Brain cancer

Brain cancer linked to tissue healing (The Tribune: 20210106)


Researchers have found that the healing process that follows a brain injury -- from trauma to infection and stroke -- could spur tumour growth.

"Our data suggest that the right mutational change in particular cells in the brain could be modified by injury to give rise to a tumour," said Peter Dirks, Professor at the University of Toronto.

The finding, published in the journal Nature Cancer, could lead to a new therapy for glioblastoma patients who currently have limited treatment options with an average lifespan of 15 months after diagnosis, the researchers said.

"Glioblastoma can be thought of as a wound that never stops healing." Dirks said.

"We're excited about what this tells us about how cancer originates and grows, and it opens up entirely new ideas about treatment by focusing on the injury and inflammation response," he added.

The researchers applied the latest single-cell RNA sequencing and Machine Learning (ML) technologies to map the molecular make-up of the glioblastoma stem cells (GSCs), which Dirks' team previously showed are responsible for tumour initiation and recurrence after treatment.

They found new sub-populations of GSCs that bear the molecular hallmarks of inflammation and which are commingled with other cancer stem cells inside patients' tumours.
It suggests that some glioblastomas start to form when the normal tissue healing process, which generates new cells to replace those lost to injury, gets derailed by mutations -- possibly many years before patients become symptomatic, Dirks said.

Once a mutant cell becomes engaged in wound healing, it cannot stop multiplying because the normal controls are broken and this spurs tumour growth, according to the study.

The team collected GSCs from 26 patients' tumours and expanded them in the lab to obtain sufficient numbers of the rare cells for analysis. Almost 70,000 cells were analyzed by single-cell RNA sequencing, which detects what genes are switched on in individual cells -- an effort led by Laura Richards, a graduate student in Pugh's lab.

The data confirmed extensive disease heterogeneity, meaning that each tumour contains multiple sub-populations of molecularly distinct cancer stem cells, making recurrence likely as existing therapy is unable to wipe out all the different sub-clones.

A closer look revealed that each tumour has either of the two distinct molecular states - termed "Developmental" and "Injury Response" - or a gradient between the two.

According to the researchers, the developmental state is a hallmark of the glioblastoma stem cells and resembles that of the rapidly dividing stem cells in the brain before birth.

But the second state came as a surprise. The researchers termed it "Injury Response" because it showed an upregulation of immune pathways and inflammation markers such as interferon and TNFalpha, which are indicative of wound healing processes.
Brown fat may protect against cardiac, metabolic conditions (The Tribune: 20210106)


Brown fat may protect against cardiac, metabolic conditions

For representation only. Photo credit: iStock

People with detectable brown fat are less likely to suffer cardiac and metabolic conditions ranging from Type-2 diabetes to coronary artery disease, a new study suggests.

Brown fat, also called brown adipose tissue, helps maintain your body temperature when you get too cold. Unlike white fat, which stores calories, brown fat burns energy and scientists hope it may hold the key to new obesity treatments.

"For the first time, it reveals a link to lower risk of certain conditions. These findings make us more confident about the potential of targeting brown fat for therapeutic benefit," said Paul Cohen, Assistant Professor at The Rockefeller University Hospital in the US.

The study, published in the journal Nature Medicine, confirms and expands the health benefits of brown fat suggested by previous studies.

For the study, the researchers reviewed 130,000 PET scans from more than 52,000 patients and found the presence of brown fat in nearly 10 per cent of individuals.

Several common and chronic diseases were less prevalent among people with detectable brown fat. For example, only 4.6 per cent had Type-2 diabetes, compared with 9.5 per cent of people who did not have detectable brown fat. Similarly, 18.9 per cent had abnormal cholesterol, compared to 22.2 per cent in those without brown fat.

Moreover, the study revealed three more conditions for which people with brown fat have lower risk: hypertension, congestive heart failure, and coronary artery disease -- links that had not been observed in previous studies.

Another surprising finding was that brown fat may mitigate the negative health effects of obesity. In general, obese people have increased risk of heart and metabolic conditions; but the researchers found that among obese people who have brown fat, the prevalence of these conditions was similar to that of non-obese people.

"It almost seems like they are protected from the harmful effects of white fat," said Cohen.
The role of brown fat is more mysterious in other conditions like hypertension, which is tightly connected to the hormonal system.

"We are considering the possibility that brown fat tissue does more than consume glucose and burn calories, and perhaps actually participates in hormonal signalling to other organs," the researcher said.

The team plans to further study the biology of brown fat, including by looking for genetic variants that may explain why some people have more of it than others -- potential first steps toward developing pharmacological ways to stimulate brown fat activity to treat obesity and related conditions.

COVID-19 variant

England in lockdown: On rapid spread of COVID-19 variant (The Tribune: 20210106)


The rapid spread of the new COVID-19 variant should alert other countries to remain vigilant

In a bid to control the spread of the highly transmissible new COVID-19 variant (VOC 202012/01), the U.K. announced on Monday a fresh lockdown in London and southeast England, which is expected to be in force till mid-February. The decision comes after much dithering; the scientific advisory panel had recommended days before Christmas that the government consider a national lockdown, including shutting down educational institutions. As on January 4, the U.K has reported 2.7 million cases and over 75,500 deaths, the second-highest toll in Europe. More than 50,000 new cases have been reported daily since December 29, 2020, with a peak of nearly 59,000 cases on January 4 and over 400 deaths daily. On Monday, more than 26,000 COVID-19 patients were admitted in hospitals, an increase of 30% from the previous week. Though the new variant does not cause increased disease severity or mortality, a surge in cases and hospitalisation can lead to more deaths. It is more transmissible, the reason why the reproduction number (number of people a person can infect) is 1.5-1.7; the spread is considered to be under control when the reproduction number is less than 1. Based on an analysis of cases and genome sequences of nearly 44,500 samples collected from England between September 21 and December 13, it was found that even during the previous lockdown, the new variant spread in many locations. This even as fresh cases were generally dropping due to reduced spread of the then dominant strain.

