Chinese COVID-19 vaccine

Chinese COVID-19 vaccine candidate appears safe, induces immune response, preliminary study finds (The Tribune: 20201118)


They said the participants had not travelled to areas with high incidence of the disease, and did not have signs of fever at the time of recruitment.

Chinese COVID-19 vaccine candidate appears safe, induces immune response, preliminary study finds
Photo for representation only. — File photo

Results from an early-phase clinical trial of a Chinese vaccine candidate, CoronaVac, revealed that the formulation appears safe and induces an antibody response in healthy volunteers aged 18 to 59 years.

According to the findings of the phase 1/2 randomised clinical trial, published in The Lancet Infectious Diseases journal, the vaccine candidate could induce an antibody response in participants within 28 days of the first immunisation, by giving two doses 14 days apart.

The researchers, including those from the Jiangsu Provincial Center for Disease Control and Prevention in China, also found the optimum dose to generate the highest antibody responses, while taking account of side effects and production capacity.

While the average levels of neutralising antibodies induced by CoronaVac was lower than levels seen in people who have previously had COVID-19, the scientists still believe the formulation could provide sufficient protection against the virus based on their experience with other vaccines and data from animal model studies.
Since the study only included healthy adults aged 18 to 59 years, the researchers said further studies will be needed to test the vaccine candidate in other age groups, as well as in people with pre-existing medical conditions.

"Our findings show that CoronaVac is capable of inducing a quick antibody response within four weeks of immunisation by giving two doses of the vaccine at a 14 day interval," said Fengcai Zhu, joint lead author of the study, from the Jiangsu Provincial Center for Disease Control and Prevention.

"In the longer term, when the risk of COVID-19 is lower, our findings suggest that giving two doses with a one month interval, rather than a two week interval, might be more appropriate for inducing stronger and potentially longer-lasting immune responses," Zhu added.

In the current study, the scientists reported the results of the phase 1/2 clinical trial which included participants aged 18 to 59 years, and only people who did not have any history of infection with COVID-19.

They said the participants had not travelled to areas with high incidence of the disease, and did not have signs of fever at the time of recruitment.

In the first phase, the scientists said 144 healthy volunteers were enrolled, who were split into two groups to receive one of two vaccination schedules—either two injections given 14 days apart, or two injections given 28 days apart.

Within each group, they said the participants were randomly assigned to receive either a low dose of the vaccine, a high dose, or a placebo.

In the phase 1 trial, they said the overall incidence of adverse reactions was similar in the low- and high-dose groups at both vaccination schedules, with the most common symptom being pain at the injection site.

There was one case of severe allergic reaction within 48 hours of receiving the first dose, the scientists said, adding that it could be possibly related to vaccination.

However, they said the participant was treated and recovered within three days, and did not experience a similar reaction after the second dose.

The study noted that phase 2 of the trial was initiated when all participants in phase 1 had finished a 7-day observation period after their first dose.

In this phase, the scientists said 600 healthy volunteers were enrolled in the study, who were separated into two groups for the 14-day and 28-day vaccination schedule, and then randomly assigned to receive either a low dose of the vaccine, a high dose, or placebo.

Citing the limitations of the research, the scientists said the phase 2 trial did not assess T cell responses, which are another arm of the immune response to virus infections.

Between the phase 1 and phase 2 trials, the researchers said there was no difference in reported side effects, however, they said the immune responses were much stronger in the second phase.
"CoronaVac is one of many COVID-19 vaccine candidates that are being explored in parallel. There are a multitude of different vaccine technologies under investigation, each with their own advantages and disadvantages," said Gang Zeng, another co-author of the study from Sinovac Biotech, a biopharmaceutical company based in China.

"CoronaVac could be an attractive option because it can be stored in a standard refrigerator between 2 and 8 degrees centigrade, which is typical for many existing vaccines including flu. The vaccine may also remain stable for up to three years in storage," Zeng said.

However, he added that data from phase 3 studies will be crucial before any recommendations about the potential uses of CoronaVac could be made. PTI

PGI finds abnormal liver profile in Covid-19 patients
Of 152 patients, 89 (58.5 per cent) had abnormal liver tests, among whom 43 (48.31 per cent) had liver injury (The Tribune: 20201118)


In what may be a lesser known fact to many, researchers at the PGI have found that more than half of patients admitted to the hospital with SARS-CoV-2 infection had an abnormal liver function.

The PGI evaluated the liver function test results and inflammatory marker levels along with the medical history obtained from 170 adult patients of both genders with confirmed Covid-19 from March 15 to June 15. All Covid-19 positive patients of 15 years of age and above were included in the study. Patients suffering from chronic liver diseases, alcoholism, hepatitis, pregnant women and children (below 15 years) were excluded from the study.

Key findings

Of 152 Covid-19 positive patients, 89 (58.5%) had abnormal liver tests, of which 43 (48.31%) had liver injury during hospitalisation
Severity in terms of ICU requirement was more pronounced in patients with raised liver enzymes and liver injury
Elderly patients had preponderance towards severe liver injury
SARS-CoV-2 may possibly cause liver damage
The study was conducted by Dr Ram Krishan Saini, Dr Neha Saini, Dr Sant Ram, Dr Shiv Lal Soni, Dr Vikas Suri, Dr Pankaj Malhotra, Dr Jyotdeep Kaur, Dr Indu Verma, Dr Sadhna Sharma and Dr Deepy Zohmangaihi.

Dr Zohmangaihi of the department of bio chemistry, PGI, who is the corresponding author of the study, said: “Through our observation on Covid-19 patients, we have concluded that SARS-CoV-2 may possibly cause liver damage. Not many are aware of this as the primary organ affected by Covid is lungs. Abnormal liver profile was mostly found in Covid patients requiring ICU treatment.”
The findings of the study suggested that of 152 Covid-19 positive patients, 89 (58.5 per cent) had abnormal liver tests, of which 43 (48.31 per cent) had liver injury.

Severity in terms of ICU requirement was more pronounced in patients with raised liver enzymes and liver injury. In patients with normal liver enzymes, only 21.15 per cent required ICU admission while maximum requirement of 52.48 per cent was observed in patients with liver injury.

The study has also found that the elderly and male patients with abnormal liver function were at higher risk of developing severe disease. A noticeable elevated liver enzyme level was found in men (67.4 per cent) compared to women (46.03 per cent). This higher predisposition could be attributed to the higher expression of ACE2 receptors (ACE2 acts as the receptor for the SARS-CoV-2 virus and allows it to infect the cell) in men, as reported in a study at Wuhan.

