

LETTER TO THE EDITOR

Age at first intercourse and HPV immunization

C. SIGNORELLI, E. COLZANI*

Dpt of Public Health, University of Parma, Secretary General of the Italian Society of Hygiene (SiI); * Dpt of Experimental Medicine (DIMS), University of Milan Bicocca

Key words

Human papillomavirus (HPV) • Vaccine • First sexual intercourse

Summary

The licence of the first human papillomavirus vaccine (HPV) has important implications for the most appropriate age for a mandatory immunization.

In this paper data taken from a recent study show that more than

10% of the Italian women report having already had a sexual intercourse by the age of 15.

There is thus sufficient evidence to recommend administration of the HPV vaccine to all girls by the age of 12.

Introduction

The recent licence of the first human papillomavirus vaccine (HPV) by EMEA has opened the debate in many countries about the most appropriate policy and, in particular, the age for a mandatory immunization [1].

There are many important issues related to its implementation on a national scale. Some of the most important relate to the beginning of sexual activity and therefore to the first age of potential exposure to the virus. In addition to this aspect, organizational issues, the possibility of performing information campaigns and immunogenicity of the vaccine at different ages should be addressed too. In Italy, the HPV vaccination could be given with Td or MMR booster doses, which are already administered by the National Health Service between the ages of 12 and 15 according to the different Regional guidelines.

In order to support national and regional health policy makers in this decision, data from a recent survey on sexual behaviour of the Italian population [2] were analysed. In particular those data concerning sexual activity and age at first intercourse.

Methods

In 2002 a national survey financed by the National Health Institute (Istituto Superiore di Sanità – ISS) was carried out in the provinces of Milan, Parma, Perugia and Bari in order to assess HIV knowledge and risk behaviour in the Italian general population [2].

A self-administered questionnaire was administered to 2,000 subjects, representative of the Italian population. The sampling was performed by quota with equal proportions of age groups, genders, provinces, and educational level. Of these subjects, 1,000 were women aged between 18 and 49 years. The questionnaire was aimed at collecting reported information about HIV

knowledge, sources of information about HIV, impact of previous health education campaigns and sexual behaviour. In this latter part the interviewees were asked if they ever had a sexual intercourse and at what age.

The data were analysed using Stat View™ SE_ 1.02 for Macintosh for univariate analysis and SPSS 11.5 for multivariate analysis.

Results and discussion

Among the 964 women who ever had a sexual intercourse, 4% reported having First Human Intercourse (FHI) by the age of 14 and more than 10% by the age of 15 (Tab. I). Moreover the analysis by age cohorts (both males and females) shows a decreasing trend in the age at FHI with a median age of 17 of the youngest cohort (18-29 years old) vs. a median age of 18 of the older cohorts.

Data show that if the vaccine were administered to girls older than 12, that would result in a reduced effectiveness of the immunization campaign.

A further element to consider is that the HPV quadrivalent vaccine is immunogenic across a wide range of ages, but with the strongest immune responses

Tab. I. Sexually active women at different ages (cumulative proportion).

Age at first intercourse	cumulative % of sexually active
≤ 12 years	0.9
≤ 13 years	1.8
≤ 14 years	4.0
≤ 15 years	10.5
≤ 16 years	19.6
≤ 17 years	33.9
≤ 18 years	52.0

observed in pre-pubertal girls [3]. These findings reflect the involution of the thymus at puberty and the decreased ability to mount new immune responses thereafter, as already observed with other vaccines showing antibodies responses getting lower as age increases [4].

Though selection, recall and reporting biases might have influenced the results of the investigation, the adequate sam-

ple size, the confidentiality guaranteed and the fact that FHI reporting is quite unlikely to cause recall bias suggest that biases should not have affected significantly the results.

In the light of our data on sexual behaviour [2, 5], the recent ACIP recommendations [6] and the scientific evidence, we conclude that the ideal age for a mandatory immunization is from 9 to 11 and anyway before the age of 12, in order to avoid a decrease in effectiveness of the vaccination.

References

- [1] Editorial. *Should HPV vaccines be mandatory for all adolescents?* Lancet 2006;368:1212.
- [2] Signorelli C, Pasquarella C, Limina RM, Colzani E, Fanti M, Greco M, et al. *Third italian national survey on knowledge, attitudes and sexual behaviour in relation to HIV/AIDS risk and the role of health education campaigns.* Eur J Pub Health 2006;16:498-504.
- [3] Asifn M, Siddiqui A, Perry CM. *Human Papilloma quadrivalent (types 6, 11, 16, 18) recombinant vaccine (Gardasil).* Drugs 2006;66:1263-71.
- [4] Frazer IH. *HPV vaccines.* Int J Gyn Obst 2006;94:S81-8.
- [5] Renzi C, Signorelli C, Zantedeschi E, Fara GM. *Early onset of sexual activity. A possible "marker" for subsequent high risk sexual behaviour in young italians.* J Prev Med Hygiene 2001;42:1-14.
- [6] www.cdc.gov. *ACIP Provisional Recommendations for the Use of Quadrivalent HPV Vaccine.* June 29, 2002.

■ Received on February 13, 2007. Accepted on March 2, 2007.

■ Correspondence: Carlo Signorelli, Department of Public Health, University of Parma, via Volturno 39, 43100 Parma, Italy - Tel. +39 0521 903831 - Fax + 39 0862 434656.