There is evidence that the earlier lockdown was effective in containing the previously predominant strain, suggesting that the new variant grew in absolute terms. The rapid spread of the new variant even during the previous lockdown might not reflect a general failure of
control measures but highlights the inherent nature of the new variant to rapidly spread given its higher transmissibility. That areas with slower baseline virus spread also reported a slightly reduced spread of the new variant suggests that it is indeed possible to reduce if not suppress the transmission of the new variant if the lockdown is stricter and compliance is better. It is for this reason that unlike in the previous lockdown, schools and universities too are to be closed now. The new variant appears to affect a greater proportion of individuals under 20 years. The selective spread among the young might probably be more because educational institutions were open during the previous lockdown than due to the inherent nature of the virus. Since a resurgence of the new variant is likely when the lockdown is lifted, the focus is on accelerating vaccine roll-out so that much of the population is protected and transmission is cut. The spread of new variants should alert other countries, particularly South Africa where a problematic mutation has been found, to remain vigilant.

**Covid vaccination**

**Delhi Police register 60,000 staff for Covid vaccination (Hindustan Times: 20210106)**

https://epaper.hindustantimes.com/Home/ArticleView

On December 28, staff had been asked to update their personal details and list comorbidities; process likely to be completed in the next two days

7,612 personnel in total so far have been infected, show statistics shared by the police department on January 1. Sanchit Khanna/HT PHOTO

Delhi Police on Tuesday said they had completed the registration and updating the personal details of nearly 60,000 personnel of the force so far, with the process for the remaining 20,000 staff likely to be completed in a day or two.

The registration and details update drive by the city police for their personnel, who are among the list of front line workers, was started last week following chief minister Arvind Kejriwal’s announcement that the Delhi government had identified 5.1 million people who will be the first to get the Covid-19 vaccine shots.

On December 28, special commissioner of police (operations) Muktesh Chander, who is the Covid-19 nodal officer for Delhi Police, had issued a notice along with the declaration form, asking all police personnel to update their age, mobile numbers and place of posting, apart from details of one or more comorbidities that they may be suffering from.

“The updated data of 70-75 % personnel from various departments has been received so far. We are expecting to complete the entire process by Wednesday. The data is now being uploaded on intraDP, the internal network of the Delhi Police,” said special CP Chander,
adding that the compiled list will be uploaded on the government’s Covid-19 vaccination portal.

About the process of vaccination, the special CP said that the personnel would receive SMS on their registered mobile numbers, asking them to be present at the vaccination centre nearest to their place of posting on the day they are called on.

At least 32 Delhi Police personnel have lost their lives due to Covid-19 since May last year, while 7,612 personnel in total so far have been infected, show statistics shared by the police department on January 1.

A senior police officer, associated with the drive, said that the registration and update drive was scheduled to be completed by January 3 (Sunday), since the police department already maintains a record of the details of all their staff including their age, mobile numbers and their current place of postings.

“However, the process got delayed because many personnel had changed their mobile numbers and had not got them updated on the main record book maintained by the establishment branch. Such personnel were directed to get their new contact numbers updated immediately,” the officer said.

“Since the personnel have also been given a declaration form, asking them to mention the comorbidities they are suffering from, the exercise would also help us maintain a database of health issues of police staff and decide their nature of job and place of postings accordingly,” said another police officer.

Police step up security at vaccine centres

Anticipating that people, who are not being included in the first phase of vaccination, may turn up at centres and insist on getting the Covid-19 shots, adequate security arrangements is being put in place. Between 5 and 10 personnel will be deployed at each vaccination centre, depending upon how big the centre is and the number of people arriving there for vaccination, senior officials said.

The police have already started deploying personnel at the 600 plus vaccines storage centres, where arrangements for storage by the Delhi government is on in full swing.

“As of now two-three personnel remain deployed round-the-clock at each storage centre. The number may be increased once the storage of the vaccines starts,” said deputy commissioner of police (south) Atul Kumar Thakur.
**Covid vaccine**

**Covid vaccine dry run to be held at eight centres today (Hindustan Times: 20210106)**

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

New Delhi : Delhi has prepared for another round of dry runs for coronavirus disease (Covid-19) vaccination drive at several centres run by the municipal corporations as the city reported fewer than 1,000 cases of the viral infection for the twelfth day in a row.

On Tuesday, the city added 442 new cases of Covid-19 to its tally, taking the total to over 627,000 cases so far. Another 12 deaths reported in the daily health bulletin took the toll to 10,609.

With few cases even as the city conducted almost 80,000 tests, the positivity rate – proportion of samples that return positive among total tested – to 0.55%. The positivity rate has remained below 1% for nine days now indicating that the spread of the infection is in control.

This comes even as the city has reported 13 cases of infections with the new UK variant, eight of whom are Delhi residents. The new variant has at least 23 mutations, one of which is in the receptor binding domain of the spike protein that is used by the virus to enter the human cells. Experts believe that the new variant is 70% more transmissible that the ones currently in circulation, sparking fears of a surge again.

The number of people hospitalised with the infection has remained below 2,000 for three days now for the first time since the numbers started increasing in May-end.