Elderly patients had preponderance towards severe liver injury as patients above 50 years of age had more of mixed type of liver injury compared to those aged below 50 years.

**Teeth grinding**

*Teeth grinding, facial pain up due to COVID-19 anxiety: Study*

The questionnaire was answered by a total of 1,800 respondents in Israel and Poland (The Tribune: 20201118)


Teeth grinding, facial pain up due to COVID-19 anxiety: Study
Photo for representation only. Source: iStock.

The stress and anxiety experienced by the general population during Covid-19 lockdown brought about a significant rise in facial and jaw pain, as well as jaw-clenching in the daytime and teeth-grinding at night, say researchers.

The study, published in the Journal of Clinical Medicine, also found that women suffered more from these symptoms more than men and that 35 to 55-year-olds suffered most.

"We believe that our findings reflect the distress felt by the middle generation, who were cooped up at home with young children, without the usual help from grandparents, facing financial problems and often required to work from home under trying conditions," said the researchers from Tel Aviv University (TAU) in Israel.

The study examined questionnaires that assessed the presence and possible worsening of these symptoms in the general population during the first Covid-19 lockdown, due to the national emergency and rise in anxiety levels.

The questionnaire was answered by a total of 1,800 respondents in Israel and Poland.
During Israel's first lockdown, the general population exhibited a considerable rise in orofacial pain, as well as jaw-clenching in the daytime and teeth-grinding at night—physical symptoms often caused by stress and anxiety.

The prevalence of symptoms rose from about 35 per cent pre-pandemic to 47 per cent, the prevalence of jaw-clenching in the daytime rose from about 17 per cent to 32 per cent, and teeth-grinding at night rose from about 10 per cent to 36 per cent.

The findings showed that people who had suffered from these symptoms before the pandemic exhibited a rise of about 15 per cent in their severity.

Altogether a rise of 10 to 25 per cent was recorded in these symptoms, which often reflect emotional stress, the team noted. IANS

Who will be the first to get COVID-19 vaccines?
State officials are expected to follow the CDC's guidance as they distribute the first vaccines

No decision has been made, but the consensus among many experts in the US and globally is that health care workers should be first, said Sema Sgaier of the Surgo Foundation, a nonprofit group working on vaccine allocation issues.

An expert panel advising the US Centers for Disease Control and Prevention is also considering giving high priority to workers in essential industries, people with certain medical conditions and people age 65 and older.

Once a vaccine gets a green light from the Food and Drug Administration, the panel will look at clinical trial data on side effects and how people of various ages, ethnicities and health statuses responded. That will determine the panel's recommendations to the CDC on how to prioritise shots.

State officials are expected to follow the CDC's guidance as they distribute the first vaccines.

Vaccine supplies will be limited at first. There won't be enough to protect everyone, yet getting the shots to the right people could change the course of the pandemic.

Many other questions about distribution remain unanswered, Sgaier noted, such as whether to distribute shots equally across the country, or to focus on areas that are hot spots. — AP

**COVID-19 vaccines**

**Who will be the first to get COVID-19 vaccines?**
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*(The Tribune: 20201118)*

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Major measles outbreaks forecast for 2021 due to Covid: Study
Measles is a highly contagious illness caused by a virus that replicates in the nose and throat of an infected child or adult. (The Tribune: 20201118)


Researchers have stressed that major measles outbreaks will likely occur in the wake of the Covid-19 pandemic as early as 2021 due to many missed vaccinations

Measles is a highly contagious illness caused by a virus that replicates in the nose and throat of an infected child or adult.

The study, published in the journal The Lancet, has called for urgent international action to prevent potentially devastating measles epidemics in the coming years.

"Many children have missed out on measles vaccination this year, making future measles outbreaks inevitable," said study lead author Kim Mulholland from the Murdoch Children's Research Institute in Australia and Chair of the World Health Organization's SAGE Working Group on measles and rubella vaccines.

Mulholland said while 2020 had been a quiet year for measles, in part due to travel reductions and national Covid-19 control measures, the economic impacts would lead to many cases of childhood malnutrition.

Malnutrition worsens the severity of measles, leading to poorer outcomes and more deaths, especially in low- and middle-income countries.

"Children who die from measles are often malnourished, but acute measles pushes many surviving children into malnutrition," he said.

"Malnutrition, along with measles-associated immune suppression, leads to delayed mortality, while co-existing vitamin A deficiency can also lead to measles-associated blindness," he warned.

According to the researcher, the coming months are likely to see increasing numbers of unimmunised children who are susceptible to measles.
Many live in poor, remote communities where health systems are less resilient, and malnutrition and vitamin A deficiency are already increasing.

Professor Mulholland said the Covid-19 pandemic had also had a profound effect on the control of vaccine-preventable diseases, with vaccination campaigns paused in the early months of 2020 and routine immunisation services greatly disrupted in many countries.

The WHO estimates that by the end of October 2020, delayed vaccination campaigns in 26 countries have led to 94 million children missing scheduled measles vaccine doses.

"All these factors create the environment for severe measles outbreaks in 2021, accompanied by increased death rates and the serious consequences of measles that were common decades ago," Mulholland said.

"This is despite the fact that we have a highly cost-effective way to prevent this disease through measles vaccination," he added.

"Without concerted efforts now, it is likely that the coming years will see an increase in measles and its severe, frequently fatal, complications," the study author noted.

**Vaccine top Brics agenda**

**Modi slams Pak as terror, vaccine top Brics agenda (Hindustan Times: 20201118)**

https://epaper.hindustantimes.com/Home/ArticleView
New Delhi: As the Brazil-Russia-India-China-South Africa (Brics) grouping adopted a new counter-terrorism strategy on Tuesday, Prime Minister Narendra Modi called for countries that help and support terrorists to be held guilty.

Participating in the virtual Brics Summit chaired by Russian President Vladimir Putin, Modi also called on members of the grouping to back a move by India and South Africa to secure exemption of Covid-19 vaccines from intellectual property agreements.

Multilateralism, Modi said, is facing a crisis and questions are being raised about the functioning of global institutions since they haven’t kept pace with the times and are based on the mindset of 75 years ago.

In a tacit reference to Pakistan-backed terrorism, Modi, who was speaking in Hindi, said: “Terrorism is the biggest problem the world is facing today. We must ensure that countries that help and support terrorists are also held guilty and this problem is dealt with in an organised manner.”

He described the finalisation of the Brics Counter-Terrorism Strategy as an “important achievement” and said India, as the chair of Brics from next year, will take this work forward.

