2020

समाचार पत्रों से चयित अंश

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COVID-19: DRDO's Contribution

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Government of India
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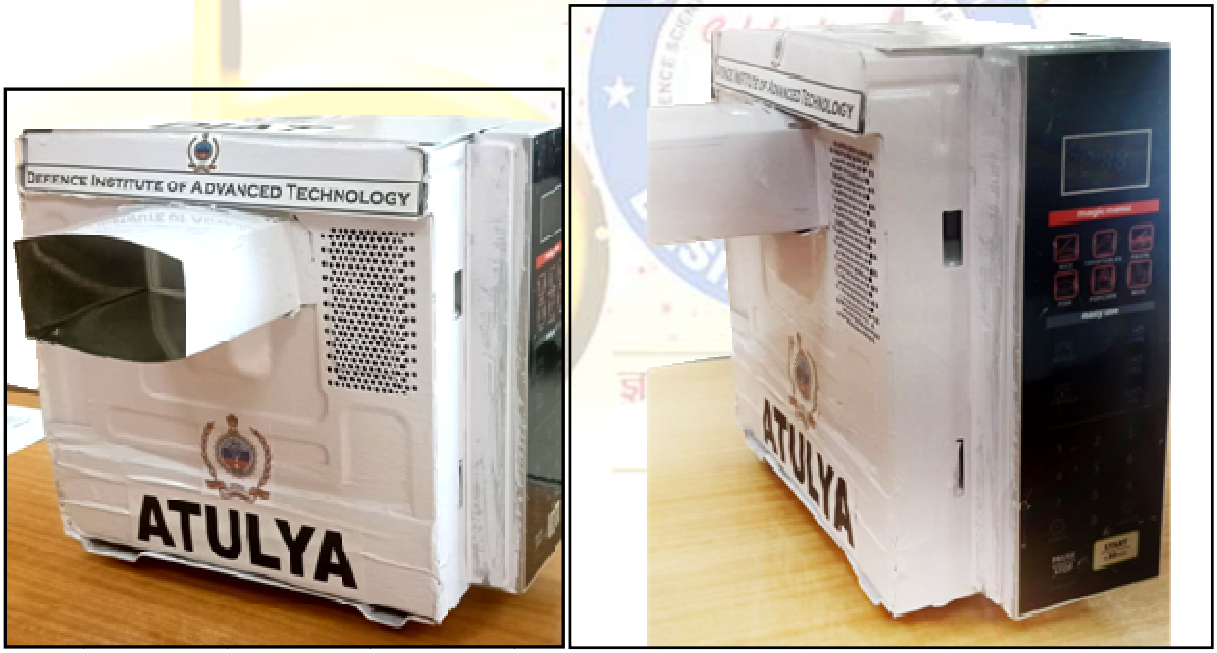
Thu, 30 APR 2020 6:22PM

Microwave steriliser to disintegrate novel Coronavirus developed

Defence Institute of Advanced Technology, Pune, a deemed university supported by Defence Research and Development Organisation has developed a microwave steriliser named as ***'ATULYA'*** to disintegrate (COVID-19). The virus gets disintegrated by differential heating in the range of 56^0 to 60^0 Celsius temperatures.

The product is cost effective solution, which can be operated in portable or fixed installations. This system was tested for human/operator safety and has been found to be safe. Depending upon size and shape of various objects, time of sterilisation is from 30 seconds to one minute. Approximate weight of the system is three kilogrammes and it can be used for non-metallic objects only.



ABB/SS/Nampi/KA/DK/Savvy/ADA

(Release ID: 1619643)
https://pib.gov.in/PressReleasePage.aspx?PRID=1619643

Press Information Bureau
Government of India

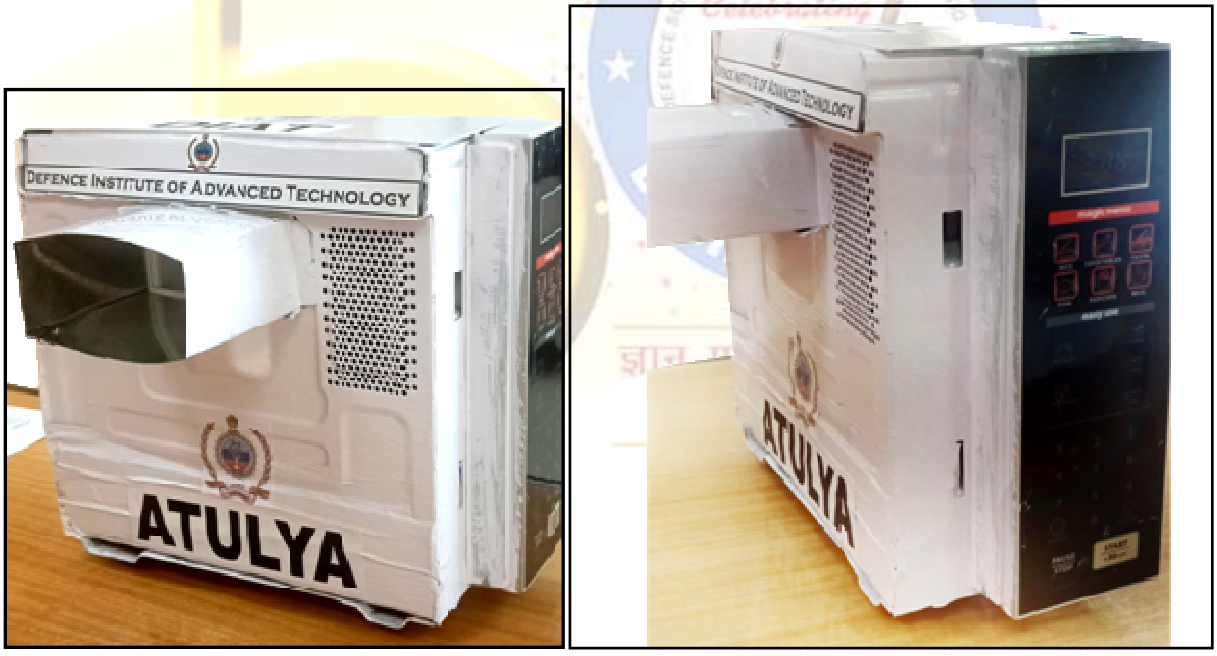
रक्षा मंत्रालय

Thu, 30 APR 2020 6:22PM

नोवेल कोरोना वायरस को विघटित करने वाला माइक्रोवेव स्टरलाइजर विकसित

रक्षा अनुसंधान एवं विकास संगठन द्वारा समर्थित एक मानद विश्वविद्यालय, डिफेंस इंस्टीट्यूट ऑफ एडवांस्ड टेक्नोलॉजी ने कोविड-19 को विघटित करने के लिए 'अतुल्य' नामक एक माइक्रोवेव स्टरलाइजर का विकास किया है। यह वायरस 56 डिग्री से 60 डिग्री सेल्सियस तापमान में विभेदकारी ऊष्माष्यन द्वारा विघटित हो जाता है।

यह उत्पाद एक किफायती सॉल्यूशन है जिसे पोर्टेबल या फिक्स्ड इंस्टोलेशन में प्रचालित किया जा सकता है। इस सिस्टम का मानव/प्रचालक सुरक्षा के लिए परीक्षण किया एवं इसे सुरक्षित पाया गया। भिन्न-भिन्न वस्तुओं के आकार और ढांचे के अनुसार, स्टरलाइजेशन का समय 30 सेकेंड से एक मिनट तक रहता है। सिस्टम का वजन लगभग तीन किलोग्राम है और इसका उपयोग केवल गैर-मेटैलिक वस्तुओं के लिए किया जा सकता है।



एएम/एसकेजे

(Release ID: 1619706)

https://pib.gov.in/PressReleasePage.aspx?PRID=1619706

Press Information Bureau
Government of India

రక్షణ మంత్రిత్వ శాఖ

Thu, 30 APR 2020 6:22PM

నవ్య కరోనా వైరస్ విచ్ఛిన్నం చేయడానికి మైక్రోవేవ్ స్టెరిలైజర్ అభివృద్ధి

'డిఫెన్స్ రీసెర్చ్ అండ్ డెవలప్‌మెంట్ ఆర్గనైజేషన్' మద్దతుతో పని చేస్తున్న పూణేలోని 'డిఫెన్స్ ఇన్‌స్టిట్యూట్ ఆఫ్ అడ్వాన్స్‌డ్ టెక్నాలజీ' సంస్థ కోవిడ్-19 వైరస్ విచ్ఛినం చేయడానికి 'అతులియా' అనే మైక్రోవేవ్ స్టెరిలైజర్‌ను అభివృద్ధి చేసింది. 'అతులియా' అనే మైక్రోవేవ్ స్టెరిలైజర్ 560 నుండి 600 సెల్సియస్ ఉష్ణోగ్రతల పరిధిలో అవకలన తాపన ద్వారా వైరస్ విచ్ఛిన్నమవుతుంది. సరసమైన ధరలో అందుబాటులో ఉండేలా 'అతులియా' అనే మైక్రోవేవ్ స్టెరిలైజర్‌ను రూపొందిచడం జరిగింది. ఇది పోర్టబుల్ లేదా స్థిర సంస్థాపన విధానంలో ఏర్పాటు చేసుకొని వినియోగించేలా దీనిని రూపొందించారు. ఈ స్టెరిలైజర్ వ్యవస్థ మానవ / ఆపరేటర్ భద్రత అంశాలను పరీక్షిస్తూ సురక్షితంగా ఉండేలా అభివృద్ధి చేయడమైంది. స్టెరిలైజ్ చేసే వివిధ వస్తువుల పరిమాణం మరియు ఆకారాన్ని బట్టి కేవలం 30 సెకన్ల నుండి నిమిషం వ్యవధిలో 'అతులియా' వాటిని క్రిమిరహితం చేస్తుంది. ఈ స్టెరిలైజర్ సుమారు మూడు కిలోగ్రాముల బరువు ఉంటుంది. లోహరహిత వస్తువుల స్టెరిలైజేషన్‌కు కూడా ఉపయోగించేందుకు వీలుగా దీనిని తయారు చేశారు.

(Release ID: 1619738)

https://pib.gov.in/PressReleasePage.aspx?PRID=1619738

Fri, 01 May 2020

कोरोना वायरस को खत्म करने के लिए DRDO का 'अतुल्य' तैयार, ऐसे करता है काम

नीरज राजपूत

- ***कोरोना वायरस महामारी फैलने के बाद से ही डीआरडीओ के सभी वैज्ञानिक और लैब कोविड-19 के खिलाफ तकनीक और खास प्रोडेक्ट बनाने में जुटे हैं।***
- ***डीआरडो की यूनिवर्सिटी ने तापमान के जरिए कोविड-19 वायरस को खत्म करने की तकनीक ईजाद की है जिसमें कुर्सी, मेज, सोफे तक को भी डिसइंफेक्ट किया जा सकता है***

नई दिल्ली: कोरोना वायरस से लड़ने के लिए डीआरडीओ ने एक और माइक्रोवेव-स्ट्रेलाइजर तैयार किया है। 'अतुल्य' नाम का ये खास माइक्रोकवेव तापमान तकनीक पर काम करता है, जिसके जरिए दावा किया गया है कि ये कोविड-19 वायरस को मार सकता है।

रक्षा मंत्रालय ने बयान जारी कर दावा किया है कि डीआरडीओ की पुणे स्थित डीम्ड यूनिवर्सिटी, डिफेंस इंस्टीट्यूट ऑफ एडवांस टेक्नोलॉजी ने इस माइक्रोवेव स्ट्रेलाइजर को तैयार किया है। अतुल्य नाम की इस मशीन के जरिए 56 से 60 डिग्री सेल्सियस तापमान पर कोरोना वायरस को खत्म करने का दावा किया गया है। रक्षा मंत्रालय के मुताबिक, ये प्रोडेक्ट काफी किफायती है और प्रोटेबल रूप में भी मिल सकता है और इसे एक जगह पर फिक्स भी किया जा सकता है। इस सिस्टम को टेस्ट करके पूरी तरह सुरक्षित पाया गया है। जिस सामान को स्ट्रेलाइज करना है उसके साइज के हिसाब से 30 सेकेंड से करीब एक मिनट तक इसके सामने रखने से वायरस को मारा जा सकता है। इसके लिए अतुल्य को किसी भी सोफे, कुर्सी या मेज इत्यादि पर एक मिनट के लिए घूमाना है और कोविड-19 के कीटाणु मर जाएंगे।

