International Agency for Research on Cancer

World Health Organization

PRESS RELEASE
N° 291

25 November 2020

Evidence from Japan: HPV vaccination is effective against high-grade cervical lesions

Lyon, France, 25 November 2020 – A new study, published in the journal *BMC Infectious Diseases*[1] by scientists from the International Agency for Research on Cancer (IARC) and collaborators in Japan, reports that young women vaccinated with the human papillomavirus (HPV) vaccine had a significantly lower risk of developing cervical precancerous lesions – cervical intraepithelial neoplasia grade 2 (CIN2) and CIN3 – compared with an unvaccinated group.

Data for women aged 20–29 years who participated in the national organized cervical cancer screening programme between April 2015 and March 2017 were collected from the Japan Cancer Society (JCS) database. A total of more than 37 000 women were included. Among them, 11% had been vaccinated against HPV at age 12–16 years. The vaccine effectiveness against CIN grade 2 or greater (CIN2+) lesions was 76%, and the effectiveness against CIN3+ lesions was 91%, compared with age-matched unvaccinated women.

“This study provides additional scientific evidence on how effective the HPV vaccine is against cervical precancerous and cancerous lesions,” says Dr Catherine Sauvaget, a scientist in the Screening Group at IARC and one of the authors of the article. The JCS is the largest cancer screening organization in Japan, with more than 11 million participants annually. A JCS office is present in each prefecture. The researchers used data from the JCS offices that collected information about vaccination history.

In Japan, the incidence rate of cervical cancer has increased continuously since the mid-1990s (with a 4.7% annual increase), and this is associated with an increased mortality rate. The burden of cervical cancer can be decreased through HPV vaccination and cervical cancer screening. From April 2013, HPV vaccination was included in the Japanese National Immunization Programme and provided free of charge to girls aged 12–16 years.

Two months later, in June 2013, after reports of adverse effects of the vaccine, Japan suspended the proactive recommendation of HPV vaccination. Consequently, the uptake of HPV vaccination is currently only 0.01% of the target population. In addition, the coverage of cervical cancer screening is low (28%). Also, the behaviour of Japanese teenagers is changing rapidly, such as a younger age of onset of sexual activity, and an increasing prevalence of smoking in girls. To date, the proactive recommendation of HPV vaccination has not resumed. “The findings of this study, based on data generated in the country, show the protective effect of the HPV vaccine on the development of cervical cancer, and its high potential to reduce the burden of cervical cancer in the long term in the Japanese population,” says Dr Sauvaget.

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[1] Shiko Y, Konno R, Konishi H, Sauvaget C, Ohashi Y, Kakizoe T (2020). Effectiveness of HPV vaccination against the development of high-grade cervical lesions in young Japanese women. *BMC Infect Dis*. Published online 5 November 2020; https://doi.org/10.1186/s12879-020-05513-6

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The International Agency for Research on Cancer (IARC) is part of the World Health Organization. Its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. The Agency is involved in both epidemiological and laboratory research and disseminates scientific information through publications, meetings, courses, and fellowships. If you wish your name to be removed from our press release emailing list, please write to com@iarc.fr.