In a subsequent intervention, Modi suggested the national security advisers of Brics states should discuss the formulation of a counter-terrorism action plan.

The Brics Counter-Terrorism Strategy, which will allow member states to work out common measures and coordinate more closely at the UN and other forums and promote the...
implementation of UN’s global counter-terrorism strategy, was adopted at the conclusion of the summit.

Modi’s remarks on terrorism were endorsed by Putin, who said some countries were like the “black sheep of the family” and the world cannot afford any complacency in dealing with problems such as terrorism and the pandemic.

With a group of developing nations led by India and South Africa set to urge the World Trade Organization (WTO) this week to waive patent protections for Covid-19 vaccines so that they become accessible to poor countries, Modi said: “India and South Africa have proposed that Covid-19 vaccines and treatments be exempted from intellectual property agreements. We hope that other Brics countries will support this.”

He added that India’s vaccine production and delivery capacity will be used to benefit humankind. Among Brics countries, Russia has approved a vaccine for the disease although experts say this has been done without adequate testing, and China has granted emergency approval to three vaccines, including one meant for only military personnel. India has three vaccines that are in human trials.

WTO laws allow compulsory licensing, where a member country has the right to licence the use of a patented drug or vaccine to a local company or even an arm of the government even if the patent holder does not agree to this. However, this can be done only under some conditions and will also require the patent holder to be compensated adequately.

Noting that significant geo-strategic changes taking place around the world will impact security, stability and growth, Modi said Brics countries will play an important role in tackling these issues.

The multilateral system is going through a crisis and questions are being raised about the credibility of global institutions since they haven’t changed with the times and are operating with outdated mindsets, he said. Besides the UN Security Council, reforms are needed in the WTO, IMF and WHO, he added.

The Brics countries, with 42% of the global population, will play a key role in post-Covid-19 economic recovery and there is scope to increase mutual trade, Modi said. India’s Atmanirbhar Bharat initiative, which aims to make the country self-reliant and resilient, can be a force multiplier for the post-Covid-19 economy and contribute to global supply chains, he added.

Together, Brics countries account for 33% of global GDP and close to 20% of global trade, with China’s presence in the grouping skewing these numbers.

This was the second time in a week that Modi and President Xi Jinping were on the same virtual platform since the India-China border standoff emerged in the open in May. The theme for the Brics Summit was “Global stability, shared security and innovative growth” and its agenda included global issues such as reforming the multilateral system and measures to mitigate the impact of the pandemic.
Delhi seeks curbs at weddings, markets. Experts hail decisions as cases spike, files with LG for approval (Hindustan Times: 20201118)

https://epaper.hindustantimes.com/Home/ArticleView
New Delhi: The Delhi government wants to reduce the number of people at weddings to 50 and has asked the Union government for powers to lock down markets if they turn into hot spots, chief minister Arvind Kejriwal said on Tuesday — both much-needed curbs as the Capital struggles to tame a rising wave of Covid-19 infections that has pushed hospitals to the brink.

Both the decisions, which were welcomed by experts, have been sent to the lieutenant governor (LG) Anil Baijal for approval.

In the week ending November 14, Delhi recorded previously unseen levels of new cases, and daily fatalities have hovered close to 100 a day. New deaths usually reflect infections that took place three-four weeks ago. New cases declined over the weekend, but this is likely to be misleading since the weekend and two festivals (Diwali and Bhai Dooj) led to fewer tests.
“A few weeks back, when the Covid-19 situation improved in Delhi, the government in keeping with central guidelines issued an order allowing 200 people to attend weddings, up from the limit of 50 before. Today we have decided that the order should be rescinded and the limit of 50 reinstated,” Kejriwal said at a press briefing over video.

“Secondly, we saw in the run-up to Diwali that people were not wearing masks or following social distancing at many markets, which led to a spurt in infections. We have now sent a proposal to the Union government to allow us to assess if people are not following appropriate behaviour at a market and shut it down if we feel it could turn into a hot spot,” he added.

The Union home ministry, which is the main agency coordinating measures in response to the coronavirus pandemic, has ordered regional governments across the country to seek its permission before announcing any lockdowns.

By Tuesday evening, the office of the LG received both files, said a senior official who did not wish to be identified. While the LG is likely to take a call on the wedding-related proposal on his own, he shall be forwarding the market-related proposal to the National Disaster Management Authority (NDMA) and Union home ministry, the official said.

Kejriwal added that he hopes that such measures will not be required since the festival rush is now over at marketplaces. “All governments and agencies are making double efforts to contain the coronavirus infections. But we will not be able to achieve this unless everyone does their part,” the chief minister said in what he described as “an appeal with folded hands”.

The CM’s stance appeared to be at odds with remarks on Monday by Delhi health minister Satyender Jain, who said the Capital’s third wave of infections has peaked and that there will be no new lockdowns. Hours after Kejriwal’s Tuesday briefing, deputy chief minister Manish Sisodia told HT: “We want to clarify that this is not a lockdown. The concept of lockdown has not helped in the fight against Covid-19 in a long run. This is a generic permission we have sought from the central government for emergency situations.”

Alarm at the situation has particularly grown since Sunday, when a high-level review of the situation involving the topmost state and central authorities – including Kejriwal and home minister Amit Shah – found that the situation in Delhi was unlike anything seen across the worst-hit regions in the country. At its peak, according to a presentation by Niti Aayog's VK Paul, Delhi added more infections per million than Maharashtra or Kerala – the two other states hit hard by the pandemic.

Daily hospitalisation data collated by the government showed that the number of people admitted crossed the 9,000-mark for the first time and that from among 3,500-odd ICU and ventilator beds earmarked for Covid-19 patients, only a little over 400 are vacant.

Between November 1 and 16, over 101,000 Covid-19 infections were added to Delhi’s tally. In this period, the city recorded most infections (8,593 on November 11) and deaths (104 on November 12) for a single day.

Health experts have repeatedly said the reinstating of some curbs may be inevitable to tackle this situation.

“The Covid-19 situation in Delhi is in bad shape now. Such restrictions are much needed. A lot of transmission of the virus is likely to have happened during the festive season and the effects will be visible in the weeks ahead. The government should scale up testing, surveillance and containment efforts as well,” said Dr Lalit Kant, former head of epidemiology and communicable diseases at the Indian Council of Medical Research (ICMR).
Since Monday, officials of the Union and Delhi government have been preparing to marshal more resources. “The current 3,500 ICU beds will be increased to 6,000 in the next few days with the help of Delhi government, army and central government. The army-run hospital in Dhaula Kuan will add 537 ICU beds, the central government hospitals 45, and 2,680 beds will be added by the Delhi government, mostly through the order reserving 80% ICU beds in 33 big private hospitals,” Paul said at a press briefing on Tuesday.