The vaccination dry run will be held on Wednesday at Hindu Rao hospital and Kasturba hospital of the north corporation and six polyclinics and maternal and child welfare centres under the South Corporation in Hari Nagar, Madipur, Bijwasan, Srinivas Puri, Fatehpur Beri, and Defence Colony.

The dry run helps in addressing any functional issues that might arise when the actual vaccination drives begin. Two vaccines – by Serum Institute of India and Bharat Biotech – have received emergency use authorisation from the country’s apex drug regulator and the Union health ministry plans to roll them out within ten days.
Coronavirus can be transiently airborne but preventive measures can keep one safe, says a study by CSIR-Centre for Cellular and Molecular Biology (CCMB), Hyderabad and CSIR-Institute of Microbial Technology (IMTech), Chandigarh.

The two institutes on Tuesday released data on the air-borne nature of coronavirus, SARS-CoV-2. Scientists have worked with three hospitals each in Hyderabad and Chandigarh to find if the virus particles can be found in air samples in the hospital wards. They used an air sampler that can collect the virus particles, and then looked for their presence using RT-PCR.

"In this study, the virus was found in air samples from Covid-19 wards from hospitals but not from non-COVID-19 wards. This suggests that the demarcation of hospital zones has been an effective strategy. The study also showed the chances of picking up SARS-CoV-2 in air is directly related to number of Covid-19 positive cases in the room, their symptomatic status and the duration of exposure."

"When Covid-19 individuals spent longer hours in a room, the virus is found in air for more than 2 hours even farther than 2 metres from their seating places. But for asymptomatic cases, they showed the virus does not spread farther from them when they are seated in a room without perceived air flow due to a fan or AC," it said.

"Till the vaccines are available, social vaccine that is wearing mask is the best prevention," said Dr Sanjeev Khosla, Director, IMTech.

"All these findings do show that the coronavirus can stay in air for some time. But they also strengthen the importance of Covid-19 preventive guidelines that we already have in place to curb this pandemic. If we ensure that we follow hygiene protocols such as regular hand washing, using masks effectively and preventing symptomatic people from public mixing, we can start getting back to normalcy more comfortably. Detecting and isolating the positive cases early on can help prevent the spread among other family members in a home setting too," said Dr Rakesh Mishra, Director, CCMB and also the corresponding author on this study.
24 घंटे में 16,375 नए केस सामने आए, 56 फीसदी सक्रिय घड़ों में उपचाराधीन सुधार: कोरोना के मामले चह माह बाद सबसे कम
बहन दिशा। विशेष संवाददाता
भारत में छह महीने से अधिक समय बाद एक झिंक में समस्त कम 16,375 नए मामले सामने आए हैं। देश में संक्रमण के मामले बढ़ कर संग्रहालय को 1,03,56,644 हो गए। करीब 201 और लोगों की मौत के बाद मुद्रित संख्या बढ़कर 1,49,850 हो गई।

देश में साफ़ मरीजों की संख्या लगभग घट गई है तथा मौत आसमान में ऐसे रोगीयों की संख्या घटकर लाख से कम है। साफ़ मरीजों में से 44 हजार सी ही अपनान्त में भागे हैं। जबकि 56 फीसदी में नमूनों में सक्रिय हैं और वर्तमान में ही विश्वसनीय विश्लेषण हैं।

केएनयू स्वास्थ्य संस्था साइबर स्थान दुर्गम ने चिह्नित कि साफ़ मरीजों की संख्या सितंबर में 10 लाख में जो अब हाई लाख से नीचे आ गई है। उन्होंने कहा कि कोरोना की कुल संक्रमण दर 5.87 हो गई। जबकि बिहार में एक सप्ताह की संक्रमण दर देखी तो यह 1.97 दर है। 123 दिनों से अब तक संक्रमण दर तीन फीसदी से नीचे बना हुआ है।
स्वदेशी कोवैक्सीन लोगों की अनुमति से ही लगेंगे: आईसीएमआर
नहानागी से जंगः स्वास्थ्य सविधा ले कहा-सरकार से मंजूरी मिलते ही शुरू हो जाएगा अभियान
चंददिनों में टीकाकरण के आसार

बाहर तिलक | मित्र भोटाना
केबीडी स्वास्थ्य सर्वेक्षण राजस्थान के मंत्री ने मंजूरी दी। तीनों मंजूरी के समक्ष वा कोरोना के ठीक के मंजूरी दी। धेरे के ठीक के अभियान के समय लागू नहीं रहेगी। इस प्रकार स्थायी अभियान के समय लागू नहीं होगी।

सभी प्रतिभाजाओं के मंजूरी के ठीक समय से भर्ती अभियान के समय लागू नहीं होगी।

बॉर्डिया से बाहर लोगों के लिए तारदांता जन
नीति अभियान के समय प्रदेश के ठीक तो लागू नहीं होगी। इस प्रकार स्वास्थ्य सर्वेक्षण के समय लागू नहीं होगी।

बिल बोल्टस, इंडियान में नोकरी की तलाश
भारत में दो टीके की मंजूरी दी। तीनों मंजूरी के समय लागू नहीं होगी। इस प्रकार स्वास्थ्य सर्वेक्षण के समय लागू नहीं होगी।
अध्ययन बताते हैं कि हार्ट अटैक के जोखिम को कम कर सकता ऑलव ऑयल, जानिए कैसे (Hindustan: 20210106)

सदियों में जैतून के तेल का सेवन करने से आपको अपने दिल को स्वस्थ रखने में मदद मिल सकती है, चलिए हम आपको बताते हैं कि कैसे सदियों में हार्ट हेल्थ के लिए फायदेमंद है जैतून का तेल।

क्या कहती है स्टडी?