आपको बता दें कि जबसे देश में कोरोना वायरस फैला है तभी से देश की प्रतिष्ठित रक्षा संस्थान, डीआरडीओ यानि डिफेंस रिसर्च एंड डेवलपमेंट ऑर्गेनाइजेशन कोविड-19 के खिलाफ नई-नई तकनीक तैयार कर रही है। इससे पहले भी डीआरडीओ के वैज्ञानिक और अलग-अलग लैब कोरोना वायरस से लड़ने की तकनीक और सामान तैयार कर चुके हैं। हालांकि, डीआरडीओ को मुख्य चार्टर देश की सशस्त्र सेनाओं के लिए हथियार, मिसाइल और दूसरे सैन्य साजो सामान तैयार करना है।

हाल ही में डीआरडीओ की अहमनगर स्थित लैब ने एक सैनेटाइजशन-एन्कलोजर (टनल) तैयार की थी। इस टनल के जरिए ऑफिस, हॉस्पिटल या फिर किसी अपार्टमेंट के एंट्री-प्वाइंट पर लगाने से आने-जाने वालों के ऊपरी शरीर को सैनेटाइज किया जा सकता है। इसके अलावा दिल्ली स्थित दो संस्थानों ने अल्ट्रा-वायलेट तकनीक से काम करने वाला माइक्रोवेव सैनेटाइजशन-बॉक्स तैयार किया था।

इस यूवीसी-बॉक्स के जरिए आप अपने निजी सामान जैसे पर्स, मोबाइल, घड़ी आदि को सैनेटाइज कर सकते हैं। इसी तरह यूवीसी-लैंप से भी कुर्सी, मेज, सब्जी या फिर फूड-पैकेट्स को कीटाणु-मुक्त किया जा सकता है। साथ ही डीआरडीओ ने पैराशूट बनाने वाले मैटेरियल से डॉक्टर्स, नर्स और पैरा-मेडिक स्टाफ के लिए पीपीई-सूटतैयार किया गया है। कोरोना वायरस से लड़ने के लिए खास एन-99 मास्क और सैनेटाइजर भी डीआरडीओ की लैब तैयार कर रही हैं।

https://www.abplive.com/news/india/coronavirus-drdos-microwave-stabilizer-atulya-ready-to-eliminate-corona-virus-ann-1366646

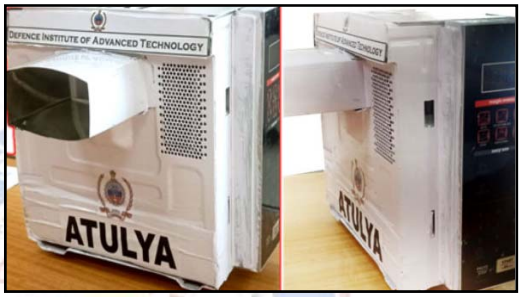
oneindia hindi

Fri, 01 May 2020

कोरोना के खात्मे के लिए DRDO और डिफेंस इंस्टीट्यूट ने मिलकर तैयार किया ये खास उपकरण

आशुतोष तिवारी

नई दिल्ली: कोरोना वायरस के खिलाफ पूरा देश एकजुट होकर लड़ाई लड़ रहा है। वहीं अब इस लड़ाई में स्वास्थ्य मंत्रालय को रक्षा मंत्रालय का भी साथ मिल गया है। कोरोना के खात्मे के लिए डिफेंस इंस्टीट्यूट ऑफ एडवांस टेक्नोलॉजी पुणे और डीआरडीओ ने मिलकर एक माइक्रोवेव स्टरलाइजर का निर्माण किया है, जिसकी मदद से कोरोना का खात्मा हो सकेगा। इस उपकरण का नाम अतुल्य रखा गया है। वहीं ये उपकरण काफी हल्का है, जिस वजह से उसको कहीं पर भी सेट किया जा सकता है।



मामले में रक्षा मंत्रालय ने जानकारी देते हुए बताया कि कोरोना वायरस 560-600 डिग्री तापमान में खत्म हो जाता है। इसी के आधार पर डिफेंस इंस्टीट्यूट ऑफ एडवांस टेक्नोलॉजी पुणे ने माइक्रोवेव स्टरलाइजर तैयार किया है। ये उपकरण पोर्टेबल है, इसको कहीं पर भी आसानी से स्थापित किया जा सकता है। रक्षा मंत्रालय के मुताबिक इसका परीक्षण कर लिया गया है, जो इंसानों के लिए पूरी तरह से सुरक्षित है। ये सिर्फ तीन किलोग्राम का है, ऐसे में इसे आसानी से कहीं पर ले जाया जा सकता है। वहीं किसी चीज को संक्रमण मुक्त करने के लिए इसे 30 सेकेंड से एक मिनट तक का वक्त लगेगा। ये वक्त उस चीज के साइज पर निर्भर करेगा। रक्षा मंत्रालय के मुताबिक इसका उपयोग नॉन मैटेलिक चीजों के लिए ही किया जा सकता है।

आपको बता दें कि देश में कोरोना संक्रमित मरीजों की संख्या 33 हजार के पार पहुंच गई है। जिसमें से एक हजार से ज्यादा लोगों की जान जा चुकी है। वहीं रक्षा मंत्रालय से जुड़ी तमाम संस्थाएं लगातार स्वास्थ्य सेवाओं को हाईटेक बनाने के लिए काम कर रही हैं। इससे पहले रक्षा मंत्रालय मास्क, पीपीई किट, टेस्टिंग लैब आदि तैयार करवा चुका है।

https://hindi.oneindia.com/news/india/defence-institute-of-advanced-technology-and-drdo-has-developed-microwave-steriliser-for-coronavirus-558105.html

hindustantimes

Fri, 01 May 2020

Pune-based institute DIAT develops microwave steriliser to kill coronavirus

New Delhi: The Pune-based Defence Institute of Advanced Technology has developed a microwave steriliser to kill the coronavirus and named it Atulya, the defence ministry said on Thursday. DIAT is a deemed university supported by the Defence Research and Development Organisation (DRDO), which is among the several government agencies that have been at the forefront of the fight against the coronavirus disease (Covid-19).

The virus gets disintegrated by differential heating in the range of 56 to 60 degrees Celsius, the ministry said in a statement. “The product is a cost- effective solution and can be operated in portable or fixed installations. This system was tested for human/operator safety and has been found to be safe,” it said.

The sterilisation time can range from 30 to 60 seconds depending on the size and shape of objects. Weighing three kilos, it can be used for sterilising non-metallic objects only.

Different wings of the defence ministry including the armed forces, the DRDO and the Ordnance Factory Board, have designed and developed a wide range of products to support the country’s effort to contain the spread of the pandemic.

The DRDO has developed several products to combat the pandemic including ventilators, personal protective equipment (PPE) kits, large area sanitisation solutions and Covid-19 sample collection kiosks. Last week, the DRDO stepped forward to provide medical oxygen plants to hospitals in far-flung areas to generate their own oxygen supply.

As reported by Hindustan Times on April 15, the armed forces have also come up with a raft of innovations to combat the pandemic --- from modifying quadcopters to spray disinfectants over large areas to ultra-violet light sanitisers, assisted respiratory systems and 3-D printed masks.

https://www.hindustantimes.com/india-news/pune-based-institute-diat-develops-microwave-steriliser-to-kill-coronavirus/story-ooTjT5ThyQAYPjZUWOb8LM.html

Outlook
THE FULLY LOADED MAGAZINE

Fri, 01 May 2020

Microwave steriliser to disintegrate coronavirus developed

New Delhi: The Defence Institute of Advanced Technology (DIAT) in Pune has developed a microwave steriliser named "Atulya" to deal with coronavirus, which gets disintegrated by differential heating in the range of 560-600 degrees Celsius.

All the trials carried out by the DIAT, a deemed university, supported by Defence Research and Development Organisation (DRDO), of the microwave steriliser was successful.

"The product is a cost-effective solution, which can be operated in portable or fixed installations. This system was tested for human/operator safety and has been found to be safe," the DRDO said.

Depending upon size and shape of various objects, the time of sterilisation is from 30 seconds to one minute.

Approximate weight of the system is three kgs and it can be used for non-metallic objects only.

Also, a mobile viral research laboratory (MVRL) was developed by the DRDO earlier this month in association with Employees" State Insurance Corporation (ESIC) Hospital and private industry

The laboratory was developed by Research Centre Imarat (RCI), the Hyderabad based laboratory of the DRDo in consultation with ESIC Hospital, Hyderabad.

Unveiling the laboratory through video conference, Defence Minister Rajnath Singh had appreciated the setting up of this bio-safety Level 2 and Level 3 lab in a record time of 15 days, against the usual time of six months.

He had stated said this testing facility, which can process more than 1,000 samples in a day, will enhance the country"s capabilities in fighting Covid.

The minister said that the government had taken several timely decisions due which the spread of Covid in the country is far less compared to many other countries.

He said the armed forces are contributing in many ways - such as setting up of quarantine centres, providing healthcare facilities, evacuating Indians from other countries etc - to fight Covid and these efforts will continue.

(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: IANS)

https://www.outlookindia.com/newsscroll/microwave-steriliser-to-disintegrate-coronavirus-developed/1819840

COVID-19: DRDO/ IIT Contribution

DECCAN HERALD

Fri, 01 May 2020

IIT Guwahati students' venture develops low-cost intubation boxes to shield doctors against COVID-19

By Sumir Karmakar

Guwahati: IIT Guwahati students' venture has designed low-cost intubation boxes that promise to obstruct the flow of virus-laden droplets from COVID-19 positive persons to doctors, thereby reducing the chances of their infection.

The device will function as an aerosol obstruction box which is placed atop the patient bed on the head-side, limiting the flow of droplets from the patient to the doctor, especially during the process of intubation.

"As in the case of COVID-19, patients develop respiratory failure thus requiring assistance in the form of endotracheal intubation. Given the nature of this process, healthcare providers are at risk of contracting the virus via droplets either exhaled or coughed out by the patient," said a statement issued by IIT Guwahati on Thursday.

It said the device was inspired by the design of Dr. Hsien Yung Lai, an anesthesiologist from Taiwan.

The box has been developed and designed by Mitochondrial, a student venture for medical innovation mentored by S. Kanagaraj and Sajan Kapil of the department of Mechanical Engineering. It is a low-cost alternative to intubation boxes and is easier to manufacture and deliver amid the lockdown. The projected cost of a box is about Rs. 2,000, which is significantly lower than alternatives, it said.

The intubation box developed by IIT Guwahati students' venture. (Photo credit: IIT Guwahati)

The team has received assistance from the DRDO for prototyping and testing at the Solid State Physics Laboratory, New Delhi.

As opposed to other PPEs, this box works effectively for multiple doctors and nurses serving the patient. While the transparent material allows visual access to the head of the patient inside, the arm-holes on the box allow for the care-provider to perform any necessary tasks including intubation and extubation, which are both processes known to be cough inducing. Further, the

boxes are reusable, as they may be cleaned thoroughly with 70% alcohol or bleach, to allow use for the next patient, the statement said.

"We feel that it is our responsibility to contribute to this fight against a global pandemic," Umang Mathur said.

The primary prototype of the design has been completed at DRDO, New Delhi, and the box is being reviewed in the field in major COVID-19 care centres, such as AIIMS, New Delhi. Based on the feedback, the design will be further optimised for improved efficacy, before the first batch is manufactured in Gurgaon, Haryana, it said.

https://www.deccanherald.com/national/iit-guwahati-students-venture-develops-low-cost-intubation-boxes-to-shield-doctors-against-covid-19-831900.html

The Telegraph
online edition

Fri, 01 May 2020

IIT Guwahati develops intubation boxes

The team has started a crowdfunding campaign in order to manufacture these boxes and provide them to government hospitals for free

By Rokibuz Zaman

Guwahati: Indian Institute of Technology Guwahati students have designed and developed a low-cost intubation boxes.

An intubation box Telegraph picture

The device functions as an aerosol obstruction box which is placed atop the patient's bed on the head side, limiting the flow of virus-laden droplets from the patient to the doctor, especially during the process of intubation.

As in the case of Covid-19, patients develop respiratory failure thus requiring assistance in the form of endotracheal intubation.

Given the nature of this process, healthcare providers are at risk of contracting the virus via droplets either exhaled or coughed out by the patient. The device is inspired by the design of Dr Hsien Yung Lai, an anaesthesiologist from Taiwan.

"It is developed and designed by a student venture for medical innovation named Mitochondrial. Mitochondrial is mentored by Dr S. Kanagaraj and Dr Sajan Kapil of the department of mechanical engineering, IIT Guwahati. It is a low-cost alternative to intubation box and is easier to manufacture and deliver amid the lockdown. The projected cost per box is Rs 2,000, which is significantly lower than existing alternatives," said an IIT statement released on Thursday.

The team has started a crowdfunding campaign in order to manufacture these boxes and provide them to government hospitals for free. The campaign raised a record Rs 50,000 within six hours of launching.

