



Prevention strategies in obstetrics and gynecology – review of Polish government programs

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Abstract

Introduction: There are many preventive strategies in medicine offered by public health providers all over the world. Some of them are dedicated to the women exclusively.

Aim: The aim of the review was to organize knowledge about preventive strategies offered to Polish women and to present populations eligible to every program, procedures that are covered and the way of qualifying for the programs.

Material and methods: Government online sites describing preventive strategies for women and the latest literature presenting basics of the programs were reviewed.

Results and discussion: Author of the paper describes five programs covered by Polish Ministry of Health: Organized Cervical Cancer Screening Programme (OCCSP), free HPV vaccination program, breast cancer prevention program, prenatal screening program and free vaccinations for planning pregnancy and pregnant women program.

Conclusions: Summarizing topic of preventive programs for Polish women, there are many of them, taking advantage of the ones we are eligible for, may save our life, decrease severity of some diseases or protect infants from infections. Low coverage is the biggest problem of the strategies and the reason of their weak influence on the morbidity and mortality rates. Propagation of the preventive programs and encouraging people to use them is essential to achieve success.

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1. INTRODUCTION

There are many preventive strategies in medicine offered by public health providers all over the world. Some of them are dedicated to the women exclusively.

2. AIM

The aim of the review was to organize knowledge about preventive strategies offered to Polish women and to present populations eligible to every program, procedures that are covered and the way of qualifying for the programs.

3. MATERIAL AND METHODS

Government online sites describing preventive strategies for women and the latest literature presenting basics of the programs were reviewed.

Author of the paper collected prophylactic strategies of Polish Ministry of Health covered by organizing prevention programs offered to women. There are five programs financed by the Ministry of Health:

1. Organized Cervical Cancer Screening Programme (OCCSP).
2. Free human papillomavirus (HPV) vaccination program.
3. Breast cancer prevention program.
4. Prenatal screening program.
5. Free vaccinations for planning pregnancy and pregnant women program.¹

4. RESULTS AND DISCUSSION

There are many preventive strategies in medicine offered by public health providers all over the world. Some of them, like mammograms, are universal, but some of them, like prenatal testing for sickle-cell anemia, are targeted to predefined populations, with increased risk of the disease.^{2,3}

Every preventive strategy is dedicated to decreasing the risk of a frequent and serious disease or to enabling its early detection. Very popular prophylactic measures are vaccinations. Programs of mandatory immunization of children allowed to eliminate many serious diseases, like poliomyelitis. Increasing number of anti-vaccination movements led to decreased vaccination coverage and higher risk of infections. It is very clearly resulting in an increasing number of cases of infections, for example of pertussis, not only in children, but also in adults. Different target is aimed by screening tests – they are used to detect early stages of the disease, to increase probability of effective treatment.⁴

4.1. CERVICAL CANCER SCREENING

Cervical cancer is one of the most frequent neoplasms in women. Early detection warrants very good prognosis, 99% of women survive over 5 years from diagnosis while late diagnosis is related to high mortality.^{5,6}

Preventive program is dedicated to women aged 25 to 64 years. In traditional scheme every woman is encouraged to perform Pap smear every 3 years. It is provided at no cost to all eligible women. The risk of developing advanced cervical cancer in such a short time is minimal. Patients with confirmed HR-HPV (high risk HPV) infection, non-immunocompetent, taking immunosuppressants, or HIV positive are at high risk of cervical cancer and are eligible to yearly Pap smear. Every patient treated for cervical cancer, who has not undergone hysterectomy, after finishing oncological follow-up, is also eligible for the OCCSP and Pap smear every 3 years.

Women with abnormal Pap-smear results are referred for repeat cytology, colposcopy and/or biopsy as needed. After getting negative results of additional tests the next Pap smear is indicated by gynecologist – after 1–3 years. Confirmed cervical cancer is treated in dedicated oncological centers.

Pap smear may be performed as conventional test on the glass slide or as liquid-based cytology (LBC). LBC is more precise, has a higher detection rate and less false negative results. Due to price difference, most facilities implementing OCCSP offer conventional Pap smear.

Some countries shift from Pap smear or LBC to HPV detection which seems to have higher sensitivity, but also higher price. In Poland a new scheme, parallel to the old one, is offered. HR-HPV test every 5 years is recommended, additional LBC is performed in every HR-HPV positive woman from the same sample, woman doesn't need to come for additional sampling.

