

Introduction: As a part of the global effort to combat SARS Cov-2 infection the first immunization program using Covishield vaccine was launched in Sri Lanka in early 2021. To evaluate the success of the initiative it is essential to assess the immune response of recipients.

Methods: It is a hospital based multicenter prospective cohort study. Health care workers and general public between 18-75 years of age were enrolled by consecutive sampling at vaccination centers, National Hospital of Sri Lanka and Colombo South Teaching Hospital. After taking the consent blood samples were collected on day 0, 14, 21, 45 and 90 following the first dose and on day 0, 14 and 3 months after the booster dose. Total antibody levels to receptor binding domain of spike protein were measured using Advia XP chemiluminescent assay method.

Results: Out of 190 recruited participants (45.45% male, 54.55% female) seroconversion observed in 87.5% (77/88) on day 14, 95.0% (127/133) on day 21 and 100% (30/30) on day 45 following a single dose of the vaccine. Greater response was noted on day 45 following the 1st dose (median-14.43 Index, IQR-5.5-34.3) with a maximum response at 2 weeks following the booster dose (median-237.14, IQR-194.73-322.64). Participants with extremes of BMI (less than 18.5kg/m² or more than 30kg/m²) showed significantly low response, while >30kg/m² category showed a slow increase with time. Participants who received booster 3 months following the 1st dose had a significantly higher response at post 2 weeks of the second dose (mean-259 index) compared to individuals who received the 2nd dose 45 days later (mean-83.42 index). Three months following the booster dose a significant reduction of antibody levels (median 67.68, IQR 35.33-107.27) were noted in participants (80/83) with a p value of <0.05.

Conclusion: Two doses of the vaccine showed a good antibody response. Significant reduction of antibody levels at 3 months following the booster dose indicate the need of further studies to assess the need of a third dose in recipients.