The team has received assistance from the DRDO for prototyping and testing at the Solid State Physics Laboratory, New Delhi, and is consulting Dr Johann Christopher of Care Hospitals, Hyderabad, and Dr Abhijeet Bhatia of NEIGRIHMMS Shillong, to ensure the efficacy of the design.

The primary prototype of the design has been completed at DRDO, New Delhi, and the box is currently being reviewed in the field at major Covid-19 care centres, such as AIIMS, New Delhi.

https://www.telegraphindia.com/states/north-east/iit-guwahati-develops-intubation-boxes/cid/1769371

Outlook
THE FULLY LOADED MAGAZINE

Fri, 01 May 2020

Rajnath Singh takes stock of armed forces'' preparedness in dealing with Covid-19

New Delhi: Defence Minister Rajnath Singh held a meeting with the top military brass of the country on Thursday to take stock of the overall preparedness of the armed forces in dealing with the coronavirus pandemic, officials said.

Chief of Defence Staff General Bipin Rawat, Indian Navy Chief Admiral Karambir Singh, Indian Air Force"s Air Chief Marshal R K S Bhadauria and Indian Army Chief General M M Naravane were present at the meeting, they said.

Defence Secretary Ajay Kumar, Defence Research and Development Organization (DRDO) Chief G Satheesh Reddy and other senior officials of the Ministry of Defence were also present at the meeting, the officials noted.

The defence minister is learnt to have enquired the top military brass about their preparedness to deal with the pandemic and measures taken to protect the armed forces personnel against the respiratory disease.

(Disclaimer: This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: PTI)

https://www.outlookindia.com/newsscroll/rajnath-singh-takes-stock-of-armed-forces-preparedness-in-dealing-with-covid19/1820019

hindustantimes

Fri, 01 May 2020

Pakistani spies use Aarogya Setu app to target Indian military personnel, Army issues warning

Senior Army sources told ANI that Pakistani agencies are using social media accounts with Indian names to target the Indian personnel

New Delhi: The Indian Army has issued a warning to its personnel against Pakistani agencies' nefarious designs to hack the phones of Indian military personnel through a malicious application similar to the Aarogya Setu app.

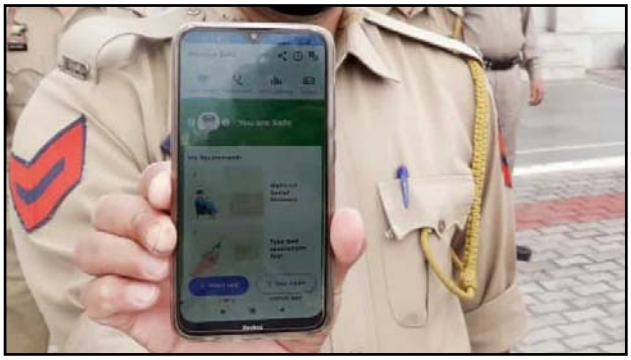
"Inimical intelligence agencies have developed a malicious app by the name Aarogya Setu.apk. Such apps were found to be sent by Pakistan-based Pakistani Intelligence Operatives to WhatsApp groups of Indian Army personnel," the Army has stated in its warning.

Senior Army sources told ANI that Pakistani agencies are using social media accounts with Indian names to target the Indian personnel.

"Known Pakistani Intelligence Operative account under the fake name of one 'Anoshka Chopra' also found sending the malicious application to Indian Army personnel," the sources said.

The Army in its warning has asked personnel about the need to be sensitised about the Pakistani spy agencies' designs while downloading the application.

The Army has also told its men and women that the Aarogya Setu application must be downloaded only from the Indian government website (mygov.in) or Android Play Store or iOS Apple Play Store.



Security personnel display Aarogya Setu on their mobile phone. (ANI)

All forces personnel have been asked to download the Aarogya Setu application to help in the detection and checking the spread of COVID-19. The application has been developed by government agencies and is being used by almost all government employees.

Recently, Army Chief Gen Manoj Mukund Naravane had stated that while India is busy fighting coronavirus both internally and globally, Pakistan is busy in exporting terrorism in India and other places.

https://www.hindustantimes.com/india-news/pakistani-spies-use-aarogyasetu-app-to-target-indian-military-personnel-army-issues-warning/story-cho7X9CK5ZqCA8un3OatrK.html

hindustantimes

Fri, 01 May 2020

'All borders sealed to keep out infections'

By Neeraj Chauhan

New Delhi: There have been no major activities like infiltration of terrorists, human trafficking, cattle, fake currency or drug smuggling along India's borders with Pakistan and Bangladesh over the last month as they have been completely sealed, the head of Border Security Force (BSF) and Indo-Tibet Border Force (ITBP) said on Thursday.

"Our priority during the [Covid-19] lockdown has been to stop infiltration of coronavirus carriers from across the border while maintaining tight vigil on other activities," said Surjeet Singh Deswal. "We have maintained a high level of alertness at the borders, which are completely sealed with no movement of any kind."

Jammu & Kashmir police chief Dilbagh Singh last week accused Pakistan of pushing Covid-19 infected militants to spread the disease in the Union Territory. The intelligence agencies have also alerted the government that about 300 terrorists were waiting to cross over from Pakistan, according to people aware of the matter. Pakistan has also resorted to shelling and firing, which are often used as cover to push in infiltrators into India, along the Line of Control (LoC) or the de facto border between the two countries in Jammu & Kashmir.

Without going into specifics, Deswal said Pakistan's "mischievous acts" along the international border and the LoC have been responded "with double impact".

Deswal said a few incidents of smuggling or people crossing from the Bangladesh border have been reported over the last month.

According to the BSF data, over 20,000 cattle were smuggled to Bangladesh from January 1 to March 24. After the lockdown, this number has come down to around 300. Smuggling of heroin, drugs, gold, and silver has drastically reduced since March 25 when the lockdown was imposed.

According to the data, 97 kg of heroin was seized along the India-Pakistan border in Punjab between January 1 and March 24, while only 17 kg heroin was seized from March 25 till April 12.

"There has been no infiltration of terrorists. A couple of incidents had taken place in Punjab when a Pakistani national was stopped from crossing over on March 25 at Pulmoran in Amritsar while another Pakistani was apprehended from Bamer in Ferozepur on March 26. Otherwise, the border is quiet," said a BSF officer who did not wish to be named.

The BSF is responsible for guarding the 2,289-kms border with Pakistan from Gujarat to Jammu. It also manages 237-km long LoC under the army's operational control. The BSF guards the entire 4,092 km-long border with Bangladesh.

Deswal said they were maintaining 100% vigil along the India-China border as well. He added the BSF and ITBP are now Covid-19 free and a few cases reported have been cured. "We have told all the troops and their families to undertake extra physical exercise as having a healthy body is the best medicine against the coronavirus," Deswal said. He added they have begun calling troopers, who have been on extended leave due to Covid-19 lockdown, back to duty from areas that have reported no cases.

He said the ITBP is also making masks and Personal Protection Equipment for the Central Industrial Security Force, which may resume Delhi metro and airport services soon.

Deswal has also briefed the troops deployed at Indian embassies in Afghanistan and Sri Lanka on the safety measures.

https://www.hindustantimes.com/india-news/all-borders-sealed-to-keep-out-infections/story-yNP70nRWwQX9X4QPZ93nvM.html

Defence Strategic: National/International

THE TIMES OF INDIA

Fri, 01 May 2020

Cut in Defence budget should not alter the path for modernization

By SD Pradhan

Disruption in economic growth by the current pandemic was expected. It has stopped economic activities and their revival would be a serious challenge world over. India is certainly not an exception. Like all countries its economy has suffered considerably and is imperative to make suitable adjustments in the expenditure to meet the unforeseen calamity.

However, the needs for the defence sector should be carefully examined to ensure that our long term goals for modernisation of forces do not get adversely affected. This is all the more important as the defence budget for the current year 2020-2021 was not sufficient to meet the requirements of the big-ticket items. The defence budget of Rs 3.37 lakh crore is merely 5.8% more than the previous year- hardly to cover inflation. Out of this, Rs 1.18 lakh crore is under the capital outlay and Rs 2.18 lakh crore under the revenue head. The capital outlay for 2019-2020 was Rs 1.08 lakh crore and in the revised estimate it was Rs 1.15 lakh crore. Hence, the increase in the capital outlay was negligible.

The above had attracted concerns of defence experts that this meagre increase could drastically affect the major acquisitions of the Indian Armed Forces. The Indian Navy is demanding restoration of 18% of the defence budget since 2012 from the current level of 13%. Soon after the announcement of the budget, it was indicated by the experts that the Indian Armed Forces would have to rework plans for acquisition of new equipment and weaponry.

In the above context, the recent announcement that the defence budget could be slashed by 20 to 40 per cent is worrisome. This means the reduction would be between Rs 40,000 crore and Rs 80,000 crore. This would further curtail acquisitions in the current year.

In the present context, some readjustment would be necessary but it must be kept in view that our goals for modernisation remain unchanged. Our past experience in this regard deserves attention.

Prior to 1962, India had been neglecting defence sector and we had to suffer for want of contemporary weapons. Thanks to the war, our attention was focused on strengthening of Indian Armed Forces which paid rich dividends in 1965 and 1971 war. Later the process of modernisation of armed forces pushed to lower priority. The Kargil Review Committee had examined the view of experts that enhanced defence budget was necessary for modernisation. While it did not advocate any percentage, it stressed that the modernisation process should be accelerated. Subsequently, the National Security Advisory Board carried out two studies- the National Security Review and National Defence Review. Both stressed the need for speeding up the process of modernisation of forces, keeping in view our enhanced requirements.

While India need not compete with China, its defence modernisation would have security implications. The Chinese in the last 20 years have increased their official budget by 850%. Experts point out that actual budget at least one and a half times more than the official budget. This country has close defence links with Pakistan and keeps on getting advanced weapons from China. We have to cater to the worst-case scenario of conflict at two fronts.

China was reported to have conducted an underground nuclear test. One can be certain that its data would be shared with Pakistan. The recent report of the US State Department has highlighted the continued proliferation activities of China and its earlier assessment that China had biological warfare capabilities.

The manner in which China had concealed information on Coronavirus, suggests the need for investing more on biological warfare by the Indian Armed Forces.

Given the economic slowdown and shortfall in the government's revenue collection, which is worsened by the pandemic, cut in the defence budget is unavoidable. The CDS Gen Bipin Rawat has a daunting task of making readjustments that would have minimal impact on the modernisation process. The armed forces are considering introducing reforms and curtailing the manpower. Gen Rawat has to work out a fine balance between the manpower cost and the modernisation expenditure. Final goals would have to be pursued for modernisation of forces keeping in view the fast changes in our security environment. It may be pointed out that the modernisation process of the Armed Forces has been explicitly spelt out in the Long Term Integrated Perspective Plan (LTIPP), which had been approved by the Ministry of Defence. The LTIPP covers the period up to 2027. We had been giving emphasis on the projects which are 'Made in India' to enhance our indigenous capability. This should be given a greater emphasis now as it would be cost-effective. Overall national security interests should also be kept in view while working out adjustments in the modernisation plan of armed forces.

(Disclaimer: Views expressed above are the author's own.)

https://timesofindia.indiatimes.com/blogs/ChanakyaCode/cut-in-defence-budget-should-not-alter-the-path-for-modernisation/

ThePrint

Fri, 01 May 2020

Bureaucracy intact in Indian military. DMA only brings ill-advised orders for armed forces

CDS Rawat-led Department of Military Affairs is trying to fix measures for habitat and infrastructure projects of the armed forces. But its measures signal far-reaching reforms

By Lt. Gen H S Panag (Retd)

Acryptic letter dated 18 March 2020, issued by the newly created Department of Military Affairs, appeared on social media platforms last week. It gave the first formal indication of some "concrete reforms" being initiated by the department headed by Chief of Defence Staff General Bipin Rawat.

The subject of the letter was about the optimisation measures to be adopted with respect to Annual Major Works Programme, which covers the habitat and infrastructure-related construction projects of the three services of the armed forces — Army, Navy and Air Force. But the measures specified in the letter, by implication, indirectly signalled far-reaching reforms to ensure economy of expenditure and reduction of manpower. The Department of Military Affairs (DMA) has not denied the letter.

The DMA letter is a typical example of bureaucratic approach wherein the need for economy of expenditure is viewed in isolation, disregarding a host of other factors and operational efficiency eventually leading to higher expenditure.

As per the optimisation measures, there should be one officer mess per station instead of 15-20 at the scale of one per unit; scale of Junior Commissioned Officers' clubs should be reduced to 50 per cent of authorised strength; the number of cook houses for 'Other Ranks' should be reduced to only two per unit instead of four-five authorised per subunit of 125-150 soldiers; medical inspection rooms/other ranks' institutes/family welfare centres/weapon simulator rooms to be planned on the scale of one per station instead of one per major unit; armoured vehicle garages to be in tin sheds instead of concrete structures; and wheeled vehicles to be parked in temporary tin sheds.

