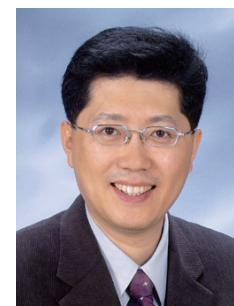


Research on Human papillomavirus infection and antibody immunity in Korean women

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Objectives : Human papillomavirus (HPV) is a human pathogen that causes genital warts, cervical intraepithelial lesions, and invasive cervical cancer. The purpose of this study was to estimate the age-specific prevalence and seroprevalence of HPV-6, -11, -16, and -18 infections and to provide baseline data to estimate the efficacy and cost effectiveness of HPV vaccine in Korean women.

Material and Methods : On this study, we did research on 1,116 healthy female ranged from 10 to 59 years of age. The subjects' age and resident areas were equally proportioned and relatively well distributed. 214 people in 10-19 age range were the patients who visited our clinic to have their physical status checked and 902 people over 20 years old were healthy patients who visited the clinic for the cervical cancer check-ups. Among the subjects, for the ones over 20 years old, we let them fill out a survey questionnaire to analyze the infection risk factors of Human Papillomavirus and Hybrid capture 2(QIAGEN) test and PCR were used to find out the infectivity. HPV antibody titer was measured by multiplexed competitive Luminex method. 214 subjects in 10-19 age range went through HPV antibody test only without having the survey filled out or HPV DNA tests considering their first sexual experiences and cultural backgrounds.

Results : The high risk HPV infection prevalence of this study was 12.6%, which was similar to 10.4-15.5% of the previous studies on cervical cancer test patients. HPV prevalence of each age range was at peak in 20-29 partition and it showed a tendency of diminishing as age went up and when it was in 50-59 partition, the prevalence increased again. The prevalence of HPV infection was significantly high among people who had many life time number of sexual partners. The most common subtypes of HPV were HPV 56(16.5%), HPV 18(15.5%), HPV52(14.6%), HPV 16(11.7%), HPV 31(11.7%), HPV 33(11.7%), HPV 58(6.8%), HPV 45(5.8%), HPV 59(5.8%) in the order of the highest to the lowest. According to the previous reports, HPV seroprevalence in Korean female was 15-19.8% and it increased or showed stable plateau as the age increased. The reason of having differences in their peak time between the prevalence of HPV DNA and HPV seroprevalence can be explained by low HPV antibody turnover rate and weak immunologic response that leads to insufficient exposure to HPV antigen, which was needed for detectable antibody response.

Conclusion : Based on this study and the studies that have already been reported, we would like to reevaluate the criteria for vaccination by age. It is plausible that vaccination is to be done in teens before the youth are exposed to sexual contacts but it should be recommended that current ideal vaccination age, that is 15-17 years, should be lowered because the sexual behaviors of our young generation are changing rapidly. Since continuous infection occurs among the middle-aged women (in their 40s and 50s) and HPV antibody turnover rate is basically low and also even sexually active women are not likely to get infected with all 4 types of HPV vaccination, it is necessary to raise our age standard for vaccination that is currently settled for the catch up vaccination recommended subjects at 18-26 years to higher.