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Prevalence of latent TB among health care workers in four major tertiary care hospitals in Riyadh, Saudi Arabia

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Background: Tuberculosis (TB) infection represents a global health problem and a great risk to Health Care Workers (HCWs). Identifying individuals, particularly HCWs with latent tuberculosis infection (LTBI) will support TB control through chemoprophylaxis and prevent cross-infection.

Objectives: This study aimed to identify prevalence of Latent TB among a two-year new hires of HCWs in 4 major tertiary care hospitals in Riyadh, Saudi Arabia.

Material and Methods: 2650 recently (2-years) hired HCWs were surveyed for latent TB using Tuberculin Skin Test (TST). Data was collected from January 2008 to December 2009. Induration due to TST equal to or more than 10 mm. within 48-72 hours was considered positive. The results of TST were correlated with other variables such as age group, gender, job category, country of origin.

Results: As an overall rate, 291(11%) out of 2650 were positive for TST, with the highest significant positive rates among physicians (14.9%) and nurses (12.9%) compared to students as a reference group.

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Identification of immunotherapeutic epitope of E5 Protein of Human Papillomavirus-16

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In India, cervical cancer is the most frequent gynecological cancer and approximately 432.20 million Indian women above 15 years of age are at risk of developing cervical cancer. India contributes about 1/3rd of the global cervical cancer deaths, with estimates of 132,000 new cases diagnosed and 74,000 deaths annually. The persistent infection with high risk-HPV (HR-HPV) is the major cause of cervical cancer, worldwide. Two developed prophylactic HPV vaccine (Gardasil and Cerverix) provide protection against HPV induced cervical malignancy. However, vaccines having therapeutic values are of utmost priority. Till date, most of HPV therapeutic vaccines are focused on two major HPV oncoproteins (E6/E7). HPV-E5 which acts by altering the activity of cellular proteins, mainly growth factor pathways emerges as a new therapeutic target. In the present study, we predicted the epitopes of HPV16-E5 to identify the candidate B-cell and T-cell epitopes, which can be used for HPV immunotherapy. We identified that epitope SAFRCFIVYIIFVY is the most potent peptide for HLA-A*11:01 having percentile value of 0.5 and immunogenicity score of 0.69558. For MHC-II, the epitopes IPLFLIHTHARFLIT for HLA-DRB1*14:01 alleles have the lowest IC50 value (18.13nM). The identification of structural feature and immunogenic epitopes provides the best information for development of drugs or vaccine. In conclusion, as the expression of E5 protein was detected in the early phase of the HPV infection, there may be an opportunity to target HPV-E5 that would help in the prevention and progression of the precancerous lesion to invasive carcinomas.

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