It is not known whether a separate policy letter has been issued covering the manpower and expenditure saved as a result of the above-mentioned optimisation measures, the implications for transition from peace to field/mobilisation for battle, and whether these measures are only for future works or part of overall reforms.

Officers, JCOs, and OR Messes

Units and formations in the armed forces are organised and structured to operationally and administratively operate as self-reliant independent entities with focus on deployment for war at a short notice. Given our threat scenarios and operational strategy even from peace stations, units and formations are expected to mobilise within 24 hours during war times and also conduct annual rehearsals and collective training closer to operational areas.

The dining of officers, JCOs and Other Ranks is organised in officers' messes, JCOs' messes/clubs and dining halls with attached cook houses respectively. In operational areas and in battle, except for unit headquarters, all ranks are dependent on common cook houses. The officers' messes and JCO clubs also house the bachelor officers/JCOs or those living without families in peace stations. The officers' messes, and to some extent the JCO messes, have also become the repository of unit traditions in form of trophies, memorabilia and archives.

As for older units, these institutions have become virtual museums. They also reflect the hierarchy of rank structure, and attendant perks/privileges, which are part of military culture and functioning. Other Ranks' dining halls are also organised to promote sub-unit ethos and optimising the numbers at the scale of 100-150 soldiers beyond which these are difficult to manage.

Over the last 50 years, most modern armies have done away with officers' messes and JCO/sergeant' messes on financial grounds and to promote egalitarianism. Even the British Army, from which we inherited this culture, is in the process of introducing radical reforms such as doing away with the regimental system and the mess culture. To this extent, there is a case to shut down the officers' messes/JCO clubs and have an optimum, common number of messes for all ranks in each unit.

However, the benefit of this reform has to be weighed against the adverse effect on traditions, ethos and culture of the Indian armed forces. Also, the peacetime structures have to adapt to field/battle conditions at 24-hour notice keeping in mind our threats and strategy. It may be mentioned that similar optimisation with respect to officers' messes was tried in the early 1970s only to be given up.

Optimisation on Station Basis

Apart from the institutions mentioned above, the optimisation of other institutions and facilities on station basis has to be examined keeping in mind the number of soldiers, travel time within the station, and field/battle requirements.

Other Ranks institutes, medical inspection rooms, and simulator infrastructure can easily be optimised as per station or sector basis. In some armies, officers' clubs and Other Ranks institutes have been done away with on financial grounds and availability and affordability of commercial facilities. However, in our context, security constraints have to be kept in mind as well.

Garages for Equipment

It is a popular military dictum that it is not the gun but the man behind the gun that matters most in a battle. But the best soldier is of no use if the gun is in a poor functional state.

The specifications of buildings and garages for storage and maintenance of costly military equipment have been scientifically laid down. Any tinkering with these specifications will be at the cost of reducing the life of the equipment and a classic case of being paisa wise and rupee foolish.

There is some merit in parking non-specialist wheeled vehicles in the open or in temporary sheds, but for specialist and armoured vehicles, and other combat equipment, it is best to adhere to scientific specifications.

Flawed Method for Reform

Fifty years ago, due to shortage of accommodation, a large number of units were housed in temporary tents. Soon, the cost of replacement of tents due to wear and tear became prohibitive. Tents were replaced by temporary single-brick and asbestos-roof shelters with a life span of 7-10 years. Budget constraints led to indefinite extension of their life wherein the cost of maintenance eventually became more than the original cost and over 20 years, the total cost was more than the cost of permanent accommodation.

The only difference after the creation of the DMA seems to be that the services now have to deal with ill-thought-out orders issued by the same old bureaucracy, though in a new avatar. The letter was signed by an 'under secretary' conveying the orders of "Secretary, DMA & CDS" – ironically, a demotion in status for a former Chief of Army Staff who ranks above a secretary to the government of India.

(Lt Gen H S Panag PVSM, AVSM (R) served in the Indian Army for 40 years. He was GOC in C Northern Command and Central Command. Post retirement, he was Member of Armed Forces Tribunal. Views are personal.)

https://theprint.in/opinion/bureaucracy-intact-in-indian-military-dma-only-brings-ill-advised-orders-for-armed-forces/411671/

BHARAT SHAKTI
Self-Reliance in Defence

Fri, 01 May 2020

Army's modernisation will not suffer; Make in India is the way forward: Army Chief Gen Naravane

By Nitin A. Gokhale

With the Chinese virus sweeping through the globe, causing death and ravaging livelihoods and economies, many countries like India may have to downgrade budgetary allocations (including in Defence) going forward. Although there will be cuts, they shouldn't be so deep as to compromise our entire national security framework, says Army Chief General MM Naravane. Speaking exclusively to BharatShakti.in Editor-in-Chief Nitin A. Gokhale, Gen Naravane says expenditure on defence should be seen as an investment and only when a nation is secure it prospers. What should also be kept in mind, as the General says, is that there are two neighbours that are inimical to our country. And that India is a security provider for the whole of South Asia. Gen. Naravane, who recently visited Jammu & Kashmir, says if Pakistan's strategy has been of death by a thousand cuts, India's strategy will be of death by a thousand and one cuts.

Transcript

Nitin Gokhale: Hello, and welcome to BharatShakti.in. I'm Nitin Gokhale. And I'm privileged to have with me, the Chief of the Indian Army General M M Naravane talking to us on the Army's contribution in combating COVID-19 pandemic across India, and of course, his future plans for the Army's restructuring and modernising.

Gen Naravane welcome to this programme.

Army Chief: Thank you very much, Nitin.

Nitin Gokhale: You're about to complete about four months into being in this chair to go on 31st of December 2019. How has been the experience so far? What have been the main challenges?

Army Chief: Well, the experience so far has of course been very nice. When I had taken over, during the Army Day press conference outlined some of my guiding philosophy, which was allegiance, belief, contiguity, integration, training personnel and quality and I'm trying to build upon those. When I took over, at two years and four months, as my tenure as the Chief, these four months as you have pointed out, I have used it to go around to various formations, see the situation on the ground. And based on that, to try and formulate what should be the roadmap for the two years to come. These have been very interesting for months because I have visited places where I have not been since my days as a Second Lieutenant, that's long ago. So, this refresher was required, so that I can take a holistic view of the entire Army, see the inputs from the ground so that we don't go wrong. As we go ahead.

As any Chief would want, he would always like to further improve upon whatever he has inherited. And further enhance the operational standards, the operational readiness and make this force more fighting fit. So, we are working towards that. We have identified how we can further enhance our standards and that will be as a result of a combination of different post structuring or post structures. Once we decide upon that, how to manage this new force in terms of equipment, arms, mining staffing levels, and once these two things are in place, then what would be the way

that we strategize or changes strategy in keeping with the changing times and our amendments to our tactics, techniques, procedures.

So, keeping all this in mind, I am in the process of formulating certain goals short term, medium term, long term and I hope that should be able to achieve at least a majority of those. These goals will address all these issues without leaving anyone behind. It will address all arms and services. It will address equipment, modernization issues, HR concerns, and so on and so forth.

Nitin Gokhale: That's great to know because you've actually encapsulated your vision and planning for the force itself. But in the middle of all this, we have been hit – the world has been hit by the COVID-19 pandemic. It's unprecedented in its fury and spread. I know that the Indian Army is at the forefront of this battle. Give us some idea about what the Indian Army is doing and how it is helping the national effort?

Army Chief: The COVID crisis has certainly been a very disruptive influence. We always have been talking about Black Swan events, and theorising about that but we never really expected that to actually happen.

Therefore this has come as a disruptive influence. Seeing it at a larger level, it is going to make a difference in how we operate in the future, in our way of life and I'm talking beyond the army also.

True test is something which we will have to factor in not only COVID but similar kind of things. Whenever we do anything in the future, we will have to do it under this kind of overhang. So that we don't get taken by surprise ever again.

As far as the COVID battle is concerned, we have been monitoring the global situation and the internal situation. And based on that and the inputs that we were getting, we had taken some remedial measures as early as middle of February. I had made a point that post preservation is my main task. My post are absolutely fighting fit. Unless my Army is fit and free from infection, I will not be able to do the full justice to the entire gamut of roles that have to perform both guarding the borders, looking after the counter insurgency, counter-terrorism grid, both in the north and northeast as well as to come to the aid of the civil administration as required.

Fortunately, we have not had too many cases. We have had 14 cases so far only and out of that, two have already recovered and back on active duty. That part is well under control. As far as the assistance to the civil administration are concerned, we were the first one to set up a quarantine camp, which came about at Manesar, that is where the first lot of people came over evacuated from Wuhan. After that, we made two more camps as Jaisalmer and Jodhpur, both catering for about 700 and 500 each. Where evacuees have come from various parts of the world. And after having done their mandatory quarantine and testing, and so on and so forth, even send them back to their home states. And that strength in those camps has now come down from 400 to 500 to about 100 and 150.

Nitin Gokhale: But the COVID is also altered many of the old notions, old training methods, and doctrines. What is new that you have done or some innovative methods or have adopted for adjusting your training, transporting personnel? Give us some ideas on that?

Army Chief: If you see the effect of the COVID there are certain positives and negatives by virtue of being in the army. If you look at the positives, positives are that we are in our military camps and our cantonments, which are as it is isolated from the general populace. So that has been an advantage and of a benefit to us in trying to keep ourselves secure. That has definitely helped and I'll come to that a little later. But the negatives is that we have to operate in close proximity with each other especially in the border areas, when we are doing our operations in the hinterland if you're in an ambush, you have to be close together, you can't stay 5-5 metres apart.

Certain things we can modify, adapt, certain things, we have to be together. Being together, it has been of a benefit to us that we have been segregated from the population – especially in the border areas – in J&K-at high altitude. They can continue operating as per the teachings. Therefore, it has been a positive in that sense.

Nitin Gokhale: In terms of training, your personnel must have been on leave, you had to need to run some military specials. In that sense, Army, of course, has a great ability to do logistics under adverse circumstances, but in this case, did you have to go out to get the planning done – worked with the civil administration, the Railways, how have you managed to do that? About two lakh personnel had to go out and come back is what I heard or read somewhere. Is that correct?

Army Chief: When the lockdown was announced and we came to know that so many of our personnel will have to remain wherever they are, whether boys on course will have to remain where they are undergoing training – whether it is Mhow or Bangalore or Ahmednagar wherever they are. Plus another category was on leave. Now, as far as the people who are well training institutions are concerned, they were as I said, as it is isolated. So, we could say in a sense that they are already green. So, for them to be moved out was not really a problem. The problem was how to move them out. For which then we went in for these military specials, which were of course themselves sanitised. So that was a Green component moving with a mode of transport, which is green, and getting down at the other end, which is also a green area. Our designated units are transit camps. So the entire routes were green channel where they can move around.

Now you come to personnel on leave. When they start coming back, we will first have to quarantine them for 14 days. It is only after that that they will be declared green and then the same system can start. While in the first phase, we are moving out the people on courses, but they're already safe. Simultaneously we've asked people to start re-joining at the nearest army unit. So that again they can go through this period of 14 days quarantine and testing if required.

The first phase is over, then the phase two we will be able to start. We have such things put into motion right after force preservation. The next task comes is force regeneration. When we bring this task as we cannot do it endlessly. The other lot has to go on leave. This is a continuous cycle. As I said, you will have to now make our processes, assuming that this COVID threat is not going to go away, anytime soon.

Nitin Gokhale: Apart from the immediate things that you have done, I also want to look at the larger issue. I remember talking about asymmetric threats, non-traditional security threats. Now, it's clearly proved that a pandemic like this is a possibility. It's a real possibility across the globe. In that sense, the army is the best prepared force, anywhere in the country, most of the country rather. So your doctors have done tremendously well, in terms of protocols, in terms of giving help to civil administration and all that in the future. When you look at force structuring and force preservation that you have spoken about also, you have doctrines. You will have to factor in all this? How will you do it? And that's the question? Because you've just postponed your army commanders conference. I'm sure you're still talking about it, how to go about it. Can you give us some idea on that?

Army Chief: As a result of this, of course, we will have to rethink on how we will be fighting in the future. And we have, in fact, doing some brainstorming on this as we speak. We're taking inputs from our regional commands, and trying to draw out a roadmap. But that said, we've always had capability to fight in a NBC environment – nuclear biological chemical warfare environment. It is not that we do not have any capacities or capabilities at all, but probably we will have to build further on them may not be to that high intensity as classical NBC environment is concerned. But lower intensity to cater for such kind of pandemics, which may not be that serious as far as mortality is concerned.

