aerosol (less than 5 microns) transmission, especially in closed settings with poor ventilation and after prolonged contact with an infected person. In February, researchers from the Wuhan Institute of Virology, in a paper published in Nature, first proposed airborne transmission. The paper also identified and characterised the novel coronavirus and confirmed the receptor to which the virus binds. The World Health Organization had, on July 9, acknowledged that the virus can be airborne in closed settings after an open letter by more than 200 scientists appealing to the medical community and national and international bodies to “recognize the potential for airborne spread of COVID-19”.
Beginning with the cruise ship, Diamond Princess, large outbreaks have been documented in churches in South Korea and Singapore, prisons, old-age homes, ski resorts in Austria and even choir practice in a church in Mount Vernon, Washington, providing strong evidence of aerosol transmission in certain closed settings early during the pandemic. It is therefore bewildering that both WHO and the CDC refused to adopt the precautionary principle and caution people even while collecting data to confirm or refute that possibility. However, even in the absence of guidelines from the global bodies, many countries had on their own denied permission for certain enclosed settings to operate, thus averting innumerable outbreaks and cases. With aerosol transmission now being confirmed and its spread to distances beyond six feet also known, the only way to prevent infection till such time and probably even when vaccines become available is through universal masking. Timely cautioning by global bodies of an aerosol transmission possibility might have encouraged universal mask wearing early on, thus preventing thousands of cases. Universal masking can avert infections, and if infected, the amount of viral load one is exposed to will be less, thus leading to only asymptomatic infections or mild disease. Unlike Diamond Princess, universal masking in another ship led to 81% of infections being asymptomatic. There have been similar results in other cases where universal masking was practised. With aerosol transmission now being established as a common way of spread in certain settings, the best way to avoid getting infected is by staying clear of crowded, closed settings that have poor ventilation.

**Acute phase of COVID-19**

**What precautions should a recently-recovered COVID-19 patient take? Find out (The Indian Express: 2020923)**


'After the acute phase of COVID-19 is over, patients may return to hospitals with symptoms such as lethargy, body aches and itchy throats, even four to six weeks later,' says Dr Md Shakeel of Hiranandani Hospital, Vashi

'Now that the infection has been in the country for over five months, we need to start looking at post-COVID-19 rehabilitation.' (Source: Pixabay)

It has been a while now since the COVID-19 pandemic, and people are slowly learning of many different ways to deal with it — both in terms of recovery and prevention. It is a known fact that the virus, once it is inside the body, does not isolate and attack the respiratory system alone, but instead makes its way to many other organs.

Brand Wagon Conclave
Dr Md Shakeel, Head-Emergency & Trauma, Hiranandani Hospital, Vashi — a Fortis Network Hospital — says a study conducted in Italy showed that 87.4 per cent of patients, who had
recovered from COVID-19, reportedly felt some kind of fatigue and dyspnoea (laboured breathing). This was reported even after two months of being discharged from the hospital.

“Some patients who had recovered had to be rushed back with low oxygen saturation levels, just a day after discharge. These patients were admitted to the hospital for at least 10 more days, and were discharged only after they started doing well. These patients returned to the hospital with a whole spectrum of lung diseases – from fibrosis (formation of hard fibrous tissues as the lung heals from an injury) to secondary infections and pneumonia. It was also noted that after recovering from COVID-19, some patients came back with reduced heart function, heart attack or even stroke,” he says.

ALSO READ | Home-based care for COVID-19 infection; here are some dos and don’ts

Dr Shakeel goes on to say that the virus — which is known to attack the endothelial cells that line the blood vessels — causes excessive blood clotting in the body. And now that the infection has been in the country for over five months, we need to start looking at post-COVID-19 rehabilitation.

“These long and short-term impacts are called ‘post-COVID syndrome’. This means, after the acute phase of COVID-19 is over, patients come back to hospitals with symptoms such as lethargy, body aches and itchy throats, even four to six weeks later. Patients are also seen to have had some psychological stress, leading to anxiety and depression. It is of utmost importance to monitor such cases, and a proper post-discharge rehabilitation plan be put in place, to monitor the patient’s health, so timely intervention can be done,” he explains.