अप्रैल 2020 में प्रकाशित 24 वर्षों के एक बड़े अध्ययन में 61,181 महिलाएं और 31,797 पुरुष शामिल थे। जिसमें यह दिखाया गया कि जैतून के तेल का सेवन दिल रोग के जोखिम को कम करता है। कम जैतून के तेल के सेवन के साथ समूह की तुलना में उच्च जैतून के तेल सेवन समूह में 18% कम कोरोनारी दिल रोग था।

शोधकर्ताओं ने 7 ग्राम से अधिक मार्जीन, मक्खन, मेयोनेज़, या डेयर वसा प्रति दिन उच्च वसा वाले भोजन के रूप में खाने वाले किसी भी व्यक्ति को लेबल किया। जब लोगों ने अस्वस्थ वसा के केवल 5 ग्राम प्रति दिन जैतून के तेल से बदल दिया, तो कोरोनारी दिल रोग के जोखिम में 7% की कमी आई।

पॉलफेनोल दिल रोग के जोखिम को कम करता है

अन्य अध्ययनों से पता चलता है कि जैतून के तेल में पॉलफेनोल यौगिक होता है, यह तलव दिल की रक्षा करते हैं। पॉलफेनोल्स यौगिकों का एक समूह है जो दिल के दौरे और स्ट्रोक की दर को कम करता है।

जैतून के तेल में अनसैचुरेटेड फैटी एसिड होते हैं मौजूद

टोरंटो, कनाडा के सेंट माइकल हॉस्पिटल में हुए शोध में पता चला है कि रक्त में प्रोटीन, अपोलीप्रोटीन A-IV (Apo A-IV) महत्वपूर्ण था। यह प्लेटेट एक्टिवेटर और फॉक्स की सुधारक कार्य करता है। जब आप जैतून के तेल के साथ भोजन करते हैं, तो आपका Apo A-IV स्तर ऊपर चला जाता है। यह कुछ समय के लिए आपके प्लेटेट्स को स्थिर करता है।

नतीजतन, कोई भी व्यक्ति जो जैतून के तेल के साथ भूमध्य आहार (Meditarayan diet) का सेवन करता है, उन में दिल के दौरे और स्ट्रोक का जोखिम कम होता है।

पॉलफेनोल और अनसैचुरेटेड फैटी एसिड

अन्य शोधों से पता चला कि जैतून के तेल में पॉलफेनोल्स और असंतृत फैटी एसिड मौजूद होते हैं, जो लोगों को दिल के दौरे और स्ट्रोक से बचाता है। जब आप जैतून के तेल का उपयोग मेडिटरयन डाइट के साथ करते हैं, जिसमें बुध सारी सब्जियां होती हैं, तो आप संबंधियों के बायो फैटेसिक्स के साथ
जैतून के तेल के सुरक्षात्मक प्रभाव को बढ़ाते हैं। जिससे दिल के दौरे और स्ट्रोक का बहुत कम जोखिम होता है।

जैतून के तेल को अपने आहार में शामिल करने का यह एक बड़ा कारण हो सकता है। क्या आप नहीं चाहेंगी कि इस कड़कती सर्दी में आप अपने परिवार को यह हेल्दी निफ्ट दें?

WHO

सावधान - ब्रिटेन के खतरनाक नए वेरएंट की दुनिया के 41 देशों में दस्तक, WHO ने किया खबरदार (Dainik Jagran: 20210106)


क्या आप भी लंदन जाने का प्लान बना रहे हैं तो ठहरिए। यह खबर आपके लिए उपयोगी हो सकती है। कोरोना का खतरनाक नया संस्करण दुनिया में तेजी से पांव पसार रहा है। WHO का दावा है कि दुनिया के 41 देशों में दस्तक दे चुका है।

लंदन, ऑनलाइन डेस्क। क्या आप भी लंदन जाने का प्लान बना रहे हैं, तो ठहरिए। यह खबर आपके लिए उपयोगी हो सकती है। आप अपनी यात्रा को निरस्त करिए। क्योंकि ब्रिटेन में मिला कोरोना वायरस का खतरनाक नया संस्करण दुनिया में तेजी से पांव पसार रहा है। विशेष सुविधायों संगठन का दावा है कि यह अब तक दुनिया के 41 देशों में दस्तक दे चुका है। बता दें कि 14 दिसंबर को ब्रिटेन सरकार ने घोषणा की थी कि देश में एक नए कोरोना वायरस से दस्तक दिया है। महज चार सप्ताह में इस वेरएंट ने 41 देशों में अपना पांव पसार चुका है। इस खबर के बाद कई मुलकों ने ब्रिटेन की यात्रा को स्थगित कर दिया है। आइए जानिए कि ब्रिटेन ने इसके रोकथाम के लिए क्या कदम उठाए हैं। नए वेरएंट को रोकने के लिए दुनिया के अन्य मुलकों ने ऐहतियात के तौर पर क्या कदम उठाए हैं।

नए वेरएंट की रोकथाम के लिए उठे बड़े कदम

1- भारत ने गणतंत्र दिवस के अवसर पर ब्रिटेन के प्रधानमंत्री बोरिस जॉनसन को मुख्य अतिथि बनाया था। वहीं, अब प्रधानमंत्री जॉनसन ने अपनी भारत यात्रा को रद कर दिया है। भारत दौरा रद करने से पहले जॉनसन ने पीएम मोदी से फोन पर बात की है। गणतंत्र दिवस के अवसर पर भारत न आने पर
उन्होंने पीएम मोदी से खेद भी जताया है। बोरिस जॉनसन ने कोरोना के नए स्टेंड और ब्रिटेन में लगाए गए लॉकडाउन के चलते ये निर्णय लिया है।