High coverage rate of cervical cancer preventive strategy can significantly decrease mortality related to cervical cancer how it is observed in many countries. In Poland too low participation is still the biggest problem of the program.⁷

4.2. HPV VACCINATION

HPV are related to oncogenesis. Cancers developing because of HPV infection are:

- (1) cervical cancer (over 90% are related to HPV infection),
- (2) anal cancer (90%),
- (3) vaginal cancer (75%),
- (4) vulvar cancer (70%),
- (5) penile cancer (60%),
- (6) pharyngeal cancer (70%).⁸

Viruses are mainly sexually transmitted, but skin-to-skin contact can also be a reason of infection. After first contact symptomatic infection may be observed, but many patients are asymptomatic at this period. After primary infection some people do not eliminate viruses and become carriers. Persisted infections are responsible for cancerogenesis. Studies indicate that the lifetime probability of acquiring HPV is above 85%, and most infections are observed below 45 years of age. Vaccination before the beginning of sexual activity is the most effective in infection prevention, and by the infection prevention – cervical cancer prevention.

HPV vaccination is a measure of primary prevention regarding all above listed cancers. Decreasing number of HPV positive people significantly decreases morbidity. In the countries which introduced HPV vaccine as mandatory immunization, mortality related to HPV-dependent cancers has been significantly reduced.

Immunization of young children, up to 14 years old, requires 2 doses of the vaccine, older children and adults get 3 doses. In Poland Gardasil 9 against 9 of the most oncogenic HPV types and Cervarix against HPV types 16 and 18 are available.

In June 2023 in Poland the vaccination program was introduced as a part of National Cancer Strategy. Children (boys and girls) aged 9–14 are eligible for free Gardasil 9 vaccine. In September 2024 free Cervarix vaccine became available for children up to 18 years and for 50% of the price for adults.⁹

4.3. BREAST CANCER PREVENTION PROGRAM

Breast cancer is the most frequent cancer in women. Thanks to preventive mammography mortality decreased, but it is still very high. Approximately 14% of deaths related to cancers are caused by breast cancer. As early stages and small lesions are asymptomatic, self-examining, ultrasound and mammography are the only methods of detecting early stages of this cancer. Diagnosing the disease at early stage is the most important of good prognostic factors, and enables achieving high 5-year survival rates. Self-examining is very effective screening for breast lesions. Most women are able to find tumors as small as 5–10 mm. Performing it once a month, preferable after menstruation in menstruating women, is very useful in decreasing mortality rates. Very useful method is ultrasound, especially in younger population, below 45 years, but it is not covered by the breast cancer prevention program. Program offers mammograms for every eligible woman.¹⁰

Availability of free mammogram is very high. Women of 45 to 74 years are eligible for the exam every 2 years. Women who underwent breast cancer surgical

treatment at least 5 years earlier and are undergoing hormonotherapy, or who finished therapy and 5-years period of monitoring after breast cancer treatment, are offered yearly mammography.¹¹

4.4. PRENATAL SCREENING PROGRAM

Prenatal testing detects fetal malformations and assesses the risk of fetal defects including genetic diseases. Diagnosing some of the fetal abnormalities results in the possibility of prenatal treatment or in many countries where it is legally approved termination of pregnancy. In all cases of fetal abnormality prenatal diagnosis warrants preparing parents to deliver the baby at the time, place and to choose the safest delivery mode according to the needs of the fetus.¹²

The prenatal screening program includes two groups of prenatal tests. The first one is a group of non-invasive tests. They are completely safe for the fetuses, don't interfere with fetal space in the uterus, have no risk of pregnancy complications. They are used for screening for fetal anomalies and aneuploidies. In this group of prenatal test ultrasound examinations, biochemical tests and non-invasive prenatal tests with analysis of free fetal DNA in maternal blood may be offered. Prenatal screening program covers ultrasound examination and biochemical screening tests.

Some patients are eligible for invasive testing which is diagnostic and is used for verification of abnormal or unclear noninvasive screening results. To perform diagnostic test, we must perform invasive procedure to obtain fetal material for genetic testing – amniotic fluid, fragments of placenta or fetal blood. To get some small parts of the placenta we perform chorion villus sampling (CVS), which can be performed at a very early stage of pregnancy, from 10th week. Amniocentesis and amniotic fluid sampling can be safely performed after 14 weeks of gestation and has the lowest risk of pregnancy loss – approximately 0,1%. To get a fetal blood sample cordocentesis must be performed and the tip of the needle must be placed in the umbilical vein. The risk of this procedure is relatively high, and it is nowadays very rare in prenatal diagnosis of fetal genetic abnormalities.

