

New med for drug resistant TB introduced



TB Burden in India and Tamil Nadu

According to WHO Global TB Report-2015, of the estimated 9.6 million global annual incidence of TB, over one-fifth or 2.2 million cases are from India

In 2013, 6,59,389 presumptive cases were screened and 80,407 patients were found positive for TB in Tamil Nadu

SINDUJA JANE @ Chennai

TAKING a step forward in the tough battle against extensively drug-resistant tuberculosis (XDR-TB), the State government began using a new drug for this from Saturday, administering it to two selected patients at the Government Hospital for Thoracic Medicine, Tambaram.

This drug, which is on the World Health Organisation's list of essential medicines, is the first new tuberculosis drug to be approved by the USFDA in over four decades, the patients for which are chosen only after careful screening.

"The drug will be a boon for multi-drug resistant tuberculosis (MDR-TB) patients. The effectiveness of the drug has been proven during the clinical trials in other countries," Health Minister Dr C Vijaya Baskar, a doctor himself, told *Express*.

The treatment using Bedaquiline, the new drug, was launched a week before its scheduled launch in the State.

The drug carries higher risk of mortality, and thus comes with a 'black-box warning' of the risks involved such as changes in heart rhythm and increased mortality. Hence this is recommended only for use when other treatment regimens are ineffective. It will be available only in government facilities and not sold in the market.

"As the drug is not advisable to all due to the risk of causing cardiac problems, we have to select patients to whom this could be administered," Dr A Lakshmi Murali, State TB Control Officer told *Express*.

The patients chosen for this should not have any cardiac problems. The female patients should not be pregnant and they should agree to stay compulsory in hospital for two months so as to be eligible to receive the drug.

"Because of the potential risks involved, district TB control officers were given training in 'Bedaquiline Condition Access Programme' that is exclu-

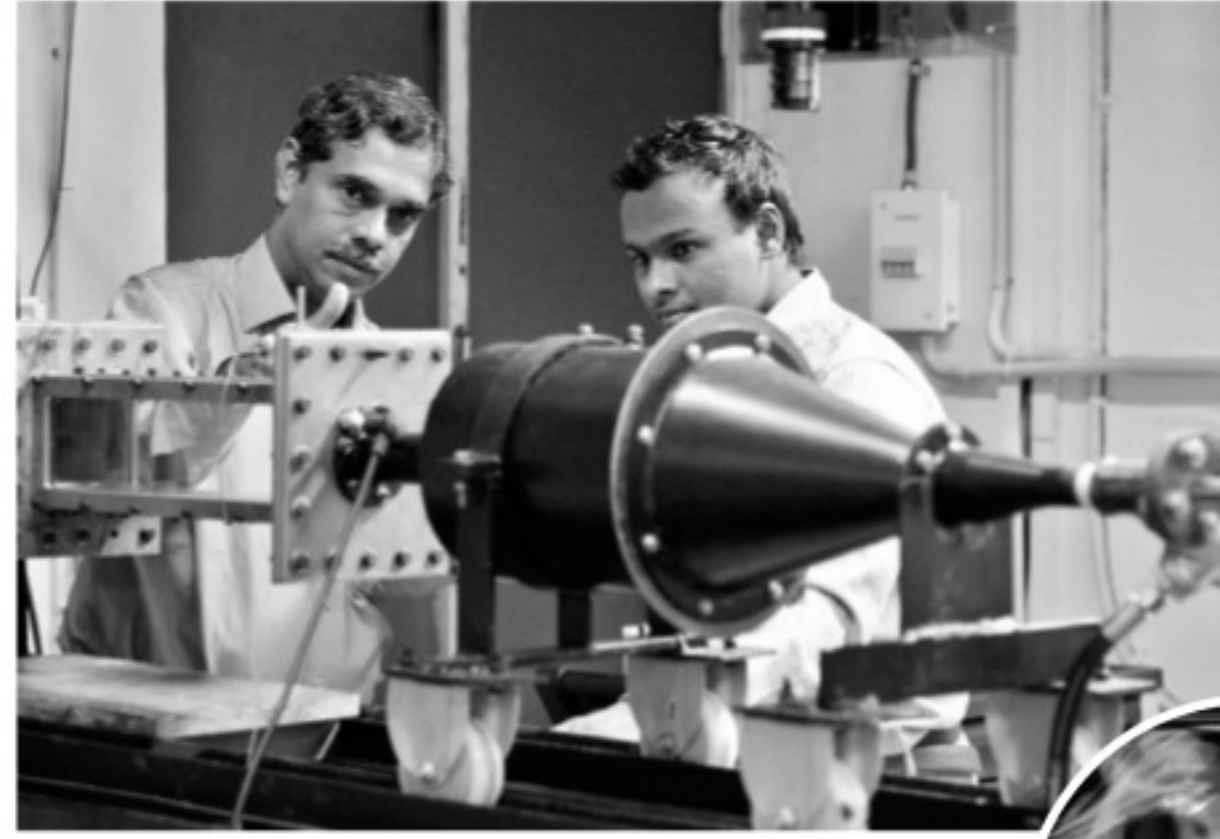
sively framed for this drug. They will monitor the progress of the patients meticulously," she added.