भारत में ब्रिटेन के उच्चायुक्त बने एलेक्स एलिस, सामरिक विशेषज्ञ के रूप में है खास पहचान

2- ब्रिटेन ने कहा है कि कोविड-19 के प्रसार को सीमित करने के लिए सरकार जल्द ही नए सीमा प्रतिबंधों की घोषणा करेगी। केनेट कार्लियल मंत्री माइकल गोव ने नंगलवार को कहा कि जल्द ही सीमा सुरक्षा के लिए हम नए प्रस्ताव लाएंगे। उन्होंने कहा कि इसका निकाय देश को कोरोना वायरस के प्रसार से बचाना है। उन्होंने आगे कहा कि देश के नागरिकों के लिए संदेश साफ है कि उन्हें दूसरे देश की यात्रा नहीं करनी चाहिए।

कोरोना के नए स्टेंड के रोकने के लिए ब्रिटेन सरकार लाएगी सीमा सुरक्षा के नए उपबंध, नागरिकों को यात्रा नहीं करनी की सलाह

3- ब्रिटेन के प्रधानमंत्री बोरिस जॉनसन ने कोरोना संक्रमण के नए स्टेंड के बढ़ते संकट के बीच फिर से देश में लॉकडाउन का ऐलान किया है। बोरिस जॉनसन ने कहा कि कोरोना से निपटने के लिए कम से कम फरवरी के मध्य तक नया नेशनल लॉकडाउन लगाया है ताकि नए स्टेंड को रोका जा सके। एक तरफ ब्रिटेन में कोरोना की वैक्सीन लगाने का काम शुरु किया गया है तो दूसरी तरफ लॉकडाउन का ऐलान किया गया है। ब्रिटेन सरकार के चिकित्सा विशेषज्ञों ने कोरोना के नए वेरएंट के प्रसार पर चिंता व्यक्त की थी और इसे खतरे की घंटी बताया है।

- प्रधानमंत्री जॉनसन ने कहा है कि वायरस ने अपने हमले का तरीका बदल दिया है, ऐसे में हमें भी सजग हो जाना चाहिए। देश के लिए यह कठिन समय है। प्रधानमंत्री ने कहा है कि लॉकडाउन के दौरान लोगों को घरों में ही रहना होगा और सिर्फ जरूरी काम से ही निकलने की इजाजत दी जाएगी। मसलन आवश्यक सामान लाने के लिए लोग घरों से निकल सकते हैं, अगर घर से काम नहीं कर पा रहे हों तो दफ्तर जा सकते हैं। सभी गैर-जरूरी दुकानें और हेयरड्रेसर जैसी पर्सनल केयर सेवाएं बंद रहेंगे।

आखिर क्यों हताशताक न्यू प्रेबियॉर

नए वेरएंट की तीन प्रमुख बातें दुनिया को चिंतित कर रही हैं। यह बहुत जल्दी कोरोना वायरस के अन्य रूपों की जगह ले रहा है। इसके मुयूटेशन से वायरस के उन हिस्सों में बदलाव हुआ है जो मानव कोशिकाओं पर सीधे असर डालने में सक्षम हैं। इसमें N501Y नाम का मुयूटेशन हुआ है, जो शरीर की कोशिकाओं को प्रभावित करता है। शोध से यह बात सामने आई हैं कि कुछ मुयूटेशन की वजह से वायरस की इंसानी कोशिकाओं को संक्रमित करने की क्षमता बढ़ जाती है।
Arthrit

ट्रिपल एस तकनीक की मदद से मिलेगी अर्थराइटिस के दर्द में राहत (Dainik Jagran: 20210106)


ट्रिपल एस (सेफ स्पाइनल सर्जरी) तकनीक ऐसे मरीजों को राहत दे रही है।

दिल्ली के स्पाइन जर्जन डॉ. सुदीप जैन ने बताया कि ओपेन सर्जरी के मुकाबले अधिक कारगर है सेफ स्पाइनल सर्जरी। इसमें समय लगता है कम और नहीं रहना पड़ता है बेड रेस्ट पर और उसका प्राकृतिक लचीलापन भी बना रहता है।

नई दिल्ली, जेएनएन। ठंड का मौसम आते ही स्विलिस्किंग के पास गर्दन या कमर दर्द की समस्या से जूझ रहे मरीजों की संख्या बढ़ने लगती है। इन मरीजों को दवाइयों और व्यायाम से कुछ राहत तो मिल जाती है, लेकिन पूरी तरह आराम मिल जाए, यह संभवता कम ही रहती है। लंबे समय तक दर्द के प्रति लापरवाही और अनियमित जीवनशैली लोगों को अर्थराइटिस की समस्या का शिकार बना रही है।

तकनीकी संसाधनों के प्रयोग और लंबे समय तक काम करने की आदत ने स्पाइनल अर्थराइटिस को गंभीर समस्या बना दिया है, लेकिन प्रचलित मान्यताओं के विपरीत यह बीमारी लाइकलाज नहीं है। ट्रिपल एस (सेफ स्पाइनल सर्जरी) तकनीक ऐसे मरीजों को राहत दे रही है।

प्रमुख लक्षण

gदमन में अकड़न होना
ahाथ-पैरों का सुन्न होना
hाथ-पैरों में झाड़नाहट
hमेशा कमजोरी महसूस करना
kरम का लचीलापन कम होना

