ICMR initiates process of vaccine against avian influenza

The Indian Council of Medical Research (ICMR) has invited expression of interest from the eligible organisations, companies, manufacturers for joint collaboration in research and development for development of human vaccine candidate against H5N1.

New Delhi: The ICMR has initiated the process of development of an ingenious human vaccine candidate against highly-pathogenic avian influenza (H5N1). The Indian Council of Medical Research (ICMR) has invited expression of interest from the eligible organisations, companies, manufacturers for joint collaboration in research and development for development of human vaccine candidate against H5N1.

The avian influenza H5N1, a highly pathogenic strain of bird flu, continues to pose a significant threat to animal and human health in India.

Recent outbreaks in 2021, 2023 and 2024 have been reported in several states, primarily affecting poultry and wild birds, the expression of interest document said.

These outbreaks have caused significant economic losses in the poultry industry and raised public health concerns due to the virus's zoonotic potential, it said.

The document stated that avian influenza H5N1 virus poses a grave public health risk because of its high mortality rate and its potential to cause a global pandemic if it mutates to allow sustained human-to-human transmission.

While human cases remain sporadic globally, they highlight the virus's ability to infect humans with severe consequences, the expression of interest document said.

The H5N1 infection in humans has a high case fatality rate, exceeding 50 per cent.

Although human cases are rare and typically result from direct contact with infected birds, the severity of the illness underscores the need for vigilance, the document said.

Symptoms in infected individuals range from fever and respiratory distress to multi-organ failure. In India, no significant human cases have been reported in recent years, but the risk persists due to frequent human-animal interactions in poultry farming and live bird markets.

Despite primarily affecting birds, sporadic human infections with severe outcomes have occurred globally, emphasizing the need for preparedness, it said.

The document highlighted that India's preparedness for H5N1 includes active surveillance and the availability of medical countermeasures such as vaccines and medicines.

"Developing a vaccine for human use is crucial to mitigate the risk of outbreaks, protect vulnerable populations, and ensure readiness in the event of a pandemic. Such a vaccine would serve as a critical tool in controlling the spread of the virus, reducing morbidity and mortality, and alleviating the socio-economic impacts of potential outbreaks," the document stated.

The ICMR has initiated efforts to develop an indigenous vaccine using mRNA or traditional platforms to strengthen India's pandemic preparedness.

> A targeted vaccine, combined with public awareness campaigns and strengthened health infrastructure, will lead to better outcomes in managing future H5N1 outbreaks.
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> "Efforts to develop and deploy effective vaccines, along with robust surveillance and response mechanisms, will ensure that India remains prepared to tackle the challenges posed by Avian Influenza H5N1, safeguarding the human health," the expression of interest document said.

The ICMR-National Institute of Virology (ICMR-NIV), Pune, one of the constituent institutes of the ICMR, is actively working on highly pathogenic avian influenza (HPAI) and low-pathogenic avian influenza viruses. Well-characterized strains of HPAI H5N1 are available at the laboratory, the document said.>

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