The doctor says that there are some things that COVID survivors should assess:

* Their daily check of oxygen saturation, it should be maintained at >94% in room air.
* They must watch for respiratory symptoms like persistence or worsening of cough and breathlessness.
* Check for persistent rise of body temperature above 100F.
* Watch out for signs of lethargy, drowsiness, and altered sensorium.
* Regular monitoring of blood sugar in known diabetic patients. COVID infection (as any other infection) alters blood sugar levels of the body. Strict monitoring once in three days and regular consultation with your doctor is required.
* Regular blood pressure monitoring in known hypertensive patients is required to avoid accelerated hypertension-related complications. Weekly blood pressure monitoring in case of controlled hypertension, or more frequently in case of abnormal readings, is required.
* Follow up consultation with the doctor within seven days of discharge.
* Blood investigations like CBC, CRP at first follow up, and subsequent follow-ups, if advised by a physician.
* Repeat CT scan of chest after three months to look at the extent of lung recovery post-infection.
Some good news in the search for antiviral drugs for hard-to-treat diseases as researchers have identified a potential new drug candidate against enterovirus 71, a common cause of hand, foot and mouth disease in infants and young children.

The compound is a small molecule that binds to RNA, the virus's genetic material, and changes its 3-D shape in a way that stops the virus from multiplying without harming its human host.

There are currently no USFDA-approved drugs or vaccines for enterovirus 71, which affects hundreds of thousands of children each year, particularly in Southeast Asia.

While most people get better within 7 to 10 days after suffering little more than a fever and rash, severe cases can cause brain inflammation, paralysis and even death.

According to the study, published in the journal Nature Communications, this work could pave the way for new treatments for other viral infections as well.

"For diseases that don't have good treatments, maybe the problem is we've been targeting the wrong thing," said study co-author Amanda Hargrove from Duke University in the US.

Instead of targeting proteins, Hargrove and others are looking for small molecules that target RNA, which most drug discovery programmes have overlooked.

For the current study, Hargrove and colleagues screened a library of some 30 small molecules, looking for ones that bind tightly to the bulge and not other sites in the virus's RNA.

The RNA is a wiggly molecule; when it binds to other molecules such as host proteins or small molecule drugs it takes on different 3-D shapes.

The researchers identified one molecule, dubbed DMA-135, that enters infected human cells and attaches itself to the surface of the bulge, creating a kink in this region.

This shape change, in turn, opens access to another molecule -- a human repressor protein that blocks the "reading out" of the virus's genetic instructions, stopping viral growth in its tracks.

In an experiment, the researchers were able to use the molecule to stop the virus from building up inside human cell cultures in the lab, with bigger effects at higher doses.

The authors said that it would take at least five years to move any new drug for hand, foot and mouth disease from the lab to medicine cabinets.
"Before their small molecule could reach patients, the next step is to make sure it's safe and effective in mice," the authors wrote.

**Negative impact of Covid-19**

**Study reveals negative impact of Covid-19 lockdown on kids (New kerala: 2020923)**


Children, who appear at a relatively lower risk from Covid-19, are disproportionately harmed by precautions involved with lockdowns, warn researchers.

Experts from Oxford University Hospitals in the UK noted that while the role of transmission of SARS-CoV-2 by children is still uncertain, existing evidence points to educational settings playing a limited role when mitigation measures are in place.

Meanwhile, ongoing school closures and losses of other systems that help and protect children are revealing indirect but very real harm being borne by them.

For example, in the UK, it is estimated that the impact on education thus far may lead to a quarter of the national workforce having lower skills for a generation after the mid-2020s.

What's more, many countries are seeing more evidence of accidents at home requiring hospitalisation during lockdown periods and of adversely affected mental health in the young.

In the study, published in the journal Science, the authors address the concern that children in schools without symptoms may be "shedding" the virus, which could bring the virus home.

Understanding this is a key to resolving what has been an "unprecedented" global disruption to primary and secondary school education, they said.

They also cited studies that show minimal transmission from children positive for the virus to their contacts.

The coming months as schools reopen in the Northern Hemisphere will be an important opportunity to identify which measures schools are using to mitigate the virus spread are most effective, to generate a standard "best practice" that balances young people's rights to education with the need to protect the broader community from further transmission.

