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Review

Cervical Cancer Screening: A Slovenian Experience

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A B S T R A C T

In Slovenia, opportunistic screening was introduced in regular gynaecological practice in 1960. The proportion of population screened was unknown, as well as there were no standards for quality assurance and control. Despite great number of smears read, there were no major changes in invasive cervical cancer incidence in the period 1979 till 1993, but in 1994 the incidence rate started to increase again to reach its peak in 1997 (23,1/100.000, 241 new cases). Based on the experiences from the countries with effectively organised screening programmes, a decision was made in 1996 by the Minister of Health to nominate a group of experts to prepare a proposal for organised cervical cancer screening programme after testing the methodology in pilot study. In the pilot the central computerised information system (Screening Registry) was gradually established to register all smears from the whole country, to identify women who do not attend for screening to send them invitation for screening and to monitor screening activity and its quality. The aim of pilot was also to develop guidelines for quality assurance and control of all procedures involved in cervical cancer screening and treatment of intraepithelial lesions. In three years since the beginning of the national programme, nearly 70% of women in the target age group were registered with at least one smear. All other results are presented in regular programme reports. There is still place for further development of the programme, but the incidence of cervical cancer already started to decline especially among younger women, who attend for screening more often than those aged over 50.

Key words: *cervical cancer, screening, cervical smear*

Introduction

Cancer is one of the major public health problems as it is the most common cause of morbidity and mortality today, with more than 5.8 million new cases and more than 3.8 million of deaths each year in Europe[1]. It is projected that by 2020 there will be 3,4 million of new cancer cases and 2,1 million deaths. Much of this increase in absolute numbers derives from the ageing of populations. It represents a significant and growing burden on public health services today.

There is now sufficient understanding of the causes to prevent at least one third of all cancers. Information is also available that would permit the early detection and effective treatment of a further one third of all cancers worldwide. The overall goal of cancer control is to reduce the incidence and mortality of cancer and to improve the quality of life of cancer patients and their families. A well conceived national cancer control programme is the most effective instrument to bridge the gap between knowledge and practice and achieve this goal. Integrated into existing health systems and related services, this programme ensures systematic and equitable implementation of control strategies across the continuum of prevention, early detection, treatment and palliative care.

Screening for cancer consists of the identification of preclinical disease by a relatively simple test. The objective of screening is to reduce the risk of death, i.e. mortality from cancer subjected to screening. For cervical cancer the screening test is aimed at detection of preinvasive lesions. Therefore, reduction in the incidence of invasive disease is the objective of screening for cervical cancer and the indicator of the effect is the change of incidence between those subjected to screening.

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Screening for cervical cancer is fundamental to the provision of health care in Europe and, depending on each health system, performed by general practitioners, the gynaecologist or trained nurses. The dissemination of the cervical smears depends both on the professional interest and on the method of payment. The major increase in use was in those settings where smears were paid for through a public health insurance scheme.

Cervical Cancer Screening in Slovenia till 2002

In Slovenia, opportunistic screening was introduced in regular gynaecological practice in 1960, but in some regions already in 1955 and 1956. A preventive gynaecological exam (smear included) has been practised since then on a yearly basis and recommended to women by gynaecologic community and paid by the health insurance. The payment did not stimulate examinations of more women, as only attendances have been paid regardless on how many women the exams have been performed. Since 1998, a regular yearly gynaecological exam with a smear (endo- and ecto-cervical) and colposcopy has been paid from the obligatory health insurance and supposed to be the right of every woman from 20 years of age onwards. It was performed by gynaecologists working in primary reproductive health care, where changes have also been happening, because of introduction of registration with personal gynaecologists and in some places the accessibility to this service diminished.