The first batch had officers from Tirunelveli, Thanjavur, Villupuram and Coimbatore who came to Chennai to take the special training before launching this drug.

Once a leading killer, TB does not have the same sting any more after advances made in treatment regimen. Globally nine million new cases are reported annually and about 25 per cent of the people in India are infected with the bacteria, experts say.

But the drug resistant ones are a different story altogether. The bacteria that causes this is resistant to treatment with at least two of the most powerful first-line anti-TB drugs - isoniazid (INH) and rifampicin (RMP)

About five per cent of TB cases in India and two per cent in Tamil Nadu are the drug-resistant variety, Dr Lakshmi added.



Prof R I Sujith and his student Vishnu working on a turbulente combustor at the IIT Madras laboratory | EXPRESS

IIT-M develops warning system for gas turbines

Technology will prevent thermoacoustic instability, which triggers automatic shutdown in power plants

S V KRISHNA CHAITANYA
@ Chennai

(NASA) and our own Indian Space Research Organisation (ISRO).

A group of engineers at the Indian Institute of Technology Madras (IIT-M) has cracked the elusive secret code of thermoacoustic instability, a problem that gas turbine and aerospace industry has been grappling with for decades, incurring losses to the tune of \$1 billion annually. The team has developed a host of precursors, dubbed as the world's first early warning system for gas turbine power plants and jet engines.

The technology has found interest among some of the major players in the sector, including the National Aeronautics and Space Administration

(NASA) and our own Indian Space Research Organisation (ISRO).

"We are exploring the process of working together with the ISRO. However, before we test the technology in aerospace sector, it will be tried first with ground-based engines like gas turbine power plants. We are now in talks with major gas turbine companies such as Ansaldo Energia, General Electric and Siemens to test the technology with real data. It needs lots of testing to root out any lacuna such as triggering of false alarms," Prof R I Sujith of the Department of Aerospace Engineering in IIT-M told *Express*. A key person behind the project, he recently visited NASA in this regard.

Prof Sujith said no technology is

available at present to help predict an impending instability in turbines.

The companies use pressure transducers to measure pressure fluctuations. After reaching the threshold point, the automatic controllers kick in and shut down the engines. Once the turbines are shut, it takes at least an hour to restart - a situation that is cumbersome and costly.

Contracts between the turbine manufacturers and power companies often require the manufacturers to bear the cost of such shutdowns and penalties incurred.

The situation is more critical when such instabilities arise in the engine of an aircraft or rocket, where the option to shut down the engine mid-air does not exist and severe vibrations or breakage of the engine can prove to be fatal. For such engines, extensive tests

have to be run on-ground. However, a substantial number of these engines, especially for rockets, are destroyed while testing. "This is where our technology brings the radical change that industry has been craving for years. We can give several minutes of warning time, may be up to 20 minutes, for a power plant to take evasive action. For liquid rocket engines, it would probably be a few seconds, enough to stabilise the engine," he said.

However, Prof Sujith said it would take at least two to three years for the technology to develop into a full-fledged early warning system and for industrial consumption. The technology's robustness and protocols have to be established in the real scenario, which will take some time. "The companies will first provide historical data of thermoacoustic instabilities. Using the technology, we will try and predict the impending instabilities. This will give a tight understanding of the warning time and threshold limits," he said.

"We can also customise the system, according to the industry specifications. But we have not reached that stage yet," he said.

