

Bharat Biotech launches vaccine against typhoid fever

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Bharat Biotech announced the launch of world's first clinically proven typhoid conjugate vaccine Typhbar-TCV™, a fourth generation vaccine against typhoid disease on August 26, 2013. It has been proven to provide long term protection to adults and infants six months and older. The vaccine is significant because currently available Typhoid vaccines fall short in two major characteristics, namely long term protection and protection for children below two years of age, the population that needs it the most.

During its development since 2005 Typhbar-TCV™ was evaluated in ~1200 healthy subjects at nine clinical sites. In the pivotal phase III clinical study, Typhbar-TCV™ presented 98% seroconversion in infants aged six months to 24 months, 99 percent in children between two to fifteen years of age, and 92 percent in the 15 to forty five year age group, as measured by four fold increase in serum IgA responses. It proved to be superior to the Vi polysaccharide typhoid vaccines. Typhbar-TCV™ was also safe and well tolerated in all tested age groups.

"Typhoid fever remains an important public health challenge in many countries of the world mainly because of poor diagnostics and increasing resistance to antibiotics. At present fundamental prevention strategies like improved sanitation, good hygienic practices and access to clean water are still out of reach for many impoverished communities. One of the most cost effective approaches to prevent infectious diseases, are vaccines which are available now and could help control the disease resulting in reduction of unnecessary suffering and adverse financial consequences." Dr. Christian Loucq, M.D., Director-General of the International Vaccine Institute (IVI) said.

Typhoid fever is a life threatening illness caused by the bacterium *Salmonella typhi*, which is transmitted through food or drink contaminated by the faeces or urine of infected people. Symptoms include high fever, malaise, headache, constipation, diarrhoea, etc. Healthy carrier state may follow acute illness. It causes between 250,000 to 600,000 deaths and 20 million illnesses per year, affecting mostly school-age children. The World Health Organization reports 90 percent of typhoid deaths occur in Asia and persists mainly in children under 5 years of age. In India, Typhoid fever is observed throughout the year and a greater number of cases coincide with the rainy season. While typhoid fever can be cured by antibiotics, resistance to

antimicrobials is widespread along with poor diagnostics, hence prevention of typhoid fever is better than the cure.

Acknowledging the effort of his team of scientists that led to this innovation Dr. Krishna M. Ella, Chairman and Managing Director of Bharat Biotech said "Bharat Biotech's Typbar-TCVTM induces 'T' cell dependent response with much higher antibody levels providing a very high rate of immunity. We hope this vaccine will reach millions of people and help reduce the burden of this devastating disease in infants and children." Dr. Ella added.

Bharat Biotech has commenced commercial production of Typbar-TCVTM in pre-filled syringes in its world class vaccine production facility in Genome Valley. The plant has capacity to produce 10 million doses each year, expandable to 50 million doses per year in the future. Bharat Biotech is the largest producer and supplier of Vi typhoid vaccine in the world having distributed over 50 million doses globally. Typbar-TCVTM is available for supplies to global markets such as South East Asia, South America, Africa, Central Asia, and South Asia.