

Serosurveillance of Measles Virus amongst Vaccinated Children of a Rural Population of Sindh

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Abstract : Background: Measles is a contagious viral infection common in childhood. Vaccination against measles is included in the expanded program of immunization (EPI). However, and alarmingly, a high mortality rate is observed due to measles infection in Pakistan. Moreover a recent outbreak of measles in various areas of Pakistan further highlights the problem. It is therefore important to investigate measles specific IgG (antibody) levels in our population. Objective: To quantify measles specific IgG antibodies amongst vaccinated children in district Qamber Shahdadt, Sindh. Methodology: This cross-sectional study was conducted at the Microbiology section of the Dow-Diagnostic-Research-and-Reference-Laboratory (DDRRL), DUHS after Institutional Review Board approval (IRB-516/DUHS/-14) during August-December-2014. A total of 173 participants (residents of district Qamber Shahdadt, Sindh) aged between 1-5 years were recruited in the study. Blood samples were collected as per standard phlebotomy guidelines. Blood was stored at 4 °C overnight. Samples were subsequently spun at a speed of 10000rpm to separate sera, which were divided into small aliquots to be frozen at -20 °C. Frozen sera were transported to the DDRRL on dry ice. Measles specific IgG (antibody) titers were quantified using enzyme linked immunosorbant assay (ELISA). Results: Blood was collected from a total of 173 individuals ranging between 1-5 years of age. Of these, a total of 88 participants were males and 85 were females. Of the 173 investigated samples, only 53 (30.6%) showed protective IgG titers against measles while 120 (69%) were sero-negative. Measles specific IgG antibodies titers were higher in female participants compared to the males. Conclusion: Our data demonstrate that a substantial percentage of vaccinated children in district Qamber-Shahdadt did not have protective antibody titres against measles. It is therefore extremely important to investigate measles specific IgG levels in various parts of Pakistan in order to implement appropriate protective measures.

Keywords : sero-surveillance, measles, vaccinated children, Pakistan

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