Nitin Gokhale: So, CBRN which used to be like, you know, one of the peripheral issues will take centre stage in the future planning and future doctrines and tactics that will come. That's what I'm guessing as you mentioned just now. But let me come to the more mundane issues like you have had this plan your predecessor had made this plan about IBG's Integrated BattleGroups, and the restructuring of the army, making a leaner and meaner, the ShekatkarCommittee report. How will that now get factored into all this? How will that get affected?

Army Chief: This restructuring is the one get affected in that sense, as I mentioned right at the beginning, when you're going for more efficient, try to enhance the effectiveness of the force. Those three-four factors come into play, and one of them is post-restructuring. That is very much still a work in progress. We have identified the formations which will undergo this change in the first phase. It is only that things have now got delayed because of not being able to move out and actually put that into motion. But that is something which is going to happen. The IBC concept will happen. The restructuring of the Army Headquarters will happen. That is the way for the future. There is no doubt in my mind that future wars will be going in that direction.

Nitin Gokhale: So in that respect, one more concern that is being expressed across the specialist field of defence and defence analysis is also about the pressure under which the defence budget will come given the precarious economic condition that is going to be staring just not at our country, but all the countries across the globe. Probably in that sense, will lower defence budgets or squeezed defence budgets affect your modernization plans, your replenishment plans, how are you looking at that challenge going forward?

Army Chief: Firstly, as far as the budget is concerned, I would like to make one point that it is government's responsibility to provide for his citizens a safe and secure environment.Only when you have a safe and secure environment, can the country flourish. So, expenditure on defence will be seen as an investment. We also contribute through the armed forces. And if you see past incidents which have taken place, whether it is 26/11, Doklam or the Parliament Attacks – whenever such incidents have happened, invariably the stock market has gone down. It shakes investor confidence. Keep a strong Armed Forces no matter what! And it is because the country is strong and it is able to face these challenges that the economy remains robust. So, we have to continue investing in national security. I'm not just saying army or armed forces. When the nation is secured, the nation prospers. So, therefore, investment in that has to continue, no matter what the circumstances that cannot be allowed to decline.

We have two neighbours which are inimical to us. That is not going to change. Once again, we have to face the facts that you have to no matter what, even though there will be cuts, they cannot be so deep as to compromise our entire the national security framework. After all, we are not only looking at our own security, but we are a security provider for the whole of South Asia which is a pillar of stability.

Nitin Gokhale: Very well put there Gen Naravane. Talking about neighbours- you recently went to Jammu and Kashmir and you also mentioned there that the Western neighbour Pakistan is continuing with its attempts to send in infiltrators and continuing with the proxy wars. What is your sense? I mean, after having come back from there and even otherwise, why are they doing this? Are they not in a precarious or more precarious condition than India is economically and otherwise?

Army Chief: Well, yes, it is. And in fact, this is a strategy which they've been pursuing for more than two decades now. And the strategy which has not borne fruit, and why they're persisting with the strategy was failing really beats the imagination. First thing that we are taught in the army is that don't reinforce failure. But this just seems to be doing that. Their strategy of death by 1000 cuts, our strategy will be death by 1001 cuts. That's the one always be with us.

They realise that it is a failed strategy, the sooner they realise that it augur well for both countries to have peaceful borders, both of us can grow. I can only leave it at that, that good sense has to prevail. Otherwise, it really beats me that they should continue with the strategy which is not paying any dividends to anybody. That's right.

Nitin Gokhale: So let me move away from the Jammu and Kashmir situation or northeast or wherever. There is one thing that I spoke about the budget and you actually answered it very well, that it's an investment in national security, any budget that is given or money that is spent. One of the complaints that have been there, even before you took over from the Indian defence industry has been that while there is big talk, by the government and by the armed forces, especially by the Army also that Make in India will be our mantra, we will give as many orders as possible to Indian defence companies. The sense that I'm getting – I'm

doing a series on BharatShakti.in by speaking to industry leaders, and they all seem to complain that they don't get enough orders or they don't get enough quick orders in order to sustain themselves. How will you overcome that challenge or that complaint from the Indian industry?

Army Chief: To answer the first part of the question, actually, about the budgetary constraints – there is no doubt that there will be some cuts. We are not denying that. We'll be able to absorb that by cutting down on a few other essential things which we would normally be doing, like our exercises with troops, which involve move of large units and formations, which is an expensive proposition. One month plus lockdown which has happened since movements have not occurred during this month. This automatically resulted in some savings. Through this, we will be able to manage the budget.

I don't think our modernization programmes would suffer to a large extent. Moreover, whatever modernization plans we had, at least, in the coming year, where mostly Make in India or orders going to Indian companies. That is one another way in which the expenditure that we do will kick start our economy because the orders are going to Indian companies and they, in turn, are giving suborders to the smaller MSMEs.

Surely, the downstream flow of this expenditure will actually help all our citizens and all these other enterprises. And as far as the number of orders is concerned actually, as well as the Army's orders book – almost 75% both by cost and by volume, the number of orders have gone to Indian companies. It includes, of course, the Ordnance Factories and the PSUs.

So, it may not be so bad. For the private industries as such- they have perhaps a point that they are not getting adequate orders. We are working on that. We are working towards trying to make the procedures more favourable to the private industries and companies can also participate. This is a fledging we are still experimenting with this. So, obviously they're going to be teething troubles. But as we go by, I'm confident that more and more orders will start going to them. And PSUs and OFBs will have to compete on a level playing field.

Nitin Gokhale: Yeah, I think that's the way forward and you put it very well that the moment, the defence expenditure is put out in the market or you start expending money that will have a cascading effect on the entire industry and thereby on parts of the economy, which I think should be the case. And it reminds me of what happened in the American scenario in 1941/42, when they were drawn into the Second World War, and then they had to really ramp up their production that really boomed into a great economy after that, so war economy is sometimes always becomes a major factor in the country's booming economy. But we'll see whether that will happen or not. But Gen Naravane thank you very much for your time and being so frank about whatever the Army is doing and is planning in the future. Hopefully, we will all come out of this COVID-19 crisis unscathed and, with our health intact, but we hope to see you sometime again on this programme, but for the moment, thank you very much.

Gen Naravane: Thank You. Always a pleasure to talk to you.

Nitin Gokhale: Thank You

https://bharatshakti.in/armys-modernisation-will-not-suffer-make-in-india-is-the-way-forward-army-chief-gen-naravane/

THE ECONOMIC TIMES

Fri, 01 May 2020

Coronavirus: No ceremonial border personnel meeting between Indian and Chinese armies on May 1

Labour Day is celebrated annually on May 1 to celebrate the working class and labourers across the world. On this day, ceremonial Border Personnel Meeting (BPMs) are held between the Indian Army and Chinese PLA at five established locations along the Line of Actual Control (LAC)- Daulat Beg Oldie and Chushul in Ladakh, Bum La and Kibithu in Arunachal Pradesh, and Nathu La in Sikkim

By Shaurya Karanbir Gurung

New Delhi: Ceremonial Border Personnel Meetings between Indian and Chinese armies that were to be held at the India-China border on Friday to mark the occasion of Labour Day or International Workers Day will not take place due to the coronavirus pandemic. The Indian side will instead be wishing their Chinese counterpart over the phone.

Greetings would be exchanged through the hotlines established at the five BPM huts.

Labour Day is celebrated annually on May 1 to celebrate the working class and labourers across the world. On this day, ceremonial Border Personnel Meeting (BPMs) are held between the Indian Army and Chinese PLA at five established locations along the Line of Actual Control (LAC)- Daulat Beg Oldie and Chushul in Ladakh, Bum La and Kibithu in Arunachal Pradesh, and Nathu La in Sikkim. BPMs are ceremonial meetings that are held every year between the Indian Army and Chinese PLA on auspicious occasions for the two nations, which besides May 1 also include Independence Day, Republic Day and PLA Day (August 1). During the meetings, the two armies engage in discussions, sports and group activities, which are meant to ensure peace at the LAC and harmony between each other.

This time, however, the BPMs will not be held on May 1 due to the coronavirus outbreak. “Ceremonial BPMs are hosted by the PLA for celebrating International Workers Day. But, the BPMs will not be taking place, due to the coronavirus situation. We will be wishing them over the phone,” an official said on the condition of anonymity.

Greetings would be exchanged through the hotlines established at the five BPM huts. Under normal circumstances, the Chinese side would have hosted the Indian officials on their side of the border. For example, last October a ceremonial BPM was held at Damai, which is on the Chinese side and is about a three-km walk away from Wacha in the Kibithu sector, where the Indian side would host the Chinese on Republic Day and Independence Day. Other Chinese BPM huts are Moldo opposite Chushul and TWD opposite Daulat Beg Oldie.

BPMs have also taken place on Diwali and Baisakhi, but these are not part of the official schedule. In January, the two sides held a BPM at the Daulat-Beg Oldie-TWD meeting point to celebrate the Chinese spring festival.

https://economictimes.indiatimes.com/news/defence/coronavirus-no-ceremonial-border-personnel-meeting-between-indian-and-chinese-armies-on-may-1/articleshow/75474684.cms

Fri, 01 May 2020

India qualifies to become permanent member of UNSC, Says Syed Akbaruddin

India is qualified to become a permanent member of the United Nations Security Council, said country's Permanent Representative at the United Nations Syed Akbaruddin, according to reports. "One of India's aspirational goals was, is and will remain permanent membership of the Security Council, because we feel by any present-day calculus, we would qualify for the status," he told The Hindu.

Explaining further, he said the expansion and reform of the Security Council is not an India-centric issue and involves a 'host of teams' as many believe that India is 'sui generic.'"India, in many ways, is a sui generis country. It's a country of a billion-plus, it's a country which is a democracy, perhaps the only example in history of a billion-plus people working together in a democratic framework. We will bring to it those values and strengths of being able to work cohesively among disparate entities. That's our USP, we try and work out solutions," he added.

The official's comment came as the Ministry of External Affairs (MEA) announced a change of guard with veteran diplomat TS Tirumurti named as India's next Permanent Representative to the United Nations. Tirumurti will replace Akbaruddin, who has held the position for over four and a half years. He retires on 30 April.

The change was announced as India gears up to join the UNSC in 2021 as a non-permanent member.

While Russian Foreign Minister Sergei Lavrov, during his visit to New Delhi, had backed India and Brazil entry into the UNSC as permanent members, China has downplayed the comments.

Earlier in the year, China said all parties have "major differences" in the matter and instead advocated for a "package solution."

Reacting to Lavrov's statement, Chinese Foreign Ministry spokesman Geng Shuang had said member countries of the UN have differences over reforms in the world body.

China, which has veto power in the UNSC, is one of its five permanent members and has been stonewalling India's efforts to become a permanent member of the powerful UN body for years. Beijing has pointed out lack of consensus even though the other four countries, US, UK, France and Russia, have backed New Delhi's membership.

Meanwhile, the MEA also appointed two envoys to Gulf countries. Deepak Mittal, who was the Joint Secretary in Pakistan, Afghanistan, and Iran has been appointed as the next Ambassador to Qatar. While another senior diplomat Piyush Srivastava, who has served as the Joint Secretary (North) in MEA, has been appointed as India's next Ambassador to the Kingdom of Bahrain.

The ministry has transferred Ambassador to Philippines Jaideep Mazumdar to head the embassy in Austria. Joint Secretary in MEA Namrata Kumar has been appointed as the next India Ambassador to the Republic of Slovenia.

https://idrw.org/india-qualifies-to-become-permanent-member-of-unsc-says-syed-akbaruddin/#more-226620

Fri, 01 May 2020

India and Pakistan's nuclear procurement networks are larger than thought, study shows

Hundreds of foreign companies are actively procuring components for India and Pakistan's nuclear programmes, taking advantage of gaps in the global regulation of the industry, according to a report by a US-based research group. Using open-source data, the nonprofit Centre for Advance Defense Studies (C4ADS) report provides one of the most comprehensive overviews of networks supplying the rivals, in a region regarded as one of the world's most dangerous nuclear flashpoints.

"India and Pakistan are taking advantage of gaps in global non-proliferation regimes and export controls to get what they need," said Jack Margolin, a C4ADS analyst and co-author of the report.

It is seldom possible to determine whether individual transactions are illegal by using publicly available data, Margolin said, and the report does not suggest that companies mentioned broke national or international laws or regulations.

But past reports by the think tank, whose financial backers include the Carnegie Corporation and the Wyss Foundation, have often led to action by law enforcement agencies.

Spokesmen from the offices of India's Prime Minister Narendra Modi, and Pakistan's Prime Minister Imran Khan did not respond to requests for comment. Pakistan's military, which plays a major role in decision-making for the nuclear weapons programme, also declined to comment.

To identify companies involved, C4ADS analysed more than 125 million records of public trade and tender data and documents, and then checked them against already-identified entities listed by export control authorities in the United States and Japan.