Union health secretary Rajesh Bhushan, who was also at the briefing, said: “It has been decided that the number of tests will be doubled in Delhi between 1 lakh and 1.2 lakh. And, a strategy for the same has been devised. However, we need to ensure that the ratio between rapid antigen tests and the RT PCR is right; it should not become lopsided in the favour of rapid antigen tests”.

Two other major steps in the works are a redrawing of the containment strategy and citywide door-to-door canvassing in which officials will urge anyone with symptoms to get tested. According to officials, the specifics of both these measures are likely to be announced in the coming days.

Wedding hall industry representatives said they were worried about the economic fallout of the new curbs.

“The Delhi government’s proposal to restrict the number will ruin us. It is only after the Delhi government increased the number of guests at weddings, we started taking bookings for up to 200 guests. The cards have been distributed and we have called back our workforce from their villages, as we finally had work. This decision will adversely impact the livelihood of 1 million families associated with the wedding business,” said Sandeep Madan, vice president of Community Welfare Banquet Association.

Brijesh Goyal, president of chamber of trade and industry, said: “Traders are anxious in Delhi after Tuesday’s announcement. We will do a video conference on Wednesday with more than 200 market associations in which we will be recording the views and opinions of the traders, which will be sent to the chief minister’s office, and we shall also be discussing measures related to social distancing, Covid-19 appropriate behaviour and precautions that can be taken to avoid temporary shutting down of any market.”

But experts said the measures were required. “The decision on markets looks like a focused restriction measure which is temporary in nature and should not ideally be compared with the lockdown that we have witnessed earlier. There can be an economic impact for a short period, wherever the restrictions are imposed, if approved, but Delhi is also witnessing a health emergency and the Covid-19 numbers are worrisome,” said Dr Jacob John, former head of clinical virology department at Christian Medical College, Vellore.
Delhi is in the grip of a third wave of the coronavirus disease (Covid-19), but what of the rest of India?

On Monday, India recorded 27,968 cases of Covid-19, according to the HT dashboard. Recorded cases typically lag tests by a day, so some credit for the low number of cases should go to the corresponding low number of tests conducted on Sunday (735,551; as compared to an average of 1,098,200 every weekday last week). India conducted only 674,020 tests on Monday, a public holiday in many parts of the country. Not surprisingly, on Tuesday, the country recorded 38,599 new cases. France recorded 27,228 cases on November 15, according to the NYT database. On Monday, the United Kingdom recorded 21,363 cases, Italy 27,352, and the US 166,581.

Despite the temporary anomalies created by low testing over the weekend and on Monday in India, it is entirely possible that the number of daily case numbers in some European countries will overtake that in the country if they continue on their current trajectory. According to the Johns Hopkins Coronavirus Research Center, India and Germany are the only two, among the 10 worst-affected countries currently, whose case trajectory is trending south.

India’s, especially, has been trending south consistently since mid-September.

Between early August and mid-October, India’s daily case numbers (on the boil in that period) were higher than those in the US too. And in absolute terms, India’s numbers are where they were in July.

India’s trajectory presents an interesting visual study — it stayed flat (and this is even more marked when seven-day averages are considered) for almost two weeks in late October and the first half of November. This usually means the end of one wave, and the beginning of the next. Instead, perhaps because of the spate of public holidays that followed — Saturday was Diwali, and Monday was Bhai Dooj, making it a three-day weekend for testing — the numbers have fallen further.

Disregarding this, this columnist is beginning to see the beginning of the second wave in the country. This is an early call (and a worrying one). It is based on data, though. There has been a rise in daily new cases over the past two weeks (again, I’ve disregarded data of the past three days) in Gujarat, Haryana, Himachal Pradesh, Madhya Pradesh, and Rajasthan. Interestingly, three of these states, Gujarat, Madhya Pradesh and Rajasthan, were early hot spots of the coronavirus disease in the country. It stands to reason that if there is a temporal pattern to the trajectory of the pandemic, then these states should register it first.

This prediction comes with a caveat, though, one that has to do with the prevalence of the infection in a region. This is a parameter best captured through widespread antibody testing — popularly called sero surveys in India. Such surveys test for Covid-19 antibodies, and their presence usually indicates exposure to, and therefore, immunity, even if only temporary, from the disease. I say usually because researchers are learning that certain populations or population
segments have antibodies that recognise and fight the Sars-CoV-2 virus without having been exposed to it — one reason proffered by some for low fatality rates in parts of Africa.

Unfortunately, India has been remiss with such surveys. While the Indian Council of Medical Research (ICMR) mandated that each of the 700-odd districts in the country conduct sero surveys regularly, few have done so. The result is a patchwork of data that confuses more than it enlightens.

There is another reason why I think India is seeing the beginning of a second wave, which will become evident within the next fortnight — in countries that have seen second (and in some cases third) waves, these have been preceded by the easing of restrictions, holidays and celebrations that witnessed social gatherings, or large public events. Most parts of India have seen all, or at least some of these, over the past two months and especially in recent weeks.

I’d love to be wrong about this, though.

**Health Care Services**

**Hospitalisations rise to 9k, 88% ICU beds taken**

Less than 7,000 cases recorded three days in a row, mainly due to fewer tests; 9,215 admitted with infection on Tuesday *(Hindustan Times: 20201118)*

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

More than 55% of the total Covid beds in Delhi were occupied on Tuesday. Sanchit Khanna/HT PHOTO

The number of hospitalisations due to the coronavirus disease (Covid-19) reached an all-time high on Tuesday, crossing the 9,000-mark for the first time even as Delhi recorded less than
7,000 cases for three days in a row, mainly because of fewer tests conducted during a long Diwali weekend.

As on Tuesday, 9,215 patients were admitted with the infection at various city hospitals. 6,396 cases were reported with just over 49,000 tests being conducted on Tuesday -- 32,431 rapid antigen and 16,600 of the more accurate RTPCR tests, according to the daily health bulletin released by the Delhi government.

On average, 54,000 tests were being conducted each day before Diwali.

With 99 deaths on Tuesday, Delhi reported more than 90 deaths for six days in a row. With these deaths, the seven-day average case fatality ratio (CFR) – the proportion of people who die among those who test positive – touched 1.65%, the highest since the beginning of August. The total CFR, which had been on the decline, also inched upwards over the last four days and stood at 1.58% on Tuesday.