The authors said that advocates of child health need to ensure that children's rights to health and social care, mental health support and education are protected throughout future pandemic waves.
School closure should be undertaken "with trepidation" given the indirect harm it can cause, write the authors. Pandemic mitigation measures that impact children's wellbeing should only happen if evidence exists that those measures help, they noted.

**Smoking**

**Smokers increasingly trying e-cigarettes to quit: Study (New kerala: 2020923)**


Researchers have found that people who smoke are increasingly using e-cigarettes to try to quit smoking.

The study, published in the International Journal of Environmental Research and Public Health, found that between 2016 and 2018 the level of awareness, as well as the use of e-cigarettes, increased among smokers and those who had recently quit smoking.

"E-cigarette use was most common among those aged 18-24 years and among those who had recently quit smoking," said study author Richard Edwards from the University of Otago in New Zealand.

The research is part of the New Zealand arm of the International Tobacco Control Policy Evaluation (ITC) project and involved surveys with 1,155 people between 2016 and 2017 and 1,020 people in 2018 who smoked or had recently quit smoking.

The study found there to be a high awareness of vaping devices, with 98 per cent of smokers and recent quitters saying they were aware of e-cigarettes.

According to the researchers, 77 per cent of the respondents reported having tried vaping, while 22 per cent reported currently using e-cigarettes at least monthly and 11 per cent reported using them daily.

Daily use was greatest among recent quitters (23 per cent) compared to current smokers (eight per cent) and among 18-24-year-olds (19 per cent) compared to older age groups (10 per cent).

The most common reasons given for using e-cigarettes were to help quit (78 per cent) or cut down on smoking (81 per cent).

The results are promising, particularly the findings that use is most common among recent quitters and that a high proportion of regular users are using e-cigarettes to quit smoking.

"However, it is of concern that e-cigarette use is more prevalent among 18-24-year-olds. If e-cigarettes are to make a substantial contribution to reducing smoking, their use needs to be greater among older age groups," the authors wrote.
"While the research shows more people are using e-cigarettes to quit smoking, more smokers reported using e-cigarettes on a trial basis, rather than regularly, which suggests there might be barriers to more sustained use," they noted.

**Cancer drug**

**This cancer drug can help in Covid-19 treatment (New kerala: 2020923)**


Researchers in the US have discovered that an experimental cancer drug called AR-12 inhibits the Covid-19 virus from infecting cells and replicating.

AR-12 has been studied extensively as both an anti-cancer and anti-viral drug and showed that it is effective against viruses including Zika, mumps, measles, rubella, chikungunya, drug-resistant HIV and influenza.

"AR-12 works in a unique way. Unlike any other anti-viral drug, it inhibits cellular chaperones, which are proteins that are required to maintain the right 3D shape of viral proteins," said study author Paul Dent from the Virginia Commonwealth University in the US.

"The shape of the virus is critical to its ability to infect and replicate," Dent added.

According to the study, published in the journal Biochemical Pharmacology, one of the cellular chaperones inhibited by AR-12 is GRP78, which is essential for the reproduction of all viruses.

GRP78 acts as a sort of cellular stress sensor and is required for the life cycle of all mammalian viruses.

Researcher Andrew Poklepovic, who is leading efforts to translate these exciting findings into a clinical trial, said "AR-12 is an oral therapy that has been well-tolerated in a prior clinical trial, so we know that it is safe and tolerable.

"Most Covid-19 drugs are given intravenously, so this would be a unique therapeutic option and potentially suitable for outpatient therapy, similar to the way one would take an antibiotic," Poklepovic added.

Poklepovic hopes to begin enrolling patients in early 2021, but several milestones remain.

"For help reaching these significant milestones and moving forward with this research at the accelerated pace that we know is needed, we turned to our colleague at Massey, Said Sebti, who has extensive experience in drug development," said Poklepovic.
"We are working to submit the required information for US FDA approvals, and we are also in discussions with a local pharmaceutical company to manufacture the drug for the trial," the study authors wrote.

"We are hopeful that AR-12 will emerge as a treatment option for patients suffering from COVID-19, ultimately saving lives and contributing to the global pandemic solution," they noted.

