SAFETY AND IMMUNOGENCITY OF COVAXIN one or two doses WHEN ADMINISTERED BY INTRADERMAL ROUTE

Research Proposal · September 2021

DOI: 10.13140/RG.2.2.12525.92640/1

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Dr. Omesh Bharti

Need for the study: There is an acute shortage of Covid -19 vaccines in India & developing countries. If the result of the present study is encouraging, it will result in saving up to four fifth (80%) volume of vaccines-i.e. up to five individuals can be vaccinated by ID dose(0.1mL) as against one individual by IM dosage(0.5mL) of the vaccine.

Rational: Rabies vaccines (PCECV &PVRV) ordinarily given by IM route were also found to be equally efficacious and safe by ID route as lifesaving in Rabies post – exposure prophylaxis (PEP). Recent studies underlines the feasibility of administering COVID vaccines by ID route and having promising results in mRNA-1273 vaccine[1] and ChAdOx1 Vaccine[2] (COVISHIELD) as well as ZyCoV-D, a DNA vaccine[3]. The primary endpoint shall be tolerability and safety. The secondary endpoint shall be seroconversion and specific IgM/IgG concentration against SARS-CoV-2 spike S1 and Receptor Binding Domain (RBD) after the second dose at day 50. We also expect that intradermal use of COVID vaccines may have lesser systemic side effects and volunteers shall be followed up regularly for that up to six months or longer.

Methods: Institutional Ethics Committee (IEC) approval will be obtained. Twenty (20) young healthy adult volunteers in the age group of 18 to 30 years after general health checkup will be randomized and enrolled, ten each for Covaxin 1 or 2 doses ID. These are persons who never had Covid infection / disease in the past nor had Covid 19 vaccination. Signed and witnessed informed consent will be taken. The schedule of testing, vaccination and monitoring of subjects is given vide below:

Day	Antigen	Antibody	Vaccination by ID route (off-label use)	Remarks
0	Compulsory RT-PCR test	Enzyme Chemiluminescence Immunoassay (ECLIA) method Anti-SARS Cov-2 S (IgM&IgG)	-	Results by evening
1	-		0.1 mL into left deltoid in group 1 (I dose)and 0.1ml ID in Rt Deltoid as well in group 11(2dose)	Check for bleb and 30 minutes of observation ; to tele-report any adverse event/s till next visit
29	RT-PCR/RAT	ECLIA method Anti-SARS Cov-2 S (IgM&IgG) And If possible then Abs to Receptor Binding Domain (RBD)	0.1 mL into left deltoid in group 1 (Idose)and 0.1ml ID in Rt Deltoid as well in group 11(2dose)	Check for bleb and 30 minutes of observation ; to tele report any adverse event/s till next visit
50	RT-PCR/RAT	ECLIA method Anti-SARS Cov-2 S (IgM&IgG) If possible then Abs to RBDs And Receptor Binding Domain (RBD)	—	Enquire for Covid symptoms during the interim/preceding period

For assessing the safety of the vaccine, a telemonitoring enquiry will be done for seven consecutive days following each vaccination. Subsequently, the vaccinees are encouraged to self monitor and report in case of any adverse events. Adverse events can be documented and compared historically with those of routine IM administration of COVID vaccine, COVAXIN.

Proposed analysis: The results will be analysed using simple percentages, proportions, mean, range and SD, etc. and compared with known response due to IM Covid vaccination at equal interval of 50 days.

Other considerations: The study is co-terminus following any untoward serious adverse event. If the vaccination is found not efficacious, then the participants will be offered regular Covid -19 vaccination by IM route free of cost. **Study shall be expanded to larger population if results are found encouraging.**

Funding: Institution/Department

Acknowledgements: Our acknowledgements to Dr. M.K.Sudarshan, Founder Chairman APCRI, Bangalore for helping in development of this protocol.

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