At its peak, the number of hospitalisations had hit 6,264 during the first surge of infections in June-July and 7,051 during the second surge in September. Delhi health minister Satyendar Jain had on Monday said Delhi has already crossed the peak for the third wave of infections.

With the increase in hospitalisations, more than 55% of the total beds earmarked for the treatment of Covid-19 patients were occupied as on Tuesday evening, according to the Delhi corona app. However, the cause of concern is the number of ICU beds. Over 88% ICU beds were occupied across hospitals on Tuesday evening.

“If the increase in the number of cases continues, there will be a crisis. This is because most of the ICU beds are already occupied. A positivity rate of 13 to 15% means widespread transmission is happening. And, we have everything open other than the schools; the markets have been crowded during the festive season,” said Dr Sanjay Rai, head of the department of community medicine at All India Institute of Medical Sciences (AIIMS).

The current ICU capacity of just over 3,500 beds is likely to go up to 6,000 in the next few days. The army-run hospital in Dhaula Kuan will add 537 ICU beds, the central government hospitals 45, and 2,680 beds will be added by the Delhi government, mostly by reserving 80% ICU beds in 33 big private hospitals.

“The kind of intensity of the pandemic can be dangerous to lives, livelihood and fabric of the society. We as citizens have to play our role. If you see Europe, their beds are getting over again,” said NITI Aayog member Dr VK Paul in a press briefing on Tuesday.

He said Delhi had shown “dramatic improvement” when it came to timely hospitalisation of patients. “Initially, when the pandemic had started – till about June – nearly 60 to 70% of the deaths in hospitals happened within the first 72 hours. Half of these deaths happened within the first 24-hours of admission. In Delhi, there has been a dramatic change since. We are still monitoring the mortality as it shows the efficiency of the system – mobilising patients from home, ambulance service, access to beds, and efficiency of the treatment,” said Dr Paul.

Admitting that private hospitals had played an important role, he said that the 10 inspection committees constituted by the government were to “improve coordination”. “The teams will inspect, see if there are any gaps and address them, and wherever they need help it will be extended. They will also see whether the patients and family satisfied,” he said.
COVID-19 | Vaccine a game-changer but not the end-all of the pandemic: Health Ministry
A medical worker collects a swab sample from a woman for a RT-PCR test for the COVID-19 at a street in New Delhi on November 17. (The Hindu: 20201118)


Situation in Delhi is a matter of concern, says Secretary
Stating that there are five COVID-19 vaccine candidates at different stages of trials in India, two in the third phase, NITI Aayog member (health) Dr. V.K. Paul said on Tuesday India wants to reiterate what the World Health Organisation has said about the vaccine “being a game-changer but not being the end-all of the pandemic”.

He said the vaccine, when it is available, will complement the other tools that already exist to tackle the pandemic.

Health Secretary Rajesh Bhushan said recovered cases in India have now crossed 82.9 lakh.

“The country has a recovery rate of more than 93%. An average 46,701 cases recovered daily in the last week while an average 40,365 new cases were reported daily in the last week. More than 12.65 crore tests were conducted and India is reporting a cumulative positivity rate of 7.01% with daily positivity rate in the last week, of 4.1%,” he said.

Coronavirus India lockdown day 236 live updates

Stating that the situation in Delhi is a matter of concern, the Health Secretary said the testing rate during September (after the cases stabilised) had plateaued and that SOPs weren’t implemented as effectively.

“This will change now as per a detailed plan that has been set in motion for the Capital. As part of COVID-19 appropriate behaviour, people must ensure that if they are having any symptoms then they must get tested. Don’t hesitate to get tested,” he said.

Also speaking at the conference, Dr. Paul said house-to-house surveys will be done in the containment zones in Delhi. “This will also be done in other vulnerable zones.”

The Health Ministry said 75.14% of the new cases have been reported from 10 States/UTs with Delhi seeing a surge in new cases over the last few days. The Capital has reported 3,797 cases in the past 24 hours, followed by West Bengal (3,012 cases). Kerala recorded 2,710 cases. 78.40% of the 449 new deaths are concentrated in 10 States/UTs and more than a fifth, 22.76%
of new fatalities reported are from Delhi (99). Maharashtra reported 60 fatalities followed by West Bengal (53).

It said India has been recording around 30,000 daily new cases for the last two consecutive days. “29,163 cases were reported in the last 24 hours. The country has also seen less than 50,000 daily new cases being registered continuously for the past 10 days. The trend of new daily recoveries exceeding the daily new cases continues with 40,791 cases recovering in the last 24 hours against just 29,163 newly detected cases,” it said. The Ministry said total tests stand at 12,65,42,907.

Naturopathy Day

Naturopathy Day: A good time to discuss this science of healing (The Hindu: 20201118)

https://www.thehindu.com/life-and-style/drugless-healing-naturopathy/article33114563.ece

This drugless form of healing does not use any form of medication. Ahead of Naturopathy Day (November 18), we explore its core concepts:

Bookend between Mahatma Gandhi’s birthday on October 2 and Naturopathy Day on November 18 this year, the National Institute of Naturopathy (NIN), Pune, has been conducting a series of Facebook live sessions to help people understand the principles of the practice.

Gandhi was a proponent: he practised this form of drugless healing himself and often self-experimented, wrote a book called Nature Cure, and helped set up Nisargopachar Ashram at Urulikanchan near Pune that is a naturopathy centre. The invisible letter in AYUSH, because it goes along with yoga, naturopathy hasn’t got the press that Ayurveda has.

Dr Satya Lakshmi, Director, NIN, says, “The idea is to make Mahatma Gandhi’s commitment to nature cure and his approach to health known to people. We thought it hadn’t been given much importance in public discourse.” The institute will release a book on Naturopathy Day titled, Gandhi the Healer, which will be available for free download as an ebook from the NIN website (ninpune.ayush.gov.in). Its contents are culled from various works published by Gandhi.

It is the art and science of healthy living that does not apply any form of medication. “We look at the body holistically, and believe that the accumulation of toxins is the root cause of all diseases. The treatment is detoxification,” says Dr Babina NM, Chief Medical Officer at Jindal Naturecure Institute in Bengaluru.