How they got the breakthrough

While performing experiments in their lab at IIT Madras, Prof Sujith and his team were able to intuitively sense and predict when the system was about to become unstable. On analysing the data just before the instability, they realised that the bursts correspond to a type of behaviour known as 'intermittency' in dynamical system theory, which was a breakthrough

Thermoacoustic Instability

Big engines that produce 500-600 MW electricity operate in lean condition, which means less fuel and more air. They do this to adhere to stringent emission norms. Under such conditions, the engines produce violent sound called thermoacoustic instability. It forces the operator to shut the engines abruptly causing huge production losses

Growing gas turbine sector in India

Gas turbine power plants are popular in Europe and US where natural gas is cheaper. In India, the industry is growing. Currently, the total installed capacity of gas turbine power plants in India as on March is 24,508.63 MW, of which Central-owned units generate 7,555.33 MW

GAS TURBINE POWER PLANTS IN TAMIL NADU

Plant	Installation capacity (MW)	Fuel type
Basin Bridge (BBGTPS)	120	Naphtha
Thirumakkottai Power Station	107.88	Natural gas
Kuttalam Power Station	101	Natural gas
Valuthur Power Station	187.2	Natural gas

INDIAN ORDNANCE FACTORIES
MACHINE TOOL PROTOTYPE FACTORY AMBARNATH
GOVERNMENT OF INDIA, MINISTRY OF DEFENCE
CORRIGENDUM

The General Manager, Machine Tool Prototype Factory, Ambarnath (India) on behalf of the President of India invites Indian manufacturers / suppliers to submit their offer against the Open Tender (Two Bid System), for the following items :

TE No. & Date	Item Description	Quantity	Title	FOR	READ
16TE210016 Dt : 13.04.2016	PLATE PRESSURE FRICTION CLUTCH (CASTING) CHILL CAST TO DRG.NO. IFL 8418.	42 Nos.	Time & last date for collection for tender documents	02.06.2016	23.06.2016
			Last date for submission	03.06.2016 before 2.00 PM	24.06.2016 before 2.00 PM
			Opening Date	03.06.2016 at 2.30 PM	24.06.2016 at 2.30 PM
16TE210018 Dt : 13.04.2016	HAND WHEEL (CASTING) (CHILL CASTING) DS.CAT.NO. 5340-016867.	84 Nos.	Time & last date for collection for tender documents	09.06.2016	11.07.2016
16TE210019 Dt : 13.04.2016	GEAR WORM WHEEL (CASTING) DRG.NO. IFL 8414	34 Nos.	Last date for submission	10.06.2016 before 2.00 PM	12.07.2016 before 2.00 PM
16TE210017 Dt : 13.04.2016	FORGING FOR CLUTCH DISC TO DRG.NO. ILG-1037-3	34 Nos.	Opening Date	10.06.2016 at 2.30 PM	12.07.2016 at 2.30 PM
16TE210046 Dt : 20.04.2016	HAND WHEEL DRG.NO. TG-0765-55-117-111	341 Nos.	Time & last date for collection for tender documents	06.06.2016	20.06.2016
16TE210033 Dt : 17.04.2016	BEARING RING (FORGING) TO DRG. NO. 172-47-106-2/F WEIGHT = 5.3 KG	125 Nos.	Last date for submission	07.06.2016 before 2.00 PM	21.06.2016 before 2.00 PM
16TE210034 Dt : 17.04.2016	SENDING UNIT D-20 TO DRG.NO. D 20-000 CD	31 Nos.	Opening Date	07.06.2016 at 2.30 PM	21.06.2016 at 2.30 PM

Note : All relevant details & terms and conditions etc are available on website : www.tender.gov.in

Sd/- (Ms. ROJALI P) WORKS MANAGER,
FOR GENERAL MANAGER

davp 102011/10477/1617

INDIAN ORDNANCE FACTORIES
ORDNANCE FACTORY KANPUR
GOVERNMENT OF INDIA, MINISTRY OF DEFENCE
CORRIGENDUM

Against Advertisement No. davp 10201/11/1610/1516 published on dt. 04.12.2015, please read following against respective Tender Enquiries General Manager, Ordnance Factory, Kanpur on behalf of President of India invites e-tender through two bid system (Technical Bid and Price Bid) for the following machine:

GLOBAL TENDER ENQUIRY (ONLY THROUGH : E-PROCUREMENT)
DESIGN, MANUFACTURE, SUPPLY, SUPERVISION OF ERECTION & COMMISSIONING OF:-

S. No.	Tender Enquiry No.	Nomenclature	Qty	EMD (in INR)	Pre-bid Conference (PBC) Date	Bid Submission Closing Date & Time	Technical Bid Opening Date & Time
1	T/15025/G/OFC/EO	Horizontal Shrinkage press 650 Ton with Gantry	1	50,00,000	21.07.2016 1000 Hrs	01.09.2016 1800 Hrs	02.09.2016 1000 Hrs
2	T/15026/G/OFC/EO	CNC Double Column Grinding Machine, Grinding Length-2000 mm (min)	1	31,09,000	26.07.2016 1000 Hrs	05.09.2016 1800 Hrs	06.09.2016 1000 Hrs
3	T/15027/G/OFC/EO	CNC Precision Boring Machine with universal milling head	1	39,88,000	28.07.2016 1000 Hrs	07.09.2016 1800 Hrs	08.09.2016 1000 Hrs
4	T/15028/G/OFC/EO	CNC Deep Hole Drilling Machine	1	47,76,000	02.08.2016 1000 Hrs	13.09.2016 1800 Hrs	14.09.2016 1000 Hrs
5	T/15029/G/OFC/EO	CNC Milling Machine, Traverse: X-1600 mm (min.), Y-1400 mm (min.), Z-1500 mm (min.)	2	50,00,000	04.08.2016 1000 Hrs	15.09.2016 1800 Hrs	16.09.2016 1000 Hrs
6	T/15030/G/OFC/EO	Automatic Straightening Machine, Straightening force - 15000KN or higher	1	50,00,000	09.08.2016 1000 Hrs	19.09.2016 1800 Hrs	20.09.2016 1000 Hrs
7	T/15031/G/OFC/EO	CNC Medium Lathe, Swing over carriage - 1200 mm or higher, Centre Distance - 5000 mm or higher	2	25,40,000	11.08.2016 1000 Hrs	21.09.2016 1800 Hrs	22.09.2016 1000 Hrs

Note :

- Please visit website <https://ofbeproc.gov.in> for the detailed information of the tender.
- All vendors may quote for above GETs through e-procurement process.
- No manual offers will be accepted.
- The Vendors who are interested to participate are advised to electronically enroll themselves for Ordnance Factory Kanpur on the website <https://ofbeproc.gov.in> for which they are required to obtain class III Digital Signature Certificate (DSC).
- The DSC may be obtained from agencies certified under IT Act 2000 of Govt. of India. The list of such certified agencies are available on the website <https://ofbeproc.gov.in>.
- Any amendment in the tender enquiry (amendment of Tender opening date, specifications and General conditions etc.) will be available only on the above website as Corrigendum.
- A Pre-Contract Integrity Pact would be signed between buyer and the bidder. Pact will be a preliminary qualification.
- EMD shall be in favour of "General Manager, Ordnance Factory, Kanpur"
- Hard copy of Integrity Pact, if applicable and EMD (in original) must be submitted on or before Bid submission closing date & time at Ordnance Factory, Kanpur, offers without EMD, will be summarily rejected without technical evaluation.
- The Bidders(s), if they deem it necessary, may furnish any information as relevant to their bid to the following Independent Monitor: Name : Mrs. Bulbul Sen (IRS-Retired), Address: C-11/125, Satya Marg, Chanakyapuri, New Delhi-110021. Ph.No. 011-26115657, Mob.No. 09999862888. Email : bsensarkar@gmail.com
- Details of the firm's representative attending the PBC must reach to this office 03 days in advance for Indian Nationals and 10 days for Foreign Nationals to obtain necessary security clearance.
- Purchaser reserves the right to cancel / withdraw the NIT / Tender without assigning any reason.

Asst. General Manager
For General Manager

ORDNANCE FACTORY KANPUR, KALPI ROAD, KANPUR - 208009, INDIA
Fax: 91-0512-2216040, Ph.: 91-0512-2295161-68 (4 lines) Email: ofc.ofb@nic.in

No.: ORDFYS/OFC/DAVP/04/15-16/EO/03

davp 10201/11/10479/1617