Cervical cancer screening: the big step from morphology to molecular biology

P. Hillemanns

Published online: 6 October 2013
© Springer-Verlag Berlin Heidelberg 2013

The achievement of cervical cancer screening by pap smear screening is highly remarkable and has resulted in a significant reduction in cervical cancer morbidity and mortality in western countries. This decline could be seen in countries which performed an opportunistic screening every year or an organized screening in 3- to 5-year interval which is not free of opportunistic screening either.

The Nobel Prize winner Harald zur Hausen and his co-workers mainly were responsible for the ignition of two big changes in the prevention of cervical cancer: the slow step from morphology-based screening to molecular biology-oriented screening and triaging in secondary prevention, and a quick and very effective step towards HPV vaccination as primary prevention. Despite the success in secondary prevention by diagnosing and treating precancerous disease, the gynaecologic surgeon is still faced with quite a number of early and advanced stage invasive cervical cancers and has to employ his skills to reduce the negative impact of existing disease or at least disease-related complications (tertiary prevention). In his review about the prevention of human papilloma virus-associated neoplasia, C.A. Liberani takes the reader onto a revolutionary journey about cervical cancer prevention. Though large observational studies had documented that HPV-based strategies seem to be more sensitive but less specific than cytology, only the results of large randomized clinical trials conducted over one or more screening episodes have led to new guidelines in the US that recommend in women older

than 30 years, a tremendous prolongation in the US-screening interval from 1 year previously up to either every 3 years by cytology or even every 5 years by cytology plus HPV cotesting. However, as C.A. Liberani points out in his article, HPV-based strategies may have the disadvantage of more colposcopies needed to detect a case of CIN 3 or greater. Because of limited number of cervical cancers in screened populations, a balance between improved reduction of invasive cases and the morbidity associated with potential overtreatment plus the impact on costs is necessary (C.A. Liberani, The four steps in the prevention of human papilloma virus-associated neoplasia. Archives of Gynecology and Obstetrics 2013). Interestingly, the Canadian taskforce on preventive healthcare held it premature to make a recommendation on the use of HPV testing in screening, but will revisit this issue as new data become available (Canadian recommendations on screening for cervical cancer, 2013 CMAJ). Other countries such as Australia or Germany are currently in the process of developing its new national guidelines. Based on the “Nationale Krebsplan”, German legislation has issued a new law about cervical cancer prevention and registration (KFRG) for the implementation of an organized, population-based and quality-assured screening program—a challenging step for Germany.

Conflict of interest P. Hillemanns received lecture fees from Abbott, Hologic, Roche, SPMSD.

P. Hillemanns (✉)
Klinik für Frauenheilkunde und Geburtshilfe,
Medizinische Hochschule Hannover, Carl-Neubergstr. 1,
30625 Hannover, Germany
e-mail: hillemanns.peter@mh-hannover.de