She says naturopaths believe that the body is made up of panchamahabhoota, the five elements of earth, water, fire, air, space. “So the main treatments correspond to these,” she says. For instance, earth treatments may include mud packs, water treatments may have a hip bath for pelvic disorders, fire treatments may include steam baths and hot oil packs, space treatments will have fasting, while air treatments centre on pranayama. “We believe in the body’s innate capacity to heal itself,” she says. Elimination forms a large part of the treatment, through four elimination organs: the skin, lung, kidney, and colon.
Most facilities insist you spend at least a week there, so you are put through a regimen and get a chance to experience what an ideal lifestyle means for you (since treatment is based on personalisation), so you can go home and practice the same. “Physiological and psychological rest is important during the treatment period,” says Babina, adding that it’s difficult to get that at home.

Naturopathy practitioners are trained through a five and half year BNYS — Bachelor of Naturopathy and Yogic Sciences, though there are also an array of diploma and certificate courses, with the established centres asking for degree course graduates. Most degree programmes have their own entrance exams. “Students study regular MBBS courses like anatomy, physiology, biochemistry, except pharmacology,” says Babina.

Its limitations are for emergency situations, like accidents or a heart attack. “We are only saying medicine shouldn’t become a part of life. We shouldn’t eat out daily and pop a pill,” says Dr Abhishek Devikar, the Medical Director at Nisargopachar Ashram. This focus on lifestyle changes brings many people to naturopathy, including those who are looking at lifestyle-related disorders, weight loss, those for whom all other streams of medicine have failed, and those who want to detoxify after heavy medication (like chemotherapy).

The reasons naturopathy has failed to take off are many, says Dr Devikar, including the lack of a central governing body to regulate the study and practice of the system, and the fact that it has no pharma products to market.

**Vitamin A**

**Cold temperatures, Vitamin A capable of burning fat faster, says study (New Kerala: 20201118)**


New study published in the journal of Molecular Metabolism shows the effects of cold temperatures and Vitamin A are useful for burning the body fat faster.

Both weight gain and weight loss are driven by our hormones. But, shredding fat demands more struggle than that of gain. People who go through strict diets and exercise plans to shred fat may start to clinch the winter season after a new study that found cold temperatures and increased vitamin A encourage burning of fat.

According to a report by Fox News, the journal of Molecular Metabolism explored that cold temperature and vitamin A are capable of converting white fat, storing excess calories to brown fat, which "stimulates fat burning and heat generation."

During the research, cold temperatures were applied to mice, which resulted in increased vitamin A production and higher fat burning.
According to the findings, Vitamin A reserves are mostly stored in the liver and because cold temperatures increase the levels of Vitamin A and its blood transporter, retinol-binding protein, it can convert white to brown fat, thus encouraging faster fat burning.

On the other hand, when 'the vitamin A transporter 'retinol-binding protein' was blocked in mice, the fat did not 'brown' and the mice were unable to protect themselves from the cold, reported by Fox News.

The above-mentioned findings are efficient in providing a significant solution to various weight-gain related problems like obesity.

However, one of the study's lead researchers, Florian Kiefer from the Medical University of Vienna, cautioned against taking large quantities of vitamin A supplements in an effort to lose weight.

Whereas, MedUni Vienna, told Fox News, "Our results show that vitamin A plays an important role in the function of adipose tissue and affects global energy metabolism. However, this is not an argument for consuming large amounts of vitamin A supplements if not prescribed, because it is critical that vitamin A is transported to the right cells at the right time."

While describing the effectiveness of the new technique, she added, "We have discovered a new mechanism, by which vitamin A regulates lipid combustion and heat generation in cold conditions. This could help us to develop new therapeutic interventions that exploit this specific mechanism."

## Asthma

**Night shift workers at high risk of severe asthma: Study (New Kerala: 20201118)**


A major study, researchers have revealed that shift workers, especially those working permanently in the night rotation, may be at heightened risk of moderate to severe asthma. According to the study, published in the journal Thorax, around one in five employees in the developed world works permanent or rotating night shifts.

Shift work causes a person's internal body clock (circadian rhythm) to be out of step with the external light and dark cycle.

"This misalignment is associated with a heightened risk of various metabolic disorders, cardiovascular disease, and cancer," said study authors from University of Manchester in the UK.
Symptoms of asthma, such as wheeze and airway whistling, vary considerably, according to the time of day or night, and the researchers wanted to find out if shift work might also be associated with an increased risk of asthma and/or its severity.

They were also keen to explore how influential chronotype--individual body clock preference for morning or evening activity--and genetic predisposition to asthma might be.

They drew on medical, lifestyle, and employment information supplied between 2007 and 2010 by 286,825 participants in the UK Biobank.

All these participants were aged between 37 and 72, and either in paid employment or self-employed.

Most (83 per cent) worked regular office hours, while 17 per cent worked shifts, around half of which (51 per cent) included night shifts.

Shift patterns comprised never or occasional night shifts; irregular or rotating night shifts; and permanent night shifts.

Compared with those working office hours, shift workers were more likely to be men, smokers, and living in urban areas and in more deprived neighbourhoods. They also drank less alcohol, slept fewer hours, and worked longer hours.

Night shift workers are considered to be 'owls' and generally have poorer health.

Some 14,238 (around five per cent) of all the study participants had asthma and in 4,783 (nearly two per cent) symptoms were moderate to severe (based on their medications).

The researchers compared the effect of working office hours with shift work on asthma diagnosis, lung function, and symptoms of asthma.

There was a 36 per cent increase in the odds of having moderate to severe asthma in permanent night shift workers compared to those working normal office hours.

Similarly, the odds of wheeze or airway whistling were 11-18 per cent higher among those working any of the three shift patterns, while the odds of poorer lung function were around 20 per cent higher in shift workers who never or rarely worked nights and those working permanent night shifts.

**Pregnancy**

**Every pregnancy helps reduce endometrial cancer risk: Researchers (New Kerala: 20201118)**

Each additional pregnancy a woman experiences, including those that result in miscarriage, can help reduce her risk of developing endometrial cancer, new QIMR Berghofer research has found. The research led by the head of QIMR Berghofer Medical Research Institute's Gynaecological Cancers group, Professor Penelope Webb, found the risk continued to drop with each pregnancy, even up to as many as eight pregnancies.

Professor Webb said the study findings provided new insight into endometrial cancer, which is estimated to be the 5th most common cancer diagnosed among Australian women.

"It's well known that having a full-term pregnancy reduces a woman's risk of developing endometrial cancer, but our research has shown that not only does each additional full-term pregnancy reduce that risk by about 15 per cent, the reduction continues for up to at least eight pregnancies," Professor Webb said.