Pakistan, which is subject to strict international export controls on its programme, has 113 suspected foreign suppliers listed by the United States and Japan. But the C4ADS report found an additional 46, many in shipment hubs like Hong Kong, Singapore and the United Arab Emirates.

"In Pakistan's case, they have a lot more stringent controls, and they get around these by using transnational networks… and exploiting opaque jurisdictions," Margolin said.

The father of Pakistan's atomic bomb, AQ Khan, admitted in 2004 to selling nuclear technology to North Korea, Iran and Libya. He was pardoned a day later by Pakistani authorities, which have refused requests from international investigators to question him.

India has a waiver that allows it to buy nuclear technology from international markets. The Indian government allows inspections of some nuclear facilities by the International Atomic Energy Agency, but not all of them.

Neither India nor Pakistan have signed the international Treaty on the Non-Proliferation of Nuclear Weapons, adhered to by most nuclear powers. Consequently, they are not obliged to submit to IAEA oversight over all of their facilities.

C4ADS identified 222 companies that did business with the nuclear facilities in India that had no IAEA oversight. Of these, 86 companies did business with more than one such nuclear facility in India.

"It's evidence that more needs to be done, and that there needs to be a more sophisticated approach taken to India," Margolin said. "Just because the product is not explicitly bound for a military facility, that doesn't mean that the due diligence process ends there."

India and Pakistan have gone to war three times – twice over Kashmir – since they won independence from British colonial rule in 1947.

Having for years secretly developed nuclear weapons capability, the two declared themselves nuclear powers following tit-for-tat atomic tests in 1998.

A few years later, in 2002, the two foes almost went to war for a fourth time, following an attack by Pakistan-based militants on the Parliament in New Delhi. And a year ago, a suicide attack by a Pakistan-based militant group in a part of Kashmir controlled by India sparked another flare up in tensions.

Both countries are estimated to have around 150 useable nuclear warheads apiece, according to the Federation of American Scientists, a nonprofit group tracking stockpiles of nuclear weapons.

https://idrw.org/india-and-pakistans-nuclear-procurement-networks-are-larger-than-thought-study-shows/#more-226611

Fri, 01 May 2020

Should India convert landing helicopter docks (LHDs) into mini aircraft carrier?

By Mahesh Shetti

India requires four Landing Helicopter Docks to upgrade the Indian Navy's disaster response, amphibious warfare, and island protection capabilities. The Indian Navy issued an RFP for the LHDs in late 2013, but no action was taken on the proposals. The requirement was reaffirmed in May 2017 and fresh bids invited but due to sole contender qualifying for the contract it was again put into backburner.

Indian Navy had plans to equip these four warships with to carry six main battle tanks; 20 infantry combat vehicles; 40 heavy trucks; and more than 900 troops and be armed with air defense missiles and close-in weapon system for safety and also carry Sikorsky S-70B Seahawks helicopters to handle anti-submarine warfare (ASW), anti-surface warfare (ASUW), naval special warfare (NSW) insertion, search and rescue (SAR), combat search and rescue (CSAR), vertical replenishment (VERTREP), and medical evacuation (MEDEVAC) roles.

Tightening budget and post-Chinese virus economy situation in the country will mean that chances of Indian Navy getting approvals for third aircraft carrier with a displacement of 65000 tonnes as planned is unlikely to happen but India's second-hand INS Vikramaditya aircraft carrier which had a life span of only 25 years is unlikely to be active also for too long and will be retired by 2040 due to which we have to either plan a second INS Vikrant class aircraft carriers or opt to convert four LHDs into mini aircraft carriers.

This 20000 tonne proposed LHDs are not decent enough to carry a full load of helicopters and prospective fighter jets so for it to be operated as a mini aircraft carrier it needs to be at least 9000 tonnes more in displacement then planned as seen in the Japanese Izumo-class helicopter destroyer which can carry at least dozen fighter jets like F-35B with Short Take-off and Vertical Landing (STOVL) Capabilities. Russians are also working on a successor to the YAK-141 supersonic vertical takeoff/landing (VTOL) fighter dubbed as 'Yak-150', which according to Russian media reports will be similar in performance to the F-35B and are designed to be operated from the new 20,000-35,000 tonne amphibious assault ships which have been planned for the Russian Navy.

Instead of one large aircraft carrier operating 50 jets in the Indian ocean, converting four LHDs into mini aircraft carriers will give the Indian Navy much needed strategic depth against the Chinese Navy which has been shunning out aircraft carriers at a much faster rate which India can't compete with. Chinese have plans to operate at least 5 aircraft carriers and also developed nuclear-

powered ones soon and have plans to depute at least one aircraft carrier fleet for the Indian Ocean region which will be stationed permanently in the Indian ocean in their naval base in Gwadar or Djibouti.

Indian Navy can't defend two islands chain at the opposite side of the waters with such two aircraft carriers and will require four such LHDs to be India's force multipliers in the region so has to not be overburden in the region by a superior navy in its own backward.

https://idrw.org/should-india-convert-landing-helicopter-docks-lhds-into-mini-aircraft-carrier/#more-226621

THE ECONOMIC TIMES

Fri, 01 May 2020

Govt to make payments to foreign vendors, tells defence PSUs to restart work

The lockdown and its economic toll will not impact committed liabilities that have been budgeted for the armed forces for programs like the Rafale fighter jet deal and the S400 air defence systems. India is also looking at quickly ramping up local defence production, with defence minister Rajnath Singh directing all PSUs to prepare contingency plans for resumption of operations

By Manu Pubby

New Delhi: India will honour payments for ongoing defence procurements to be made to foreign vendors but new acquisitions could get slightly delayed as the government has put in place several expense limitations, even as plans are being put in place to resume operations by defence public sector units (PSU).

The lockdown and its economic toll will not impact committed liabilities that have been budgeted for the armed forces for programs like the Rafale fighter jet deal and the S400 air defence systems, sources told ET.

India is also looking at quickly ramping up local defence production, with defence minister Rajnath Singh directing all PSUs to prepare contingency plans for resumption of operations and make up for lost working time at the earliest.

While there is a fear that PSUs and government-owned shipyards that have ongoing programs could see delayed payments because of the restrictions, the minister has said tPSUs and the private defence industry could `play a major role in the economic revival' of the nation.

On future procurements that have been in the pipeline and were expected to be signed in the coming weeks, sources said, there could be some delays but there are no indications yet that the overall budget would be curtailed for necessary purchases. Among the programs that were expected to be inked in the coming months was the Rs 38,000 crore project to build 83 Tejas Mk1A aircraft by Hindustan Aeronautics Limited. This program has been cleared by the defence ministry but still awaits a nod from the Cabinet Committee on Security.

https://economictimes.indiatimes.com/news/defence/govt-to-make-payments-to-foreign-vendors-tells-defence-psus-to-restart-work/articleshow/75462947.cms

Outlook
THE FULLY LOADED MAGAZINE

Fri, 01 May 2020

Kleos Space awaits ISRO's launch announcement for its satellites

Chennai: The Luxembourg based Kleos Space, a space-powered Radio Frequency Reconnaissance data-as-a-service company on Thursday said it is waiting for Indian space agency"s announcement for launch of its rocket Polar Satellite Launch Vehicle - C49 (PSLV-C49).

In a statement the company said it had shipped the four Kleos Scouting Mission satellites to the Indian satellite integration and rocket launch site at Sriharikota in Andhra Pradesh in February 2020. Shipment occurred on schedule, in preparation for launch activities.

Kleos Space said it eagerly awaits announcement of the launch date for PSLV-C49 by the Indian Space Research Organisation (ISRO). The launch is currently delayed due to COVID-19 restrictions outside its control.

The company said the satellites once launched will cover crucial shipping regions for defence and security customers including the Strait of Hormuz, South China Sea, Australian coast, Southern US coast as well as the East and West African coast.

When launched, Kleos" Scouting Mission satellites will form the foundation of a constellation that delivers a global picture of hidden maritime activity, enhancing the intelligence capability of government and commercial entities when the Automatic Identification System (AIS) is defeated, imagery unclear or targets out of patrol range, the statement said.

*(Disclaimer**:** This story has not been edited by Outlook staff and is auto-generated from news agency feeds. Source: IANS)*

https://www.outlookindia.com/newsscroll/kleos-space-awaits-isros-launch-announcement-for-its-satellites/1819290

EurekAlert!

Fri, 01 May 2020

Scientists suggest using machine learning to predict materials' properties

Researchers suggested using machine learning methods to predict the properties of artificial sapphire crystals

Researchers from Peter the Great St.Petersburg Polytechnic University (SPbPU) in collaboration with colleagues from Southern Federal University and Indian Institute of Technology-Madras (IIT Madras) suggested using machine learning methods to predict the properties of artificial sapphire crystals. It is a unique material widely used in microelectronics, optics and electronics. The results of the study were published in the *Journal of Electronic Science and Technology* and the illustration from the article hit the coverpage of the journal.

Machine learning methods are becoming increasingly popular in accelerating the design of new materials by predicting material properties. The minimization of various defects in the crystal

structure is extremely important for the improvement and development of modern technologies for the artificial sapphire crystal growth.

Scientists note that the purpose of the study is to reduce various defects in sapphire crystals, improve and develop modern technologies for growing artificial crystals.

"Our research team obtained the models of crystal growth parameters' influence on sapphire crystal growth. We developed the software which is considered to be a universal tool for studying the influence of various parameters on the quality of crystals. It can be widely used to assess and predict the defects in a growing crystal," said Alexey Filimonov, Professor of the Higher Engineering Physics School at Peter the Great St. Petersburg Polytechnic University (SPbPU).

IMAGE: Researchers suggested using machine learning methods to predict the properties of artificial sapphire crystals. It is a unique material widely used in microelectronics, optics and electronics. View more

Julia Klunnikova, Associate Professor at Southern Federal University (SFU), adds: "We use the scheme where the predictive modules are developed separately using the Orange Canvas data mining tool. For the decision support system, our group developed a special software for analyzing the quality of the resulting crystals, which allows optimizing the process of crystal growth".

Ravi Kumar, Head of the Laboratory for High Performance Ceramics & Professor in the Dept of Metallurgical and Materials Engg., at the Indian Institute of Technology-Madras (IIT Madras), is confident that the industrial application of such methods will heighten the automatization level of production of crystals with a predefined combination of properties that can be important for a particular application in micro- and nanoelectronics. The solution of these scientific and engineering problems assumes the use of information technologies in production of crystals at a new level.

Currently, the team of authors is working to increase the number of experimental data, which will provide new opportunities for prediction and increase its accuracy. It is planned to recognize crystal images from the furnace chamber and to forecast the conditions' influence on the crystal quality.

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https://www.eurekalert.org/pub_releases/2020-04/ptgs-ssu043020.php

EurekAlert!

Fri, 01 May 2020

Gladstone scientists identify a new potential reservoir of latent HIV

New study identifies a type of T cells in tissues that preferentially supports latent infection by HIV

Scientists have long known that even in the face of antiretroviral therapy, some HIV virus remains in infected individuals forever, hiding in small reservoirs of cells of the immune system. When these individuals discontinue the therapy, the virus almost always rebounds rapidly from the reservoirs, causing deadly symptoms to re-emerge.

These reservoirs remain the main obstacle to curing HIV/AIDS. But there is at present no easy way of targeting reservoir cells for elimination. Nor can scientists efficiently extract reservoir cells from patients to study them, and, ultimately, find ways to control them.

The reason is that the virus in these cells is silent. As a result, the cells do not carry on their surfaces the viral proteins that would make them easy to find.

Scientists have therefore been looking for other means to pinpoint reservoir cells.

In a recent paper in *PLOS Pathogens*, Gladstone Visiting Scientist Nadia Roan, PhD, and her team describe a class of cells that preferentially support latent infection by HIV. These cells are characterized by a surface protein called CD127 and are found in tissues such as lymph nodes, which are thought to harbor a larger share of the HIV reservoir than blood does.

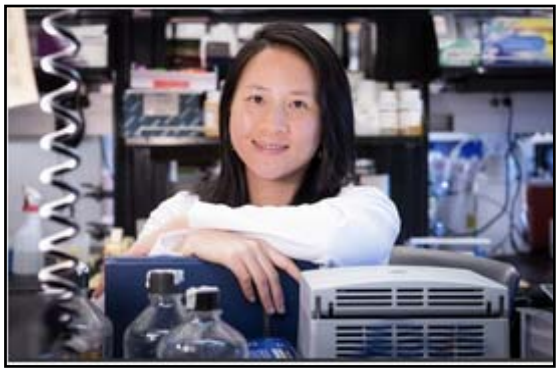

IMAGE: In a recent paper in PLOS Pathogens, Gladstone Visiting Scientist Nadia Roan, PhD, and her team describe a class of cells that preferentially support latent infection by HIV. View more

"Our findings suggest that CD127 cells from tissues may be an important population to target for an HIV cure," says Roan, who is also an associate professor of urology at UC San Francisco.

