DBT-NII team finds BCG encapsulated alginate particle (BEAP) safe and efficient

New Delhi, March 02: BCG (Bacillus Calmette–Guérin) is a live attenuated form of *Mycobacterium bovis* and it is the only vaccine available and used for tuberculosis. The BCG vaccine renders protective immunity in infants till up to 15 years of age but it fails to protect in areas of high TB burden regions. An earlier DBT-National Institute of Immunology study had demonstrated that the alginate coated DPA formulation of BCG encapsulated alginate particle (BEAP) provides enhanced protection as compared to BCG aerosol immunization in mice.

In a new pilot investigation BEAP was evaluated in Indian rhesus macaques *(Macaca mulatta)*. They compared the intratracheal immunization of BEAP in infants' macaques with conventional intradermal BCG and un-immunized controls. They also assessed the safety of the BEAP formulation in infant macaques for up to 12 months post immunization and the efficacy of the formulation was evaluated by an *ex-vivo* infection assay with*M.tb* H37Rv. The findings (https://rdcu.be/ceK2z) indicate that the BCG encapsulated alginate particle (BEAP) is a promising candidate vaccine for TB. This study confirms that when the BEAP is delivered as aerosol to infant *Rhesus macaques* it does not generate a hypersensitive response and elicits an immune response which may provide protection from the TB infection.The ease of delivery and the longer shelf life of at least six months at room temperature are the additional advantages of BEAP.

Reference:

Kesarwani A, Sahu P, Jain K, Sinha P, Mohan KV, Nagpal PS, Singh S, Zaidi R, Nagarajan P, Upadhyay P. (2021) The safety and efficacy of BCG encapsulated alginate particle (BEAP) against M.tb H37Rv infection in Macaca mulatta : A pilot study. Sci Rep. 2021 Feb 4;11(1):3049. doi: 10.1038/s41598-021-82614-5.

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