"We have also clearly shown for the first time that pregnancies that end in a miscarriage also reduce risk of endometrial cancer by about seven per cent," the professor added.

"Unlike many other cancers, endometrial cancer rates are increasing so it is vital that we get a better understanding of the factors that affect a woman's risk. If scientists can understand what drives endometrial cancer, there's hope that we may be able to prevent women from developing it in the future."

The researchers examined pregnancy data from 30 studies conducted around the world, including Australia, held by the Epidemiology of Endometrial Cancer Consortium. This included 16,986 women with endometrial cancer and 39,538 women who have never had the disease.

First author, Associate Professor Susan Jordan who is now at The University of Queensland School of Public Health, said the study findings raised questions about the commonly held belief that hormone levels in the last trimester provide the protective effect against women's cancers.

"Our analysis in this large group of women shows that while a full-term pregnancy is associated with the greatest reduction in risk for endometrial cancer, even pregnancies that end in the first or second trimester appear to provide women with some protection," Associate Professor Jordan said.

"This suggests that very high progesterone levels in the last trimester of pregnancy is not the sole explanation for the protective effect of pregnancy. If women who experience miscarriage have a seven to nine per cent reduced risk of endometrial cancer, then early pregnancy factors may also be playing a protective role against this disease."
Physical activity

Exercised over nothing: Masks don't impair lung function during physical activity (New Kerala: 20201118)


Wearing a facemask helps limit the spread of COVID-19 by reducing respiratory droplets and aerosols spewed into the air when people breathe, talk, laugh, sneeze, or cough, a new study suggests.

But the physical barrier created by masks has prompted concerns that they might impair the cardiopulmonary system by making it harder to breathe, by altering the flow of inhaled oxygen and exhaled carbon dioxide, and by increasing dyspnea -- a medical term that describes shortness of breath or difficulty breathing, especially during physical activity.

In a new study, published in the Annals of the American Thoracic Society, a team of American and Canadian researchers concluded that while sensations of dyspnea might increase, there is little empirical evidence that wearing a facemask significantly diminishes lung function, even when worn during heavy exercise.

"There might be a perceived greater effort with activity, but the effects of wearing a mask on the work of breathing, on gases like oxygen and CO2 in blood or other physiological parameters are small, often too small to be detected," said the study's first author Susan Hopkins, MD, PhD, professor of medicine and radiology at University of California San Diego School of Medicine.

"There's also no evidence to support any differences by sex or age in physiological responses to exercise while wearing a facemask," added Hopkins, who specializes in exercise physiology and the study of lungs under stress.

The single exception, the authors note, maybe persons with a severe cardiopulmonary disease in which any added resistance to breathing or minor changes in blood gases could prompt dyspnea great enough to affect exercise capacity.

"In such cases, these individuals might feel too uncomfortable to exercise, and that should be discussed with their doctor," Hopkins said. "However, the fact that these individuals are at great risk should they contract COVID-19 must also be considered"

The researchers came to their conclusions following a review of all known scientific literature published that examined the effects of various facemasks and respiratory loading devices on physiological and perceptual responses to physical activity.

These studies assessed multiple factors, such as work of breathing (the quantified energy expended to inhale and exhale), arterial blood gases, effects on muscle blood flow and fatigue, cardiac function, and flow of blood to the brain.

For healthy persons, the effects of wearing a mask on these physiological markers were minimal, no matter what type of mask was worn or the degree of exercise. The authors also
said age played no significant influencing role among adults. Gender differences were deemed inconsequential.

"Wearing a facemask can be uncomfortable," said Hopkins. "There can be tiny increases in breathing resistance. You may re-inhale warmer, slightly enriched CO2 air. And if you're exercising, the mask can cause your face to become hot and sweaty.

"But these are sensory perceptions. They do not impact cardiopulmonary function in healthy people. So while dyspnea might be increased with a mask, you have to weigh that against the reduced risk of contracting COVID-19, knowing that the physiology is essentially unchanged," added Hopkins.

Exercised over nothing: Masks don't impair lung function during physical activity

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Obese people

Obese people found to be at increased risk of Covid-19 (New Kerala: 20201118)


A new study led by researchers at Queen Mary University of London uses a novel approach to investigate the effects of cardiovascular risk factors on the risk of COVID-19 infection. Several observational studies have reported the link between cardiovascular risk factors (such as obesity, high blood pressure, diabetes and high cholesterol) and COVID-19 severity. However, these studies could not ascertain the cause and effect relationship due to the observational design.

The new study, published in the science journal Frontiers in Genetics, used a novel approach called 'Mendelian Randomisation', which leveraged on the individual genetic information, to investigate the effects of cardiovascular risk factors on the risk of COVID-19 infection.

Lead author Dr Nay Aung from the Queen Mary University of London said "Our results show that individuals with high body mass index (BMI), a marker of obesity, and high low-density lipoprotein (LDL) cholesterol (also known as 'bad' cholesterol) are at an increased risk of getting COVID-19. Other cardiovascular risk factors (high blood pressure and diabetes) do not appear to elevate the COVID-19 risk.

"Our findings support the use of BMI and LDL cholesterol as important metrics alongside other known characteristics (such as age and ethnicity) in the risk assessment of vulnerability to COVID-19 infection."
The findings may have an impact on public health policy, whereby those who fall in the at-risk obese category or those with extreme hyperlipidemia in the general population may require more rigorous social distancing or shielding.

Furthermore, studies assessing the role for cholesterol modification therapy during illness or hospital admission could be undertaken to assess potential impact on outcomes.

**WHO**

**WHO to unveil strategy against cervical cancer, India on boar (New Kerala: 20201118)**


The World Health Organisation is set to launch a global strategy to eliminate the menace of cervical cancer, which is the second most common cancer in the Indian female population. "On November 17, following the close of the 73rd World Health Assembly, WHO will mark this historic announcement and officially launch the elimination strategy. The moment has arrived for an ambitious, inclusive strategy to accelerate eliminating cervical cancer as a public health problem," it said.

A WHO official told IANS that the strategy which would be unveiled on Tuesday was being prepared since 2018 under guidance of the organisation's Director General, Dr Tedros Adhanom Ghebreyesus, and has been finalised after many countries agreed to it.

The WHO has recommended targets for 2030 to accelerate the progress towards elimination of cervical cancer where it suggested the countries to strive to reach the goals of vaccinating 90 per cent of girls of 15 years of age with HPV vaccine and screen 70 per cent of women at the age of 35 and 45 years.

The All India Institute of Medical Sciences (AIIMS) informed that the Union Health Ministry had launched a screening programme for cervical cancer.

