The impact of 10 years of HPV vaccination.

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In spite of the availability of cervical cytology and HPV screening technologies and more recently, of prophylactic HPV vaccines, cervical cancer remains amongst the three most common cancers in women and consistently the second most common in developing countries. In Europe, some 50.000 new cases of cervical cancer occur yearly with a 40 to 60% mortality rate and great social inequality. Half of these cases occur in the western countries in Europe where screening activities have been in place for decades. HPV types are essentially the same worldwide as is the epidemiology and risk factors for infection and cancer progression. Therefore HPV based preventive technologies and strategies should be useful in all countries.

In 2006 HPV vaccines were first licensed and introduced into the vaccination routines in many developed countries. By the end of 2014 over 60 countries did so and initiated programs targeting mostly your girls. Recent estimates on the impact of such programs indicated that 118 million girls were targeted by public programs of which 42 million received the scheduled vaccines (two or three doses depending on the time and cohort). Projections of these cohorts to their life expectancy indicate that of the 960.000 cases of cervical cancer expected 450.000 will not occur because of the vaccination received.

Public programs have also reported, amongst vaccinated cohorts, a strong reduction of the viral circulation, of genital warts (in areas where the quadrivalent vaccine was used) and of High grade cervical lesions, the closets surrogate to cervical cancer. It is expected that in the coming 5/6 years the first confirmation of the reduction of cervical cancer will be achieved. Studies have also shown that there is a powerful herd protection effect by which in populations with over 50% vaccination rate amongst females only, reduction of viral circulation and of genital warts was also observed amongst non-vaccinated women and non-vaccinated males.

Phase III clinical trials with vaccines against HPV 16 and 18 have recently shown that protection is also very high for adult women (to ages 45+) provided they are HPV DNA negative at the time of vaccination. More recently a nine valent vaccine covering up to 90% of the types found in cervical cancer has shown high efficacy and safety and trials in adult women are underway.

Extending the age of vaccination to adult women combined with an adequate HPV screening and triage algorithm should be able to dramatically reduce mortality in areas of high risk. These campaign-type approaches have the potential to advance the reduction of cervical cancer incidence and mortality as compared to the time table in the reductions expected if only current programs of vaccination adolescent girls are maintained.