**Flu vaccine**

**Flu vaccine may not increase Covid-19 risk: Study (New kerala: 2020923)**


Researchers have found that receiving the influenza vaccine does not increase a person's risk for contracting Covid-19 or worsen associated morbidity or mortality. Published in the Journal of Clinical and Translational Science, the study shows the flu vaccine is the single most important intervention to help stay healthy this fall and winter.

For the findings, the research team analysed more than 13,000 patients tested for Covid-19 at Cleveland Clinic in the US, between early March and mid-April of this year. "Our findings suggest that we should proceed as usual with our vaccination strategy for global influenza this flu season," said study author Joe Zein from Cleveland Clinic in the US.

"Getting the annual flu vaccine remains the best safeguard against the influenza virus--both for yourself and the people around you," Zein added.

Comparing those who had received unadjuvanted influenza vaccines in the fall or winter of 2019 (4,138 patients) against those who did not receive the vaccine (9,082 patients) revealed that influenza vaccination was not associated with increased Covid-19 incidence or disease severity, including risk for hospitalization, admission to the intensive care unit or mortality.

Since much is still unknown about the possible outcomes of concurrent Covid-19 and influenza infection, researchers and clinicians believe that the population's adherence to widespread and early flu vaccination will help to mitigate the risk of simultaneous viral infections and epidemics/pandemics.

"We have already seen the stress that Covid-19 can put on our hospitals and resources," Zein said.

"While we're not yet sure how flu season will affect Covid-19 susceptibility and infections, we strongly advise people to get their influenza vaccines, both for their individual health and the collective health of our care systems," Zein added.

According to the researchers, seasonal flu activity is unpredictable, and otherwise healthy people are hospitalized due to serious respiratory infection each year.
"This year, it's even more important to receive the flu vaccination to help prevent a twindemic of flu and Covid-19," the study authors wrote.
बीआरडी मेडिकल कॉलेज में प्लाज्मा थेरेपी लखनऊ के किंग जार्ज मेडिकल यूनिवर्सिटी (केजीएमयू) की निगरानी में होगी। केजीएमयू की गाइडलाइन पर बीआरडी के डॉक्टर चिकित्सकों को प्लाज्मा देंगे। इसके बाद केजीएमयू उनका डाटाबेस तैयार करेगा। शासन की ओर से केजीएमयू को स्टेट का नोडल सेंटर बनाया गया है। इस फैसले के बाद से यह उम्मीद की जा रही है कि जल्द ही बीआरडी में गंभीर चिकित्सित मरीजों का इलाज प्लाज्मा थेरेपी से किया जाएगा।

प्रदेश में सबसे पहले प्लाज्मा थेरेपी की शुरुआत केजीएमयू लखनऊ में शुरू हुई थी। इसके बाद से शासन की ओर से बीआरडी में प्लाज्मा थेरेपी शुरू करने के निर्देश दिए गए। फातिमा हॉस्पिटल के एफेरेसिस मशीन के सहयोग से बीआरडी के दो डॉक्टर समेत दो अन्य लोगों ने प्लाज्मा दान किया। इस बीच आईसीएमआर और एम्स ने थेरेपी पर सवाल खड़े कर दिए। इसकी वजह से प्लाज्मा थेरेपी की योजना ठंडे बस्ते में चली गई थी।

केजीएमयू में प्लाज्मा थेरेपी सफल होने के बाद शासन ने यह फैसला लिया है कि इस प्रदेश के सभी मेडिकल कॉलेजों में लागू किया जाएगा। इसकी मॉनिटरिंग खुद केजीएमयू की टीम करेगी। पूरे प्रदेश का डाटा भी टीम ही तैयार करेगी। बीआरडी मेडिकल कॉलेज के में डिसिन्विशेष विभाग के विभागाध्यक्ष डॉ महिम मितल ने बताया कि शासन के निर्देशों का पूरा पालन किया जाएगा। कुछ प्लाज्मा बीआरडी को मिले हैं। जससे अन्य के मुताबिक उसका इस्तेमाल मरीजों पर किया जाएगा।