"The present strategy of visual inspection with acetic acid (VIA) has been rolled out in many districts. However, training of health workers, ensuring linkages between primary, secondary and tertiary level centres and access to services have posed challenges that are unique to every state. Public private partnerships are ongoing to further capacity building and implementation research," an AIIMS spokesperson said.

The AIIMS also said that an indigenous HPV vaccine has been developed which is in Phase-3 trials now and is expected to be available in the near future.
"The vaccine is developed by the Serum Institute of India in partnership with the Department of Biotechnology. It is expected to roll out by next year," an AIIMS official told IANS.

The vaccine was launched back in 2006 and available globally. In India, it is available since 2009. "However, despite its availability, the vaccine is not taken up very well in India. Even the production is not adequate," said Prof Neerja Bhatla, of AIIMS' Department of Obstetrics and Gynaecology.

She also hoped that the vaccine would be included in the national programme once its indigenous version is rolled out. "Let's hope it (vaccine) gets ready by the next year," Bhatla said.

The current rate of disease burden is 14 patients per 100,000 population. "Our goal should be reduce it to less than 4," she added.

Bhatla also informed that the cancer is mostly seen after 50 but the pre-cancer comes 10 to 15 years before. "So it will be prudent to get screened after 30 year of age so that the cancer is detected timely and treated," she added.

Meanwhile, the AIIMS also said that it will hold a workshop with stakeholders on the launch of global strategy against cervical cancer. "The deliberations will focus on new developments in cervical cancer elimination that are changing the landscape by including diverse stakeholders in prevention, treatment and palliation," it said.

**New Coronavirus Cases (Hindustan: 20201118)**

[https://epaper.livehindustan.com/imageview_460246_85479742_4_1_18-11-2020_2_i_1_sf.html](https://epaper.livehindustan.com/imageview_460246_85479742_4_1_18-11-2020_2_i_1_sf.html)
पहली बार
अस्पतालों में भर्ती मरीजों की संख्या नौ हजार पार
दिल्ली में कोरोना के मामले तेजी से बढ़ रहे हैं। इससे अस्पतालों में भर्ती मरीजों की संख्या में इजाफा हुआ है। पिछले एक सप्ताह में अस्पतालों में भर्ती मरीजों की संख्या 10% तक बढ़ी है। मंगलवार शाम को दिल्ली के अस्पतालों में भर्ती मरीजों की संख्या 9200 से अधिक हो गई। शाम 5 बजे तक दिल्ली के अस्पतालों में 9256 कोरोना मरीज भर्ती थे। यह पहली बार है जब दिल्ली के अस्पतालों में इतनी बड़ी संख्या में कोरोना मरीज भर्ती हैं।

7 दिनों में 10 फीसदी बढ़े मरीज
दिल्ली के अस्पतालों में भर्ती मरीजों की संख्या में पिछले 7 दिन में 10 फीसदी का इजाफा हुआ है। दिल्ली में 10 नवंबर तक कुल 8382 कोरोना मरीज भर्ती थे। एक हफ्ते बाद 17 नवंबर तक संख्या में 874 का इजाफा हुआ है। कोरोना के भर्ती मरीजों की संख्या मंगलवार तक 9256 हो गई।

3166 की हालत गंभीर
दिल्ली के अस्पतालों में भर्ती 9256 मरीजों में से एक तिहाई मरीज गंभीर हालत में हैं। मंगलवार शाम तक 3166 कोरोना पीड़ित मरीज गंभीर थे, जिन्हें आईसीयू और वेटलेटर पर रखा गया है। दिल्ली कोरोना एच के मुख्य, राजधानी में 1209 कोरोना पीड़ित मरीज वेटलेटर पर हैं और 1957 आईसीयू में हैं। सात दिन पहले दिल्ली में 2752 मरीज गंभीर थे जिन्हें आईसीयू और वेटलेटर की लागत थी।
राहत : राजधानी में 41 दिनों बाद सांस लेने लायक हुई हवा

नई दिल्ली | विशेष संदर्भाता

दिल्ली के दिल्ली की प्रदूषण के नड़ते जा रहे हवा की बेहतरी के बजाय से 41 दिन बाद राजधानी में हवा सांस लेने लायक हुई है। राजधानी की दिल्ली की बादुं गुणवत्ता सूचकांक 171 दर्ज किया गया। इससे एक दिन पहले सीमावर को बादुं गुणवत्ता सूचकांक 221 दर्ज किया गया था। यहाँ बुधवार दिल्ली की बादुं गुणवत्ता फिर खराब से बेहतर खराब की पृष्ठ में पहुंचने की सम्भावना है।

राजधानी दिल्ली की बादुं गुणवत्ता दिवाली के बाद गम्भीर खराब पृष्ठ में पहुंचने की संभावना है। जिससे तहत दिल्ली का बादुं गुणवत्ता सूचकांक शांति को 414 तो सर्वश्रेष्ठ को 435 पर दर्ज किया गया था। दिल्ली की गम्भीर खराब पृष्ठ में पहुंचने का दर्जा डर्ज किया गया है।

निगम बैठक में छाया रहा गुड़गांव

नई दिल्ली (प्र.सं.)। दिल्ली निगम में निगम सदन की बैठक में प्रदूषण के बढ़ते स्तर का मुख्य घोषणा किया। पश्चिम विश्व के पर्यावरण व परिवेश के संबंध में भागीदार के रूप में हवा की प्रदूषण का नियंत्रण किया जा सकता है।

6 अक्टूबर को एम्स्वाई 178 था : केंद्रीय प्रदूषण नियंत्रण बोर्ड (सी.पी.बी.) ने सीमावर को बादुं गुणवत्ता सूचकांक 221 पर दर्ज किया था। जो मंडलवादी को 171 पर दर्ज किया था। बादुं गुणवत्ता मापन के पैमाने के तहत 100 से 199 तक के सूचकांक को मुख्य खंड में समाप्त करने के लिए 2 अगस्त को सूचकांक 178 पर दर्ज किया गया था।

पड़ोसी राज्यों की लापरवाही: आतिथी

नई दिल्ली (व.सं)। अब अधिनियम ने उत्तर भारत के राज्यों से हां उत्तर प्रदेश के लिए राजस्थान व हरियाणा की तरफ सीमा पर वायु प्रदूषण को जबरदस्ती ठहराया है। पार्टी ने दोनों राज्यों के पुरुषों के बीच अपने आतिथ्य के लापरवाही का हस्ताक्षर कराया है।