Most of the smears were taken from young women, while older women and women from the lower socio-economic groups were frequently missed out altogether by the system. These women are at higher risk, but make less use of screening services, especially if attendance requires individual initiative (inequalities in risk and use of screening). In Slovenia it was found out that despite the formally equal accessibility, only 30% of women performed gynaecological examination yearly, less than half once in every three years, depending on the region of residence, and mostly those with better education. On the other hand, the number of smears examined in the laboratories (more than 300,000) could suffice to examine every women aged 20–64 at least every three years.

In Slovenia there is one of the oldest Cancer Registries in Europe so we can monitor the incidence of cervical cancer since 1950. The time trend of invasive cervical cancer is supposed to reflect the effectiveness of cervical screening in our country. The crude incidence rate of invasive cervical cancer increased from 22.5/100,000 in 1950 to 34/100,000 in 1962 and then decreased to 14/100,000 in 1979, when the incidence was the lowest[2]. Since then till 1993 there were no major changes (though nothing had changed in gynaecological recommendations) but in 1994 the incidence rate started to increase again. Furthermore, an increase of the invasive cancer incidence in the younger age groups (30–39) has been observed. In the period 1994–1998, the age specific incidence rate in the age groups 30–34 and 35–39 was nearly the same as in the period 1959–1963, at the start of the opportunistic screening. In 2000, the incidence rate was 20/100.000, one of the highest in Europe[3].

The descriptive epidemiologic analysis of cervical cancer in Slovenia revealed the inefficiency of opportunistic screening in Slovenia, where lots of resources have been wasted for a small effect on the female reproductive health. Even though the baseline risk of cervical cancer may have changed due to more liberal sexual behaviour of generations, born after the Second World War, the effective screening programme should cope at least with a part of this risk, resulting in better detection of precancerous lesions and not leading to such an increase of invasive cervical cancer.

Based on the experiences from the countries with effectively organised screening programmes[4], a decision was made in 1996 by the Ministry of Health and Health insurance Company to start a pilot study to gradually introduce organised cervical cancer screening. After initial preparations, the pilot started in 1998 in the central region of Slovenia, covering approximately 300,000 women, i.e., one third of the whole female population of Slovenia.

The objectives of this study were:

- to establish the central computerised information system (Screening Registry) linked to the Central Population Registry of Slovenia to register all smears and monitor screening activity and to identify women who do not attend for screening;
- to invite women aged 25–64, who supposedly had not been screened in the previous five years, as they have not been yet registered with a gynaecologist or did not have a smear registered in the study period and to estimate the proportion of women who attend screening as a result of personal invitation;
- to develop guidelines for quality assurance and control of all procedures involved in cervical cancer screening and treatment of intraepithelial lesion and of cervical cancer.

First, a uniform smear report form and skeleton of a computer database were constructed. From the Central Population Register, samples of women from the target population were regularly made and invited to pre-arranged gynaecologic exams. In the period 1998–2001, 28,804 invitations were sent to the samples of women mentioned. Personal invitations have resulted in nearly 50% participation rate in the group of women who do not regularly attend the opportunistic screening. All smear reports (in the electronic form) from all cytological laboratories in the region were gathered. A central database of the Screening Registry was thus created and then regularly updated. In the following years the reporting of smears from all cytological laboratories from the whole country was established, so since 2003 the register is covering the whole country and constant monitoring of the coverage and quality has been established. National guidelines for cytopathology and for management of women with abnormal smear have been published[5–7].

The legal basis for the programme was also established: the contents of the database is included in the law on health statistics[8], the special regulation for cytopathology laboratories then was published by the Ministry of Health[9], and laboratories then have been reviewed to evaluate whether they comply with these standards. With the ministry's recommendation on preventive examinations in primary reproductive health care where screening policy was introduced, the national programme started in 2003[10].

Organised Cervical Cancer Screening Programme in the Primary (Reproductive) Health Care

In 2003, the Ministry of Health supported the introduction of National Programme of Organized Cervical Cancer Screening. It has a name ZORA after Slovenian initials for organised cervical cancer screening programme. The central coordination office with the Screening Registry is at the Ljubljana Institute of Oncology.