कोरोना ढकने का नहीं दिखा कोई दुष्प्रभाव

रुस का दावा, कोरोना ढकने का नहीं दिखा कोई दुष्प्रभाव (Hindustan: 20200923)
रूस ने दावा किया है वैश्विक महामारी कोविड-19 के खिलाफ विकसित उसके टीके को पंजीयन से पहले के ट्रायल में करीब 2500 वालंट्रर को लगाया गया था और उसका किसी प्रकार का दुष्प्रभाव नहीं देखा गया।

रूस ने कहा है कि तीसरे चरण के क्लिनिकल ट्रायल में करीब 40 हजार लोग शामिल हैं। कोरोना वैक्सीन विकसित करने का दावा कर रहे रूस के संस्थान 'द गामाले साइंटिफिक रिसर्च इंस्टीट्यूट ऑफ एपिडेमियोलॉजी एंड माइक्रोबायोलॉजी' के प्रमुख अलेक्जेंडर गिंस्टबर्ग ने कहा कि वैक्सीन के ट्रायल की की खेप को देश के सभी राज्यों को दिया गया है।

अलेक्जेंडर का दावा है कि अगले साल तक कोरोना को मात देने के लिए उसका वैक्सीन लोगों को उपलब्ध हो जायेगा। उन्होंने कहा, "मॉस्को के 2500 लोगों ने कोरोना का पहला वैक्सीन लगाया है और मामूली असुवधा के लिए अलावा कोई बड़ी समस्या देखने को नहीं मिली। तीसरे चरण के क्लिनिकल ट्रायल में 40 हजार से अधिक लोग शामिल हैं।"

दो दिन पहले रूस के स्वास्थ्य मंत्रालय ने यह नहीं बताया था कि देश में कितने लोगों को यह टीका लगाया था। स्वास्थ्य मंत्री मिखाइल मुराश्को ने कहा था, रूस के प्रांतों में छोटी खेप भेजी गई हैं। उन्होंने हालांकि यह नहीं बताया कि कितनी खुराके भेजी गई हैं और कब तक ये उपलब्ध हो सकेगी। उन्होंने बताया कि सेंट पीटर्सबर्ग के पास लेनिनग्रेड रीजन में सबसे पहले सैंपल वैक्सीन भेजी जाएगी।

एसोसिएशन ऑफ क्लिनिकल ट्रायल ऑर्गनाइजेशन की डायरेक्टर स्वेतलाना जाविडोवा ने कहा है, "अगर इस वैक्सीन का उत्पादन सीमित होता तो अच्छा रहता क्योंकि इसे जल्दी बाजी में स्वीकृति दी गई थी।"
इस माह विज्ञान पत्रिका वैंसेट में प्रकाशित एक अध्ययन के अनुसार यह वैक्सीन सुरक्षित है। फेज एक और फेज दो के ऑंकड़ों के मुताबिक इसने सेल्युलर और एंटीबॉडी रिस्पांस जेनरेट किया।

फेज तीन ट्रायल के नतीजे अक्टूबर-नवंबर में प्रकाशित होने की उम्मीद है। रूस ने आज ही दावा किया कि अगले वर्ष फरवरी तक इस टीके का अधिकत उत्पादन हो सकेगा।

रूस 11 अगस्त को कोरोना वैक्सीन'स्पूतनिक बी' विकसित करने की घोषणा करके वैश्विक संक्रमण के खिलाफ टीका का पंजीयन करने वाला पहला देश बन गया। राष्ट्रपति ब्लादीमिर पुतिन ने घोषणा की थी कि उन्होंने अपनी बड़ी पुत्री को यह टीका लगवाया है। रूस के इस टीके के लेकर विश्वभर में विवाद बढ़ गया क्योंकि इसे बिना अंतिम चरण के क्लिनिकल ट्रायल के लगाया गया था।

वैक्सीन को लेकर नई गाइडलाइन

देश में कोरोना की वैक्सीन को लेकर नई गाइडलाइन जारी, DGCI ने दिए आवश्यक सुरक्षा निर्देश (Dainik Jagran: 20200923)