In addition, scientists can potentially use the CD127 protein as a handle to isolate reservoir cells from patients, and study what makes them able to silence the virus, and occasionally reactivate it.

A New Reservoir?

HIV targets immune cells, known as T cells, that reside primarily in lymphoid tissues, such as lymph nodes and tonsils. Yet HIV infection studies have largely focused on T cells circulating in the blood, which are relatively easy to gain access to--volunteers are more likely to submit to a blood draw than a tissue biopsy.

But focusing on T cells present in the blood is probably giving scientists a skewed view of the reservoir composition.

"We have long suspected that reservoir cells come in different flavors, and that different tissues harbor different types of reservoir cells. But that has been difficult to show because reservoir cells in infected individuals are rare. The vast majority of in vitro models of latency use cell lines or cells circulating in the blood," says Roan.

Roan and her team, by contrast, have been studying HIV infection using tissue specimens. In previous work, her team exposed tonsil cells to HIV in the lab to see which ones were most susceptible to infection. Using a variety of experimental approaches, the team found that tonsil cells with the surface protein CD127 efficiently took up the HIV virus but only rarely let it replicate. By contrast, another type of tonsil cells, carrying CD57 on their surface, readily supported a productive infection.

That was intriguing, but that did not necessarily mean that CD127 were reservoir cells.

"After HIV enters a cell, the cell still has ways to escape infection," says Feng Hsiao, a former research associate in Roan's lab and co-first author of the present study.

One way is to prevent the virus from copying its genome. Unlike the genome of human cells, the HIV genome is made of RNA. One of the virus's first tasks upon entering a cell is to make DNA copies of its RNA genome, using a viral enzyme called reverse transcriptase.

Cells can hamper this step by activating an enzyme called SAMHD1 that depletes the stores of building blocks the virus needs to copy its genome. There was some evidence that this mechanism might be at play in blood cells.

However, in their present work, Roan and her team found that eliminating SAMHD1 by genetic manipulation did not allow CD127 cells to churn out virus, even though it boosted viral production by CD57 cells.

"This suggested to us that CD127 cells blocked the virus at a later step in its life cycle," says Julie Frouard, PhD, a postdoctoral scholar in Roan's lab and the other first-author of the study.

A Preference for Latent Infection

The next step for the virus is to integrate a copy of its genome into the host cell's DNA. Once there, the viral genes can take advantage of the cell machinery to produce their own proteins, which assemble new viral particles that can go infect other cells.

Reservoir cells harbor HIV's genetic material integrated in their own genomes, though they somehow silence it. The occasional mobilization of this material permits the release of infectious virus. Did CD127 tonsil cells allow HIV genome integration?

To answer this question, the scientists extracted the genome of CD127 and CD57 cells that had been exposed to virus in the lab. Using genetic tools that can specifically detect integrated viral DNA sequences, they found that both cell types harbored copies of the virus's genome, even though CD127 cells produced far less virus than CD57 cells did. The CD127 cells appeared to favor a latent infection.

And yet, the virus integrated in CD127 cells is not silenced forever. Roan and her team found that by treating latently infected CD127 cells with agents known to stimulate T cells, they could coax the cells to reactivate the virus.

Hence, CD127 tissue cells could very well serve as reservoir cells in the body, keeping the virus dormant most of the time, yet able to occasionally activate it and release the seeds of a new round of infection.

"The ability of a specific type of tissue T cell to preferentially support latent infection is very intriguing, and can teach us much about how the tissue reservoir becomes established initially," says Roan.

Controlling the Reservoir

To what extent CD127 cells are a major component of the reservoir in people living with HIV awaits follow-up studies analyzing these cells from multiple tissue sites. Preliminary studies from Roan's team are encouraging, as they show that the CD127 marker on the cells' surface can indeed be used to purify enough infected tissue cells from infected individuals to allow further analyses.

Meanwhile, "CD127 tonsil cells exposed to HIV in vitro provide a novel model to study viral latency in tissues," says Roan.

Roan and her team have already started analyzing what makes CD127 cells uniquely prone to silent infections. By comparing all the genes expressed in CD127 and CD57 tonsil cells, they found evidence that CD127 cells are in a quiescent state that may prevent the expression of the virus's genes. Moreover, they also found that the virus's gene products, or RNAs, failed to undergo the necessary processing that would allow them to make viral proteins.

"Ultimately, our hope is that the mechanisms we uncover can be harnessed to control the latent reservoir and move us closer to achieving a cure for HIV," says Roan.

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https://www.eurekalert.org/pub_releases/2020-04/gi-gsi042820.php

ThePrint

Fri, 01May 2020

Antibody from llamas could help block coronavirus entry into cells, say researchers

A smart band to help maintain social distancing to an old arthritis drug for lung damage, ThePrint brings you the top 5 research on Covid-19.

By Mohana Basu

New Delhi: Many countries have been forced to enforce lockdowns in order to curb the spread of the highly infectious novel coronavirus. The virus has also pushed scientists to look for potential solutions to battle Covid-19 nearly everywhere — from existing drugs to antibodies in llamas.

Here are some of the top research from across the world on the Covid-19 front.

Antibodies from llamas could help fight Covid-19

Scientists have found an improbable ally in their hunt for an effective treatment for Covid-19 — antibodies from llamas.

A team comprising of researchers from The University of Texas at Austin, the National Institutes of Health in the US and Ghent University in Belgium have reported their findings about a potential avenue for a coronavirus treatment involving llamas in the journal called Cell.

The researchers have linked two copies of a special kind of antibody produced by llamas to create a new antibody that binds tightly to the spike protein on the coronavirus which causes Covid-19. This protein allows the virus to break into host cells.

Initial tests have shown that the new antibody blocks this spike protein in cells cultured in the lab.

The team is now preparing to conduct pre-clinical studies in animals such as hamsters or nonhuman primates, with the hope that they will be able to test it on humans soon. The goal is to develop a treatment that would help people infected with the virus.

Wearable smart band to help enforce social distancing

Scientists have developed a wearable smart band that can monitor body temperatures and alert users when they are standing too close to another person.

The prototype, called iFeel-You, developed by researchers at IIT-Istituto Italiano di Tecnologia in Italy has been designed to find a practical and cost effective solution to help people respect social distancing during work and other activities, especially when lockdown restrictions are lifted in countries.

The smart band was initially developed for monitoring human body parameters in human-robot collaboration scenarios. It uses algorithms and technologies that researchers introduced in a suit that can detect and measure the whole human body posture.

This smart band releases radio signals that can detect another band which is in close proximity. The two bands then vibrate, emitting an alert signal that helps people respect social distancing.

The device can be used where smartphones and thermal cameras are not viable solutions, such as tourist villages, resorts, sporting club, or amusement parks.

Vaccine via 'painless skin patch' to be tested in mice

US-based biopharmaceutical company has developed a potential vaccine for Covid-19 that can be delivered through a painless skin patch.

Verndari's VaxiPatch is a single-dose vaccination kit that uses a patch with a metal microneedle array to deliver vaccines. The technology eliminates the need for refrigeration, facilitates high-volume, automated manufacturing of vaccines and can be self-administered.

The company, in collaboration with the University of California, Davis, is planning to carry out pre-clinical tests for the vaccine in mice.

If the pre-clinical testing meets safety and efficacy goals, phase 1 human clinical trials could begin.

High viral load in throat swabs may indicate severe infection

The amount of virus present in a throat swab sample can predict the severity of Covid-19 in a patient.

According to a study published in the *Viral Immunology*, the higher the viral load in a sample, the greater the organ damage and the longer it would take for a patient to recover.

For the study, researchers from the First Affiliated Hospital of Nanchang University in China collected nasopharyngeal samples from patients with mild and severe Covid-19 illness.

They measured the level of viral RNA in the sample, also known as the viral load. Viral load correlated positively with the severity of disease symptoms and increased inflammatory factors.

US launches clinical trial to test arthritis drug tocilizumab

Scientists in the US have launched a phase III clinical trial to assess whether tocilizumab — a medication used to treat rheumatoid arthritis and other inflammatory disorders — may help treat Covid-19 patients at risk of developing serious lung damage.

Tocilizumab is a monoclonal antibody-based therapy that works by blocking cellular receptors for interleukin-6 (IL-6), a small protein or cytokine that plays an important role in triggering inflammation as an early immune response to disease.

In some Covid-19 patients, the immune response runs amok generating a "cytokine storm," which can lead to potentially life-threatening damage to lungs and other organs.

The mechanism of tocilizumab suggests a way to dampen and halt that inflammatory response, which might reduce the need for more extreme medical interventions such as mechanical ventilation and greater risk of chronic injury and death, researchers have said.

https://theprint.in/health/antibody-from-llamas-could-help-block-coronavirus-entry-into-cells-say-researchers/411825/

Business Standard

Fri, 01May 2020

In race to stop Covid-19, Indian drugmakers to conduct clinical trials

Glenmark, Zydus Cadila to start trials in May

By Sohini Das & Samreen Ahmad

Mumbai/Bengalure: If the trials go along expected lines, we will soon have an antiviral drug (Favipiravir) for Covid-19 patients in the market.

Glenmark Pharmaceuticals is all set to start clinical trials on mild to moderate coronavirus-positive patients in May.

Meanwhile, several other Indian firms are stepping up efforts to start clinical trials on other drug candidates — such as biologic drug Interferon alfa-2b and antiviral drug Remdesivir.

Cadila Healthcare (Zydus Cadila) will start clinical trials on Interferon alfa-2b, a drug that it already makes commercially for Hepatitis C, for the novel coronavirus.

Meanwhile, industry sources claim that Hyderabad-based Dr Reddy's Laboratories (DRL) is close to signing a voluntary licence agreement with Gilead to make the latter's patented antiviral drug Remdesivir.

Bengaluru's Strides Pharma Science, which started exporting Favipiravir, is also applying for approval for the antiviral in India.

The stocks of both Glenmark and DRL went up on Thursday by 2.3 per cent and 1.3 per cent, respectively. Cadila Healthcare, however, was marginally down. Strides, too, was down 2.8 per cent.

Mumbai-based research-driven drug major Glenmark on Thursday said it has received the drug controller's approval to conduct clinical trials on Favipiravir, sold under the brand name Avigan by Fujifilm Toyama Chemical Co. in Japan for influenza. Fujifilm has already started Phase 3 trials on Favipiravir for novel coronavirus and has also increased the drug's production.

Glenmark will start clinical trials on Favipiravir in May in different centres across the country on 150 patients. The preparations are in place and the trial would be over in May. Around 150 subjects with mild to moderate Covid-19 will be randomised in the study in a 1:1 ratio to Favipiravir with standard supportive care or standalone standard supportive care.

"Treatment duration is a maximum of 14 days and the total study duration will be a maximum 28 days from randomisation," the company said. It added that the company has internally developed the active pharmaceutical ingredient for Favipiravir and would be the first pharmaceutical firm in India to start the Favipiravir trials.

Industry sources revealed that if Glenmark's trials prove successful, the drug could be made available very soon. "Several companies are ready to make the drug and they can even launch it, based on Glenmark's trial outcome. Everyone does not need to run a clinical trial now. The government is moving at unbelievable speed, and the approvals to launch the drug will be expedited too," he said.

Being an oral drug, the pricing of Favipiravir is not expected to be very high either.

Meanwhile, Strides is in the process of applying 'expeditiously' for the approval of the antiviral in India. While the company did not reveal the clinical trial timeline for the drug in India, it said it is evaluating other antivirals that are potentially being considered for Covid-19.

"We are evaluating other antivirals that are being potentially considered for Covid-19. However, we would not be able to share names at this stage," said a Strides spokesperson. According to reports, the company has also looked at Remdesivir as a part of its antiretroviral therapy programme.

Industry experts say it usually takes 11-12 months for a drug to be approved and rolled out in the market. "However, since this is a special case of Covid-19, the process has been expedited and the drug might be available in the market in the next two-three months," said pharma analyst Amey Chalke.

Cadila is gearing up to start clinical trials of Interferon alfa-2b, a biosimilar used to treat Hepatitis C, and the company already makes it commercially. The trials will start in May, informed a senior company executive.

Zydus has approached the Department of Biotechnology to investigate the role of Pegylated Interferon alfa-2b for Covid-19.

A study by the University of Texas Medical Branch, Galveston, demonstrated around 10,000-fold reduction in-virus titer in cells that were pre-treated with Interferon alfa-2b 48 hours earlier.

Studies suggest that given in early stages of the infection, Interferon alfa-2b patient can have significant benefit by reducing the viral load. Interferons are the first line of defence of the human body against a viral attack.