The programme advocates the population-wide active cervical cancer screening based on quality-controlled procedures. The aim of this programme is to achieve that at least 70% of the female population aged 20–64 will have a smear taken in a the three-year interval.

Each woman between ages 20 and 64 is to be invited to perform a preventive gynaecological examination together with Papanicolau smear once in every three years (after two negative smears) either by her »personal« gynaecologist with whom she has already been registered or from the Screening Centre in case she has not been registered yet. Women aged 65 to 74 years are not invited but are offered screening when they attend gynaecologist for other reasons.

As it was decided that gynaecologists would invite women already registered with them, the initial stage included active involvement of gynaecologists in the primary health care, who had to review all their records and make lists of women to be invited. Different computer programmes in different practices hampered this but the difficulties should be overcome in the future. The coordination of the programme is assured through regional coordinators and national coordinator, nominated by the Minister of Health.

Regardless of the ability to pay, the universal access to ZORA programme is assured by including the ZORA expenditure into the Slovenia's compulsory Health Insurance Fund. Thus, the organized cervical cancer screening programme is based on all fundamental principles of equity, solidarity and participation.

The results show that in some regions the goal of 70% of women having a smear in the last three years, has already been achieved and preliminary data from the Cancer Registry do not show an upward trend of cervical cancer any more. The invitations resulted also in greater percentage of women being registered with their gynaecologists, which is currently about 80% in the target age group. Annual reviews on the cervical cancer screening programme ZORA is published regularly and available on the programme's web site also (http://www.onko-i.si/zora/)[11].

Conclusions

Systematic screening is a public health intervention often performed in primary health care. For its sustainability it should receive political support and supporting legislation. An advantage is the funding system for public health services separate and independent from the cure and care budget, but adequate resources are needed for management of women with abnormal smears. But in any case the health insurance systems should incorporate funds for screening that is evidence based as this means lower costs for treatment of advanced disease. The key for success of such a programme is organisation, existence of national standards for quality assurance and control and constant monitoring of short- and long-term indicators.

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PROBIR RAKA VRATA MATERNICE – SLOVENSKO ISKUSTVO

S A Ž E T A K

Oportunistički probir je uveden 1960. g. u ginekološku praksu u Sloveniji. Udio testirane populacije je bio nepoznat, a nije bilo niti standarda za osiguranje kvalitete i kontrole. Unatoč velikom broju testiranih obrisaka vrata maternice nije bilo većih promjena u pojavnosti invazivnog raka vrata maternice u periodu od 1979. do 1993. g., no od 1994. g. stopa pojavnosti je počela ponovo rasti kako bi dosegla vrhunac u 1997. g. (23,1/100.000, 241 novi slučaj). Zahvaljujući iskustvu zemalja s učinkovito organiziranim programima probira, 1996. g. Ministarstvo zdravstva je donijelo odluku o imenovanju skupine stručnjaka koja će pripremiti prijedlog organiziranog programa probira raka vrata maternice nakon testiranja metoda u sklopu pilot-studije. U pilot-studiji je uspostavljen središnji kompjuterski informatički sistem (Registar za probir) koji prikuplja podatke o uzorcima iz cijele zemlje, identificira žene koje nisu pristupile probiru, šalje im poziv za testiranje te bilježi aktivnost i kvalitetu probira. Cilj pilot-studije je također bio razvoj vodiča za osiguranje kvalitete te kontrola svih procedura uključenih u probir raka vrata maternice i liječenje intraepitelnih lezija. U tri godine provođenja nacionalnog programa gotovo 70% žena ciljane dobne skupine je pristupilo probiru barem jednom. Ostali rezultati su predočeni u klasičnim izvješćima o programu. Međutim, još uvijek ima mjesta budućem razvoju programa, iako je stopa pojavnosti raka vrata maternice počela padati, pogotovo među mlađim ženama, koje dolaze na probir mnogo češće nego one u dobi iznad 50 godina.