नई दिल्ली, एएनआई। दुनियाभर में कोरोना वायरस महामारी संकट के बीच वैक्सीन तैयार करने को लेकर जत्थोजहद जारी है। दुनिया के कई देशों के वैज्ञानिक वैक्सीन तैयार
करने में जुटे हुए हैं। इस बीच, भारत में कोरोना वायरस की वैक्सीन को लेकर नई गाइडलाइन जारी की गई है। देश की ड्रग नियमक संस्था, ड्रग्स कंट्रोलर जनरल ऑफ इंडिया (DCGI) ने कोरोना वैक्सीन को लेकर नई गाइडलाइन जारी की है। ड्रग्स कंट्रोलर जनरल ऑफ इंडिया (DCGI) ने बड़ी फार्मा कंपनियों के लिए सुरक्षा, प्रतिरक्षा और प्रभावकारिता मापदंडों को ध्यान में रखते हुए दिशानिर्देशों का एक नया सेट जारी किया है, जो COVID-19 वैक्सीन विकसित कर रहे हैं।

ड्रग्स कंट्रोलर जनरल ऑफ इंडिया (DCGI) ने अपनी नई गाइडलाइन में कहा है कि किसी भी कोरोना वैक्सीन के पास तीसरे चरण के ह्यूमन ट्रायल में कम से कम 50 प्रतिशत प्रभावकारिता होनी चाहिए, यानि उसके परीक्षण में इस वैक्सीन के 50 प्रतिशत लोगों में ठीक से काम करना चाहिए ताकि इसके लिए व्यापक रूप से तैनाती की जा सके और पर्याप्त डाटा वैक्सीन से जुड़े संवृत्ति वातन रोग (ERD) के संभावित जोखिम को सूचित कर सके।

मुद्दों पर ठीला पड़ा संयुक्त राष्ट्र, वैश्विक संगठन में व्यापक बदलाव की जरूरत यह भी पढ़े कोरोना वैक्सीन को लेकर जारी नई गाइडलाइन में कहा गया है कि कोरोना वायरस की रोकथाम के लिए एक सुरक्षित और प्रभावी वैक्सीन की तत्काल आवश्यकता पर विचार करते हुए, वैक्सीन के ट्रायल कार्यक्रम से जुड़े ERD के संभावित जोखिम को सूचित करने के लिए डाटा सहित एक अनुकूली और सहज प्रदर्शकों के माध्यम से आगे बढ़ने की जरूरत होगी।

कोरोना वैक्सीन को लेकर जारी नई गाइडलाइन में इस बात पर प्रकाश डाला गया है कि गर्भावस्था में और प्रसव की क्षमता वाली महिलाओं में COVID-19 निरस्त्र टीकों का उपयोग कार्यक्रम के लिए एक महत्वपूर्ण विचार है।

देश में 30 वैक्सीन पर चल रहा काम
स्वास्थ्य मंत्री हर्षवर्धन (Health Minister Dr Harsh Vardhan) ने ने कहा कि देश में कोरोना की 30 वैक्सीन पर काम हो रहा है। इनमें से तीन वैक्सीन क्लीनिकल ट्रायल के विभिन्न चरणों में है, जबकि चार वैक्सीन क्लीनिकल ट्रायल से पहले की अवस्था में हैं। हर्षवर्धन ने राज्यसभा में कहा था कि भारत भी अन्य देशों की तरह ही वैक्सीन बनाने के लिए पूरा प्रयास कर रहा है। हमें उम्मीद है कि अगले साल की शुरुआत में भारत में वैक्सीन उपलब्ध होगा।

डायबिटीज

डायबिटीज की राजधानी में क्या इंसोमनिया बढ़ा रहा है मरीजों की संख्या? (Navbharat Times: 20200923)


हमारे देश में बढ़ते शुगर रोगियों का एक बड़ा कारण नींद की कमी हो सकता है, यहां जानें क्यों सामने आ रही है यह बात...

भारत को शुगर के रोगियों की राजधानी कहा जाता है। क्योंकि हमारे देश में दुनिया के सबसे अधिक डायबिटिक पेशंट रहते हैं। इसके साथ ही हमारे देश में दुनियाभर के युवाओं की एक बड़ी आबादी भी रहती है। प्रधानमंत्री नरेंद्र मोदी के भाषणों में आप अक्सर सुनते होंगे कि हमारा राष्ट्र एक युवा राष्ट्र है। इसलिए हमारे देश में अपार ऊर्जा और अपार संभावनाएं हैं...