Another drug in focus now globally is Remdesivir. On Wednesday, innovator Gilead said the National Institute of Allergy and Infectious Diseases (NIAID) trial had shown that its repurposed drug Remdesivir, originally developed for Ebola, helped patients recover quicker than standard care.

US government's top infectious disease expert Anthony Fauci, head of NIAID, said the early results of this trial offered 'good news'.

Reports suggest that Gilead's Chief Executive Officer Daniel O'Day has said the company will ensure access is not an issue with this medicine. This is positive news for countries like India, as Remdesivir is patent protected till 2035. Multiple industry sources suggested that Gilead and DRL were close to sign a voluntary licence agreement that will allow DRL to make the drug for the Indian market. DRL did not wish to comment on speculation.

Several Indian companies, according to sources, are working on Remdesivir, so far considered to be the most promising drug against coronavirus. "While companies are working on Favipiravir, results from the Remdesivir study are likely to be more promising. We are, however, not starting trial production or studies on the drug yet until results from the US study come, which may take around a month," said the head of a leading pharma company in India.

Apart from antivirals, drugs such as Sepsivac (used for blood poisoning or sepsis) will soon be used in patient trials. The government itself plans to do the Sepsivac trials.

https://www.business-standard.com/article/current-affairs/in-race-to-stop-covid-19-indian-drugmakers-to-conduct-clinical-trials-120043001423_1.html

बिज़नेस स्टैंडर्ड

Fri, 01May 2020

कोविड की दवा के लिए घरेलू कंपनियों ने तेज किए प्रयास

सोहिनी दास और समरीन अहमद

बाजार में कोविड-19 की दवा जल्द उपलब्ध होने की उम्मीदें बंधती जा रही हैं। अगर सब कुछ ठीक-ठाक रहा तो कोविड-19 के मरीजों के लिए वायरस रोधी दवा फैवीपिरावीर बाजार में जल्द आ सकती है। दवा निर्माता ग्लेनमार्क फार्मासूटिकल्स इस दवा का प्रयोगशाला में मई में इसका परीक्षण (क्लिनिकल ट्रायल) शुरू कर सकती है। जिन मरीजों में कोविड-19 के हल्के से मध्यम लक्षण दिखेंगे उन पर इस दवा का परीक्षण किया जाएगा।

इस बीच, कई अन्य भारतीय कंपनियों ने भी दूसरी दवाओं-जैसे इंटरफेरॉन अल्फा 2बी और रेम्डेसिविर-के परीक्षण की तैयारी भी तेज कर दी है। कैडिला हेल्थकेयर कोविड-19 के लिए इंटरफेरॉन अल्फा 2बी का परीक्षण शुरू करेगी। कंपनी पहले से ही इस दवा का उत्पादन कर रही है। दूसरी तरफ दवा उद्योग के सूत्रों का कहना है कि डॉ. रेड्डाीज लैबोरेटरीज (डीआरएल) एक अमेरिकी दवा कंपनी गिलियड की वायरस निरोधी दवा रेम्डेसिविर बनाने के लिए एक स्वैच्छिक लाइसेंस समझौते पर हस्ताक्षर कर रही है। बेंगलूरु की स्ट्राइड्स फार्मा भी फैवीपिरावीर के लिए मंजूरी प्राप्त करने के लिए आवेदन कर रही है।

शुक्रवार को ग्लेनमार्क और डीआरएल दोनों के शेयरों में क्रमश: 2.3 प्रतिशत और 1.3 प्रतिशत की तेजी दर्ज की गई। कैडिला हेल्थकेयर थोड़ी कमजोर रही जबकि स्टाइड्स में भी 2.8 प्रतिशत की गिरावट दर्ज की गई।

ग्लेनमार्क ने गुरुवार को कहा कि फैवीपिरावीर के परीक्षण के लिए इस दवा नियंत्रक की मंजूरी मिल गई है। फूजीफिल्म तोयामा केमिकल एविगन नाम से इस दवा की बिक्री करती है।

कंपनी ने कोविड-19 के इलाज के लिए फैवीपिरावीर का परीक्षण शुरू कर दिया है और इसका उत्पादन भी बढ़ा दिया है। ग्लेनमार्क मई में देश के विभिन्न केंद्रों में करीब 150 मरीजों पर फैवीपिरावीर के असर का परीक्षण करेगी। सारी तैयारियां पूरी हो चुकी हैं और मई अंत तक इसकी परीक्षण कार्य पूरा हो जाएगा।

दवा उद्योग से जुड़े लोगों का कहना है कि अगर कंपनी के परीक्षण को फैविपीरावीर के परीक्षण में सफलता हाथ लगी तो बाजार में यह दवा जल्द ही उपलब्ध कराई जा सकती है। इस बारे में एक सूत्र ने कहा,'कई कंपनियां कोविड-19 के लिए दवा बनाने के लिए तैयार हैं और वे ग्लेनमार्क के परीक्षण के नतीजों के आधार पर इसे बाजार में उतार सकती है। सभी को परीक्षण करने की जरूरत नहीं है। इस बार सरकार काफी द्रुत गति से काम कर रही है और दवा बाजार में उतारने की अनुमति देने में भी सारी प्रक्रियाएं तेजी से निपटाई जाएंगी।' फैवीपिरावीर दवा की खुराक मरीजों को मुंह से दी जाती है और माना जा रहा है कि इसकी कीमत भी बहुत अधिक नहीं होगी।

इस बीच, बेंगलूरु की स्ट्राइड्स फार्मा ने भारत में फैवीपिरावीर को मंजूरी देने के लिए प्रयास तेज कर दिया है। फैवीपिरावीर का निर्यात करने वाली स्ट्राइड्स भारत की पहली कंपनी बन गई है। हालांकि कंपनी ने भारत में इस दवा के परीक्षण के लिए किसी समय सीमा खुलासा नहीं किया है, लेकिन यह दूसरी दूसरी दवाओं का मूल्यांकन कर रही है, जो कोविड-19 के इलाज में कारगर हो सकती हैं। कंपनी के प्रवक्ता ने इस बारे में कहा,'हम उन दूसरी वायरस निरोधी दवाओं का भी आकलन कर रहे हैं, जो कोविड-19 के लिए इलाज में संभवत: काम आ सकती है। हालांकि फिलहाल इन दवाओं का नाम बताने की स्थिति में नहीं हैं।' खबरों के अनुसार स्ट्राइड्स रेम्डेसिविर पर भी विचार कर रही है।

दवा उद्योग के विशेषज्ञों का कहना है कि किसी दवा को मंजूरी मिलने और बाजार में उपलब्ध होने में 11-12 महीने का वक्त लगता है। दवा विशेषज्ञ एमे चाल्के ने कहा, 'चूंकि, कोविड-19 एक असाधारण मामला है, इसलिए प्रक्रिया तेज कर दी गई है और दवा अगले 2-3 महीनों में बाजार में उपलब्ध हो सकती है।' कैडिला हेल्थकेयर इंटरफेरॉन अल्फा 2बी के प्रयोगशाल परीक्षण के तैयार कर रही है। कंपनी के एक वरिष्ठां अधिकारी ने कहा कि परीक्षण मई में शुरू होगा। जायडस ने भी कोविड-19 के इलाज में पेगायलेटेड इंटरफेरॉन अल्फा 2बी की भूमिका की जाचं के लिए जैव-तकनीकी विभाग से संपर्क किया है।
https://hindi.business-standard.com/storypage.php?autono=168657

जागरण

Fri, 01May 2020

Can Remdesivir Fight Coronavirus: रेम्डेसिविर की खुराक से तेज़ी से ठीक हो रहे हैं कोरोना के मरीज़

नई दिल्ली, लाइफस्टाइल डेस्क: कोरोना वायरस के चिकित्सकीय परीक्षण में एक नया और साकारात्मक परिणान सामने आया है। अमेरीका के शीर्ष महामारी विशेषज्ञ ने कोरोना वायरस के इलाज में रेम्डेसिविर के उपयोग का कागर बताया है। कोरोना के जिन मरीज़ों को रेम्डेसिविर नाम की दवा दी गई उनमें प्लेसीबो की तुलना 30 प्रतिशत तेज़ी से सुधार हुआ।

कैलीफोर्निया स्थित दवा कंपनी गिलीड साइंसेज ने बुधवार को कहा कि प्रारंभिक परिणामों से पता चला कि 'रेम्डेसिविर' दवा की पांच दिन की खुराक के बाद कोविड-19 के मरीजों में से 50 प्रतिशत की हालत में सुधार हुआ और उनमें से आधे से अधिक को दो सप्ताह के अंदर छुट्टी दे दी गई।

परीक्षण में क्या पाया गया

कोरोना वायरस महामारी के फैलने के बाद ऐसा पहली बार हुआ है जब कोई एक दवा इसके इलाज में कारगर साबित हुई हो। आपको बता दें इस ख़तरनाक बीमारी ने अभी तक दो लाख से ज़्यादा लोगों की जान ले ली है। जिसकी वजह से दुनियाभर में लॉकडाउन की स्थिति है ,जिससे विश्व की अर्थव्यवस्था रुक गई है। जिन मरीज़ों को रेम्डेसिविर दवा की खुराक दी गई थी, वह 10 दिनों में स्वस्थ हो गए, जबकि जिन्होंने प्लेसीबो खाई, उन्हें स्वस्थ होने में 15 दिन लगे।

तीसरे चरण के परीक्षण को दवा को स्वीकृति मिलने की प्रक्रिया में अंतिम कदम कहा जाता है। स्टैनफोर्ड यूनिवर्सिटी स्कूल ऑफ मेडिसिन में मेडिसिन के क्लिनिकल प्रोफेसर एवं अध्ययन में शामिल अग्रणी अनुसंधानकर्ताओं में से एक अरुणा सुब्रह्मण्यन ने कहा कि ये परिणाम उत्साहजनक हैं और संकेत करते हैं कि जिन मरीजों ने 'रेम्डेसिविर दवा का पांच दिन तक सेवन किया, उनकी हालत में 10 दिन तक दवा का सेवन करनेवालों की तरह ही सुधार हुआ।

क्या साबित हो पाएगी सुरक्षित

सुब्रह्मण्यन ने कहा कि अतिरिक्त परिणामों की आवश्यकता है, ये परिणाम यह समझने में स्पष्ट मदद करते हैं कि 'रेम्डेसिविर' से किस तरह इलाज किया जा सकता है, यदि यह सुरक्षित और प्रभावी साबित होती है। दवा कंपनी ने भी कहा कि वह कोविड-19 के उपचार के लिए विषाणु रोधी दवा 'रेम्डेसिविर' से संबंधित नेशनल इंस्टिट्यूट ऑफ एलर्जी एंड इन्फेक्शस डिसीज (एनआईएआईडी) के अध्ययन से सामने आए सकारात्मक परिणामों से अवगत है।

'रेम्डेसिविर' को नहीं मिला है लाइसेंस

इसने कहा कि हमें लगता है कि परीक्षण ने अपना प्रारंभिक उद्देश्य हासिल कर लिया है और एनआईएआईडी आगामी ब्रीफिंग में विस्तृत जानकारी उपलब्ध कराएगा। 'रेम्डेसिविर' दवा को हालांकि विश्व में अभी कोई मंजूरी या लाइसेंस नहीं मिला है और न ही कोविड-19 के उपचार में यह अभी तक सुरक्षित या प्रभावी साबित हुई है।

वायरस को अपना प्रतिरूप बनाने से रोकती है दवा

कंपनी ने कहा कि वह कोविड-19 के मरीजों पर तीसरे चरण के परिणामों के बारे में जल्द ही अतिरिक्त जानकारी साझा करेगी। वहीं, चिकित्सा जगत से जुड़ी पत्रिका 'लैंसेट में प्रकाशित एक अध्ययन रिपोर्ट में कहा गया है कि कोविड-19 के उपचार में विषाणु रोधी दवा 'रेम्डेसिविर के पहले औचक परीक्षण में कोई महत्वपूर्ण चिकित्सीय लाभ नहीं मिले हैं। यह अध्ययन चीन स्थित चाइना-जपान फ्रेंडशिप हॉस्पिटल और कैपिटल मेडिकल यूनिवर्सिटी ने किया जिसमें वुहान के अस्पतालों में भर्ती 237 लोगों को शामिल किया गया।

शोधकर्ताओं का कहना है कि 'रेम्डेसिविर' को इबोला के उपचार के लिए विकसित किया गया था और इसे इस तरह से डिज़ाइन किया गया है कि यह विषाणुओं को शरीर के भीतर अपने प्रतिरूप बनाने से रोक सके।

https://www.jagran.com/lifestyle/health-can-remdesivir-fight-coronavirus-research-shows-speedy-recovery-in-patients-20233579.html

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