थोड़ा भी काम करने में थकावट लगना
स्पाइनल अर्थराइटिस के कारण
अनियमित जीवनशैली
लंबे समय तक डेस्क वर्क
खानपान में अनियमितता
शरीर का अत्यधिक वजन
गलत मुद्रा में बैठने की आदत
kाम के कारण अत्यधिक तनाव
lंबे समय तक सफर करना, गाड़ी चलाना
टीवी देखना, कंप्यूटर या लैपटॉप पर काम करना

क्या है ट्रिपल एस तकनीकः रोगियों में इस स्पाइनल सर्जरी को लेकर कई तरह की भ्रातियाँ हैं। लोग यह मान बैठते हैं कि स्पाइनल सर्जरी बेहद जटिल होती है और इसमें सफलता भी बेहद कम मिलती है। जबकि चिकित्सा विज्ञान की प्रगति ने इस सर्जरी को बहुत आसान बनाया है। ट्रिपल एस यानी कि सेफ्स्पाइन सर्जरी वह तकनीक है, जिसमें ओपेन सर्जरी जैसा कुछ नहीं किया जाता, बल्कि एक बारीक छेद की मदद से पूरा ऑपरेशन किया जाता है।

ऑपरेशन के दौरान इंद्रा ऑपरेटिव, पोलोरोस्कोप और सीटी स्कैन की मदद से बेहद सटीक तरीके से इस सर्जरी को अंजाम दिया जाता है। इतना ही नहीं, सर्जरी में लेजर का इस्तेमाल किया जाता है ताकि नॉर्मल हड्डी और डिस्क को किसी प्रकार की क्षति न पहुंचे।

Infant

Govt should next focus on well-being of the child from womb to first five years (The Indian Express: 20210106)

India continues to be successful in preventing child deaths, but the health and nutrition of the surviving, living child has deteriorated, somewhat worryingly.

The NFHS has 42 indicators related to child’s health and nutrition (there is one indicator on school enrolment which falls outside the scope of this analysis).

The recently released fifth round of the National Family Health Survey (NFHS-5) provides new and reliable evidence to assess some dimensions of micro-development performance before COVID struck. The survey covers health, nutrition (of mother and child) and the overall quality of lives.

In a recent piece on these pages (‘New welfarism of India’s Right’, IE, December 22) we had argued that the data illustrated significant gains achieved by the government in respect to its distinctive approach to redistribution and inclusion that we called New Welfarism. This involved the subsidised public provision of essential goods and services, normally provided by the private sector. Access to banks accounts (especially for women), clean fuel for cooking, toilets and power had increased and at a significantly faster pace since 2015 than before.

Here, we provide preliminary evidence on the health and nutrition of the child in India. Since the latest round only has data for 17 states and five Union territories, our findings cover only 54 per cent of India’s population. Madhya Pradesh, Uttar Pradesh, Punjab, Rajasthan and Tamil Nadu are notable exclusions. Another point to emphasise is this: The New Welfarism was consciously driven by the Centre and it could, therefore, reasonably claim credit for its success. In contrast, many of the child-related outcomes are also determined by state-level implementation, therefore neither success nor failure can be attributed to one source. With those caveats, we explain the data and then present our results.

The NFHS has 42 indicators related to child’s health and nutrition (there is one indicator on school enrolment which falls outside the scope of this analysis). Indicators fall into nine categories and each of these can be divided into outcomes and inputs as the table shows. For example, neonatal, infant and under-5 mortality rates can be thought of as outcomes. Similarly, all the nutrition indicators —stunting, wastage, excess wastage, underweight and overweight — as well as the prevalence of diarrhoea, acute respiratory illness (ARI) and anaemia can also be classified as outcomes. In contrast, the post-natal care indicators relating to visits made by health workers, the provision of vaccinations and Vitamin A, and the extent and nature of feeding for the child can be classified as inputs (details of the NFHS questions are available online).

The input indicators are not easy to aggregate in easy or obvious ways, so we leave that as material for future research. Instead, we present some findings on the 11 child outcomes below. First, though, some nuances. We score wasting (weight for height of children) as an improvement because even though the gains were marginal, they reversed a negative trend between 2005 and 2015. However, the wasting outcome must be treated with caution because trends on wasting move contrary to those of “severe wasting” even from 2005. There is also one indicator we have ignored, since it is difficult to classify: Underweight, where there were marginal gains, but a slowdown relative to the past.
Now, for the results, which can be summarised as: India continues to be successful in preventing child deaths, but the health and nutrition of the surviving, living child has deteriorated, somewhat worryingly.

Of the 10 outcomes, there have been improvements in four (Figure 1). It is readily apparent that India continued to make progress in preventing child-related deaths (neonatal, infants and under-5). That said, the pace of improvement in child mortality slowed down relative to the previous 10 years. For example, between 2005 and 2015, the infant mortality rate came down by nearly 2 percentage points per year while between 2015 and 2019 that pace halved to 1 percentage point per year (post-2015, the mortality lines are flatter than before in Figure 1). Whether some slowing should be expected because India is now close enough to the desirable benchmark is an open question.

Figure 2 shows the six indicators where outcomes have deteriorated. These all relate to what happens after survival: The health (anaemia, diarrhoea, and acute respiratory illness (ARI)) and nutrition (stunting, and overweight) of the child deteriorated between 2015 and 2019. In none of these cases is the aggregate deterioration driven by outliers, that is, by one or two states.