सपने पूरे करने के लिए सजगता जरूरी

प्रधानमंत्री नरेंद्र मोदी हमारे देश के युवाओं को उनकी क्षमता और शक्ति का अहसास कराने के लिए बार-बार यह बात करते हैं कि हम एक युवा देश हैं। लेकिन हमारे देश के युवा
अपनी शक्ति का पूरा उपयोग तभी कर पाएंगे जब वे मानसिक और शारीरिक रूप से स्वस्थ रहेंगे।

तेजी से बढ़ रहे हैं युवा रोगी

-हमारे देश में युवा रोगियों की संख्या में भी काफी तेजी से वृद्धि हो रही है। इसका मुख्य कारण है खान-पान और सेहत को लेकर बरती जा रही लापरवाही। यह एक बड़ी वजह है कि जिस कारण हमारे देश में ना केवल टाइप-1 बल्कि टाइप-2 डायबिटीज के रोगी भी बहुत तेजी से बढ़ रहे हैं।

एक नया कारण आया है सामने

-अब तक माना जाता रहा है कि टाइप-2 डायबिटीज की शिकायत आमतौर पर खान-पान और लाइफस्टाइल से जुड़ी दिक्कतों के चलते होती है। लेकिन हालाँकि हुई एक स्टडी में यह बात सामने आई है कि टाइप-2 डायबिटीज की समस्या का एक बड़ा कारण इंसोमनिया भी है।

क्या होता है इंसोमनिया?

-नींद ना आने की बीमारी को इंसोमनिया कहा जाता है। जो लोग चाहकर भी सो नहीं पाते हैं, वे इस बीमारी से ग्रसित हो सकते हैं। इंसोमनिया की समस्या तनाव, एंजाइट और डिप्रेशन की वजह से भी हो सकती है। क्योंकि इन मानसिक समस्याओं के कारण हमारे ब्रेन में हॉमोनल संतुलन बिगड़ जाता है और नींद प्रभावित होती है।

क्या है इंसोमनिया का शुगर से लिंक?

-पिछले दिनों युके के वैज्ञानिकों द्वारा की गई एक स्टडी में यह बात सामने आई है कि जिन लोगों को इंसोमनिया की शिकायत होती है, उनमें डायबिटीज टाइप-2 का खतरा उन लोगों की तुलना में 17 प्रतिशत अधिक हो जाता है, जिनमें यह रोग नहीं होता है।

आपको बरतनी होगी यह सतर्कता
इस बुधवार को आप स्वस्थ रहने के लिए स्वयं और अपने परिवार को डायबटिज टाइप-2 के खतरे से बचाए रखने के लिए जरूरी है कि आप इस बात का ध्यान रखें कि सोने का एक निश्चित समय हो। सोने और जागने का समय निश्चित होने पर हमारे शरीर की बायोलॉजिकल क्लॉक ठीक तरह से काम करती है।

इससे हमें हॉर्मोन्स से जुड़ी बीमारियां नहीं होती हैं, हमारा शरीर स्वस्थ रहता है तो दिमाग भी शांति से काम कर पाता है और नींद के लिए जरूरी मेलाटॉनिन हॉर्मोन को सही मात्रा में प्रदायूक्त कर पाता है।

**कोलोरेक्टल कैंसर**

कोलोरेक्टल कैंसर और आंत के ऊतकों में परिवर्तन के लिए जिम्मेदार नहीं है IBS (Navbharat Times: 20200923)


पेट में तेज मरोड़ उठना और पॉट करने वाले दर्द होना जैसी समस्याओं की वजह हो सकता है इरिटेबल बॉउल सिंड्रोम (irritable bowel syndrome)

कोलोरेक्टल कैंसर और आंत के ऊतकों में परिवर्तन के लिए जिम्मेदार नहीं है IBS

कोलोरेक्टल कैंसर के जोखिम को बढ़ाने में आईबीएस यानी इरिटेबल बॉउल सिंड्रोम का कोई रोल नहीं होता है। इसके साथ आईबीएस की समस्या आंत के ऊतकों में परिवर्तन के लिए भी जिम्मेदार नहीं होती है। हालांकि इस समस्या का बुरा असर बड़ी आंत की कार्यप्रणाली और सेहत पर जरूर पड़ता है।
इसके लक्षण बहुत सामान्य होते हैं