To take advantage of the prenatal screening program women need referral form physician following the pregnancy with precisely calculated gestational age, to make sure the patient reports at the proper time. With this referral patient reports for the first program part – Counselling and Biochemical Screening between 11 weeks and 0 days and 14 weeks and 0 days, and Counselling and Ultrasound Congenital Malformations Screening offered between 11 weeks and 0 day

and 14 weeks and 0 day and the second time between 18 weeks 0 days and 22 weeks and 6 days. After obtaining normal results of performed tests patients are not offered further follow-up included in the Prenatal screening program. Abnormal results need verification by diagnostic, invasive tests. Patient is referred for these stages of the program (Genetic Counselling and Invasive Testing) by the physician performing non-invasive tests. Indications for invasive testing are listed below:

- (1) chromosomal abnormality in previous pregnancy,
- (2) chromosomal abnormality in one of the fetus' parents,
- (3) significantly high risk of giving birth to a child with monogenic disease or multifactorial congenital defect,
- (4) abnormal results of ultrasound examination or biochemical test indicating high risk of chromosomal abnormality of fetal defect.

Prenatal screening program offers all women two ultrasound exams (the first and the second trimester ultrasound) and full range of biochemical screening to the discretion of the physician performing ultrasound screening. PAPP-A, beta-hCG, AFP and free estriol are available. In patients qualified for further diagnosis genetic counselling is offered and patients receive referral for invasive testing – amniocentesis, chorion villus sampling or cordocentesis. After signing consent form, invasive testing is performed and obtained material is sent for genetic evaluation. Sometimes after all the procedures additional diagnostic tests or prenatal treatment are indicated. These patients are transferred to the referral centers dedicated to the defined diagnostic or therapeutic procedures.¹³

4.5. VACCINATION BEFORE AND DURING PREGNANCY

Authorities in Poland: National Institute of Public Health NIH – National Research Institute, State Sanitary Inspectorate, the Polish Society of Vaccinology, the Polish Society For Family Medicine and the Polish Society of Gynecologists and Obstetricians from few years work on recommendations regarding vaccination of women before and during pregnancy. As the result of this work, unified guidelines were published one by one, beginning in 2021. The first part always refers to women planning pregnancy. All of them are encouraged to vaccinate against pertussis, if the last vaccination was longer than 10 years ago. Three doses of vaccination against hepatitis B are recommended, two doses of varicella zoster vaccination in patient who were not vaccinated earlier and did not have chickenpox, one or two doses of mumps, measles, rubella

vaccination in women who were not vaccinated or got only one dose of the vaccine and didn't have rubella earlier, and flu vaccine in the season. These vaccinations are offered to the women to prevent the diseases during pregnancy. All of them are easier got during pregnancy, course of them is more frequently severe and mortality is higher in patients during gestation.

The second group of vaccines is dedicated to pregnant women. The first is flu vaccine in the season – but the recommendation is limited to the intramuscular vaccine only. Nasal vaccine is contraindicated during pregnancy. All vaccine points have free flu vaccines for pregnant women.

The second one is pertussis vaccine at 27–36 weeks (optimally 28–32 weeks). This is aimed at the neonates' protection. High titer of antibodies produced after vaccination allows high vertical transfer of them to the fetus. Infants are protected by these antibodies from disease till the first vaccination according to the actual vaccination calendar. Pertussis vaccine is free for pregnant women and available at the vaccination points.

Different mode of financing was assigned to the RSV vaccine. It is recommended at 24–36 weeks (optimally 27–34 weeks) and patients need to get prescription from GP or Ob-Gyn. She gets the vaccine at the pharmacy and comes to the vaccination point with her own vaccine. RSV vaccine provides protection for the first 6 months of life of the child.

Covid-19 vaccine is recommended according to present Covid-19 prevention strategy, at all three pregnancy trimesters.^{14–16}

5. CONCLUSIONS

Summarizing topic of preventive programs for Polish women, there are many of them, taking advantage of the ones we are eligible for, may save our life, decrease severity of some diseases or protect infants from infections. Low coverage is the biggest problem of the strategies and the reason of their weak influence on the morbidity and mortality rates. Propagation of the preventive programs and encouraging people to use them is essential to achieve success.

CONFLICT OF INTEREST

None declared.

FUNDING

None declared.

ETHICS

Not applicable.

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