Moreover, the absolute deterioration in health and nutrition indicators must be seen against the fact that they reversed the historic trends of steady improvements. That is particularly true of the prevalence of diarrhoea and anaemia and to a lesser extent of stunting and acute respiratory illness (post-2015, the lines slope downwards whereas they sloped upwards from 2005-2015).

Several factors probably play a role in explaining these outcomes. As already noted, implementation capacity of individual states probably played an important role. Sector-specific factors such as changing diets are also implicated. But the fact of a broader deterioration in outcomes hints at the likelihood of a common factor, namely the macro-economic growth environment, which determines employment, incomes and opportunities. At the least, it is safe to conjecture that some of these outcomes are inconsistent with the narrative of a rapidly growing economy.

We mentioned earlier that the NFHS provides data on child-related inputs. These need to be examined too. Suppose it turns out that the Centre and the states have done a good job in improving the quality and quantity of inputs that go into the child, then there would be a real puzzle: Why do outcomes and inputs diverge? Indeed, as we showed in our earlier piece, the government has made great strides in providing a number of basic needs to households such as toilets, clean cooking fuel, power and bank accounts. Those developments would also serve to aggravate the puzzle of why the health and nutrition of the child in India has deteriorated.

As discussed in Chapter 5 of the Economic Survey of 2015-16, perhaps the next big welfare initiative of the government, building on the considerable success of its New Welfarism, should be a mission-mode focus on the well-being of the early child (and of course the mother), from the womb to the first five years, which research shows is critical for realising its long run potential as an individual.
H5N1 virus

Centre issues bird flu alert after H5N1 virus found in samples from Himachal (The Indian Express: 20210106)


Bird flu outbreak: States have been asked to take up surveillance and monitoring of birds for any signs of the disease and take appropriate measures for controlling it on priority.

With thousands of birds dying in five states across the country and confirmation of the H5N1 avian influenza virus in samples from migratory birds found dead in the Pong Dam Lake in Himachal Pradesh, the Union Ministry of Environment, Forests and Climate Change on Tuesday issued a high alert, and asked all Chief Secretaries to take “urgent measures” considering the seriousness of the situation and the “possibility of spread of the disease to humans and other domesticated animals/birds”.

States have been asked to take up surveillance and monitoring of birds for any signs of the disease and take appropriate measures for controlling it on priority.

This came after the ICAR-National Institute of High Security Animal Diseases in Bhopal detected avian flu in samples from a large number of migratory birds found dead in the Pong Dam Lake in Himachal Pradesh. The migratory waterfowl, mostly Bar-Headed Geese, found dead in the lake area rose to 2,700 on Tuesday, with officials surveying the area in Kangra district to check the spread of the flu to domestic poultry birds.

The Union ministry has directed state governments to set up state-level monitoring committees for migratory birds and develop action plans dealing with any emergency. These committees are to collaborate with the State Veterinary Departments in collection of samples and to keep proper vigil. All deaths of migratory birds, whatever be the number and cause, are also to be reported to the MoEFCC immediately.

Meanwhile, culling of chickens and ducks began on Tuesday in parts of Kerala to contain the H5N8 strain of bird flu, while Jammu and Kashmir sounded an alert and started collecting samples from migratory species after Himachal Pradesh, Rajasthan and Madhya Pradesh reported cases of the avian influenza.

In Haryana, more than four lakh poultry birds have died at farms in Panchkula district in the past 10 days, officials said, adding that a team from Jalandhar’s Regional Disease Diagnosis Laboratory has collected samples. There are no confirmed reports of avian influenza till now, an RDDL spokesperson said.
Karnataka and Tamil Nadu have stepped up surveillance and formed guidelines following the outbreak of the viral infection in neighbouring Kerala, where around 1,700 ducks have died due to the flu.

In Madhya Pradesh, officials said that 155 dead crows in Indore have been found with the H5N8 strain since the pathogen was first detected in the city a week back, while in Rajasthan, after Jhalwar, birds in Kota and Baran were found with the infection.

“The avian influenza spreads rapidly, there could be a likelihood of humans getting affected. So, as a precaution, the directorate general of health services has evolved a contingency plan for the management of human cases,” Tamil Nadu health secretary J Radhakrishnan said.

Bird flu is a highly infectious and severe respiratory disease in birds caused by the virus which can occasionally infect humans as well, although human-to-human transmission is unusual, according to the World Health Organisation. There is also no evidence, the WHO says, that the disease can spread to people through food prepared and cooked properly as the virus is sensitive to heat, and dies in cooking temperatures.

**CSIR labs**

**From CSIR labs, fresh evidence and advice on airborne Covid spread (The Indian Express: 20210106)**


The transmission of SARS-CoV2 was initially thought to be happening mainly through contact and droplets coming out during speech, coughs or sneezes. Scientists collected 64 air samples from different locations in six hospitals in these cities, and another 17 from closed rooms occupied by infected people who were without masks and asked to talk on the phone or with one another.

A new study by laboratories in Hyderabad and Mohali has found fresh evidence that the risk of airborne transmission of the novel coronavirus is quite low if sufficient physical distance is maintained and prolonged interaction with an infected person is avoided.

The transmission of SARS-CoV2 was initially thought to be happening mainly through contact and droplets coming out during speech, coughs or sneezes. But several studies later reported transmission among people who were suitably distanced but had shared enclosed spaces, like a closed room or vehicle. That suggested that the virus possibly travels in air to far greater distances than the two to three feet that was originally considered the zone of risk.
Scientists at two laboratories of the Centre of Scientific & Industrial Research (CSIR), the Centre for Cellular and Molecular Biology in Hyderabad, and Institute of Microbial Technology in Chandigarh, have studied the extent of transmission through air. The study, conducted in hospitals in these two cities, found that the risk of exposure in closed rooms through airborne transmission was higher if there were more infected people present, but that in normal circumstances the virus was not found more than four feet from the infected person. The study has said that demarcating Covid and non-Covid areas in hospitals was a good strategy, and that masks were still very effective.

