

Epidemiology of cervical dysplasia and carcinoma after the onset of an HPV vaccination programme in Navarra (Spain)

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BACKGROUND AND OBJECTIVE

Persistence of high-risk human papillomavirus (HPV) infections plays a crucial role in the development of cervical cancer. However, vaccination could prevent most of these infections.

This work aims to evaluate the incidence rates of mild to moderate dysplasia (MMD) (CIN1+CIN2 lesions), severe dysplasia and in situ carcinoma (CIN3+ISC), and incidence and mortality of invasive cervical carcinoma (ICC) from 2007 to 2012, after the beginning of an HPV vaccination programme in Navarra.

METHODS

Study design: Descriptive study including all incident cases of cervical cancer and pre-cancerous lesions in 2007-2012.

Data sources: Population-based Cancer and Mortality Registries of Navarra.

Analysis: The annual incidence rates (IRs) for MMD, CIN3+ISC and ICC were estimated, as well as the ICC mortality rate. These rates were age-standardized using the direct method and the WHO world reference population. Join-point regression models were used to estimate the annual percentage change (APC) in incidence rates, and linear regression was used to plot the trends.

RESULTS

Figure 1. Distribution of MMD, CIN3+ISC and ICC cases in Navarra in 2007-2012

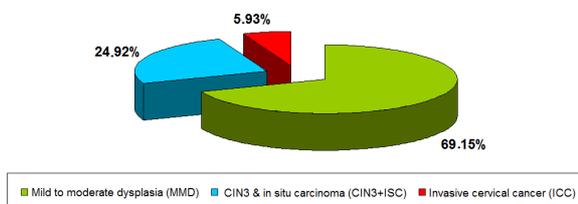
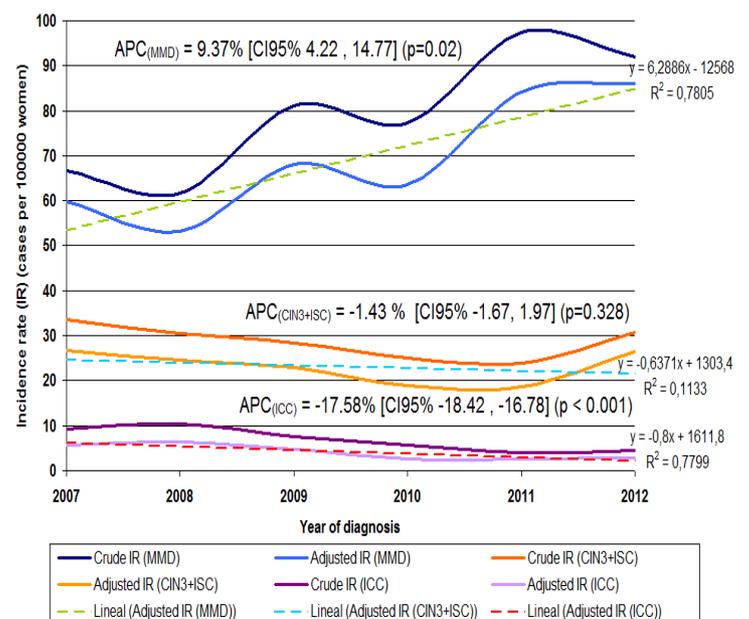


Table 1. Selected characteristics of MMD, CIN3+ISC and ICC incident cases in Navarra in 2007-2012

Characteristic	MMD	CIN3+ISC	ICC
Total number of cases ^a	1271	458	109
Age at diagnosis, mean ± SD (years) ^a	34.9 ± 9.6	36.9 ± 9.9	54.5 ± 17.2
Adjusted incidence rate per 100,000 [IC95%] ^a	64.1 [60.4–67.8]	20.9 [18.9–22.9]	3.7 [3.0–4.4]
Total number of deaths ^b	-	-	37
Adjusted mortality rate per 100,000 [IC95%] ^b	-	-	1.0 [0.64–1.37]

^a Data from the Population-based Cancer Registry. ^b Data from the Mortality Registry.

Figure 2. Incidence rate trends and annual percentage change (APC) for MMD, CIN3+ISC and ICC in Navarra from 2007 to 2012



CONCLUSIONS

1. There are low incidence and very low mortality of cervical cancer in Navarra.
2. During the study period, incidence of MMD increased while CIN3+ISC rate was stable and incidence of ICC decreased. Screening practices may have played an important role in these trends.
3. Besides the monitoring of cervical cancer and pre-cancerous lesions trends over time, the analysis of cancer registry data could be valuable to evaluate the impact of the HPV vaccination programme on this disease.