-हमारे शरीर में बड़ी आंत को प्रभावित करने वाली जितनी बीमारियां होती हैं, इरिटेबल बाउल सिंड्रोम भी उनमें शामिल है। लेकिन यह आंत के उत्कषण के रूप में किसी तरह के परिवर्तन के लिए जिम्मेदार नहीं होता है।

-आमतौर पर लोगों को इस डिसऑर्डर के बारे में तब पता चलता है, जब यह अपने खतरनाक रूप में पहुँच जाता है। क्योंकि इस डिसऑर्डर के लक्षण बहुत सामान्य होते हैं और इन्हें ज्यादातर लोग अनदेखा कर देते हैं।

संभालने में लगता है अधिक समय

-पेट में मरोड़ उठना, दर्द होना, पेट फूलना, गैस की समस्या होना, डायरिया होना या कब्ज की समस्या होना जैसे परेशानिया इरिटेबल बाउल सिंड्रोम के दौरान होती हैं। ये समस्याएं जब बहुत अधिक बढ़ जाती है तो इस डिसऑर्डर को पूरी तरह नियंत्रित करने में बहुत अधिक समय लगता है।

बहुत कम लोग पहुँचते हैं इस हालत में

-हालांकि हेल्थ एक्सपर्ट्स का कहना है कि बहुत ही कम लोगों में आईबीएस के गंभीर लक्षण नजर आते हैं क्योंकि आमतौर पर इस समस्या के लक्षणों को अपनी डायट को मैनेज करके नियंत्रित किया जा सकता है।

ऐसे लोगों में बढ़ नहीं पाती बीमारी

-ऐसे में जो लोग अपने भोजन को लेकर जागरूक होते हैं, वे कम समस्या होने पर ही खान-पान में सुधार के साथ इस समस्या को बढ़ाने से रोक लेते हैं। हालांकि ज्यादातर लोगों को यह पता नहीं होता है कि आखिर उन्हें इस तरह की समस्याएं हो क्यों रही हैं।

आईबीएस के लक्षणों की जानकारी
-इरटेबल बाउल सिंड्रोम (Irritable Bowel Syndrome) के रोगियों को आमतौर पर पेट और पाचन संबंधी समस्याओं का सामना करना पड़ता है।

-आईबीएस को रोगी को पेट में मरोड़ होने और पेट के निचले हिस्से में तेज दर्द होने की समस्या आमतौर पर मस्त त्याग (पॉटी के समय) करते वक्त होती है।

-आईबीएस के रोगियों के पेट में बहुत अधिक गैस बनती है। अक्सर इस गैस के कारण वे असहज रहते हैं और यह गैस सिरदर्द या शरीर के अन्य अंगों में दर्द का कारण बन जाती है।

डायरिया और कब्ज़ा

-यह स्थिति थोड़ी कंप्यूजिंग है। लेकिन ऐसा होता है कि आईबीएस के रोगी में कभी-कभी डायरिया की स्थिति होती है तो कभी कब्ज़ा की समस्या हो जाती है। कई रोगियों को सिर्फ डायरिया या सिर्फ कब्ज़ा रहता है तो कई रोगियों को समय-समय पर ये दोनों समस्याएं हो जाती हैं।

-इसके साथ ही इन रोगियों को पॉटी के साथ म्यूकस आने की समस्या भी होती है। इनकी पॉटी फ्लश में बहुत अधिक चिपकती है, जिस कारण दो से तीन बार फ्लश करने के बाद ही सीट साफ़ हो पाता है।

जरूर लें डॉक्टर की सलाह

-यह और बात है कि आईबीएस के लक्षण बहुत सामान्य होते हैं। लेकिन अगर ये लक्षण लंबे समय तक बने रहें और आप इन्हें लगातार अनदेखा करते रहते हैं तो साधारण-सी दिखनेवाली ये समस्याएं कोलोन कैंसर का कारण बन सकती हैं।