“Not that we did not know these things, but we have been able to generate more data which validate it from a scientific perspective,” said Shekhar Mande, Director General of CSIR.

The scientists collected 64 air samples from different locations in six hospitals in these cities, and another 17 from closed rooms occupied by infected people who were without masks and asked to talk on the phone or with one another. Four samples taken from Covid areas of hospitals, and one from the closed room were found to contain the virus.

“The virus could not be detected in any of the non-Covid areas, providing objective evidence that the strategy of separating hospital premises into Covid and non-Covid care areas is effective,” said the study, which is currently on a preprint server.

“The positivity rate was found to be higher when the number of COVID patients were higher in the room… A point to be highlighted from the hospital experiments was that in three-fourth of the samples which were positive, the sampler was at least 10 feet away from the nearest patient… this may be an indicator that long term presence of COVID positive patients in an enclosed space may contribute to a significant increase in aerosol burden in the air,” the study said.

The study also found that in “neutral” conditions, with no particular air flow direction, the virus did not travel much in the air.

“Virus could not be picked up at a distance of even 4 feet when COVID positive individuals spent a short time (20 minutes) in the room. This indicates that short duration of exposure to a COVID positive individual may not put one at a significantly increased risk. The samples collected at 8 feet and 12 feet subsequently were also negative,” it said.

Takeaways & recommendations

Based on this study, and also the findings from some other studies, the CSIR has issued an advisory

PUBLIC TRANSPORT: Exposure to a Covid-19-positive individual for a short duration (30 minutes) when adequate precautions are being taken does not significantly increase the risk of contracting the disease. Taking this into consideration, short-duration travel in Metro/local trains or buses is likely to be safe. If one needs to travel longer, the journey may be broken in to parts to mitigate the risk. For example, if the journey from point A to B is for an hour, it can be broken down in to two journeys of half an hour each.
CAUTION ON PUBLIC TOILETS: Flushing has the potential to generate aerosols which can stay longer in the air and the virus is known to be excreted in stool. Masks should be always kept on while using these and if possible, the same toilet should be reused only half an hour after the previous use. Pictorial instructions should be stuck in the toilets regarding cleaning them after utility. This should be followed by adequate hand hygiene.

HOME & HOSPITAL: Spending more time in closed spaces can be risky even if social distancing is maintained. Open, well-ventilated spaces carry less risk of infection. In a family, if a person tests Covid-19-positive and is advised by the doctor to be home-quarantined, he/she should be isolated in a separate room to prevent the infection spreading to other family members. His/her toilet should be separate from the toilet(s) used by others.

**Antibodies**

**Antibodies target different parts of coronavirus in mild and severe cases** *(The Indian Express: 20210106)*


Antibodies that recognise and bind to the spike protein block its ability to bind to the human cell, preventing infection. On the other hand, antibodies that target other viral components are unlikely to prevent viral spread.

Researchers test for SARS-CoV-2, the virus that causes the COVID-19 disease, at a lab. *(The New York Times: Emile Ducke, File)*

Antibodies against Covid-19 preferentially target a different part of the virus in mild cases and a different part in severe cases, according to a new study by researchers at Stanford Medicine. The study is published in the journal Science Immunology.

SARS-CoV-2 binds to human cells via a structure on its surface called the spike protein. Once inside, the virus sheds its outer coat to reveal an inner shell encasing its genetic material. Soon, the virus created multiple copies of itself, which are then released to infect other cells.

Antibodies that recognise and bind to the spike protein block its ability to bind to the human cell, preventing infection. On the other hand, antibodies that target other viral components are unlikely to prevent viral spread.

The researchers studied 254 people with asymptomatic, mild or severe Covid-19. Twenty-five people in the study died of the disease. They found that people with severe Covid-19 have a lower proportion of antibodies targeting the spike protein used by the virus to enter human cells than of antibodies targeting proteins of the virus’s inner shell.
The research analysed the levels of three types of antibodies — IgG, IgM and IgA — and the proportions that targeted the viral spike protein or the virus’s inner shell as the disease progressed and patients either recovered or grew sicker. They also measured the levels of viral genetic material in nasal samples and blood from the patients. Finally, they assessed the effectiveness of the antibodies in preventing the spike protein from binding to the human protein ACE2 in a laboratory dish.

“We found that the severity of the illness correlates with the ratio of antibodies recognising domains of the spike protein compared with other non-protective viral targets. Those people with mild illness tended to have a higher proportion of anti-spike antibodies, and those who died from their disease had more antibodies that recognized other parts of the virus,” Stanford Medicine quoted pathologist Boyd as saying.

The findings raise concerns about whether people can be re-infected, whether antibody tests to detect prior infection may underestimate the breadth of the pandemic and whether vaccinations may need to be repeated at regular intervals to maintain a protective immune response, Stanford Medicine said in a media release.

“This is one of the most comprehensive studies to date of the antibody immune response to SARS-CoV-2 in people across the entire spectrum of disease severity, from asymptomatic to fatal. We assessed multiple time points and sample types, and also analysed levels of viral RNA in patient nasopharyngeal swabs and blood samples. It’s one of the first big-picture looks at this illness,” Boyd was quoted as saying.