



MODERN APPROACHES TO PREVENTION AND TREATMENT OF SEXUALLY TRANSMITTED INFECTIONS

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ABSTRACT

The article is devoted to modern approaches to prevention, diagnosis and treatment of sexually transmitted infections (STIs). Current molecular diagnostic methods, including PCR and serological tests, as well as antibiotic therapy regimens and the use of vaccines, such as the HPV vaccine, are explained. The importance of educational programs to increase awareness of STIs and the availability of health services for risk groups is emphasized. Further research in this area is recommended to adapt strategies and reduce the spread of STIs.

JINSIY YO'L BILAN YUQADIGAN INFEKTSIYALARNING OLDINI OLISH VA DAVOLASHGA ZAMONAVIY YONDASHUVLAR

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ABSTRACT

Maqola jinsiy yo'l bilan yuqadigan infektsiyalarni oldini olish, tashxislash va davolashning zamonaviy yondashuvlariga bag'ishlangan. Hozirgi molekulyar diagnostika usullari, jumladan PZR va serologik testlar, shuningdek antibiotiklarni davolash rejimlari va HPV vaktsinasi kabi vaktsinalardan foydalanish tushuntiriladi. Xavfli guruhlar uchun JYYI haqida xabardorlikni oshirish va tibbiy xizmatlardan foydalanish imkoniyatini oshirish bo'yicha ta'lim dasturlari muhimligi ta'kidlangan. Strategiyalarni moslashtirish va JYYI tarqalishini kamaytirish uchun ushbu sohada keyingi tadqiqotlar tavsiya etiladi.

Relevance. Sexually transmitted infections (STIs) remain a major public health problem, affecting the quality of life of millions of people worldwide. Current approaches to the diagnosis, treatment and prevention of STIs are evolving, taking into account new scientific data and technological advances.



The incidence of sexually transmitted infections (STIs) varies significantly depending on geographic region, socioeconomic factors, level of access to health care and cultural characteristics. However, general trends can be identified.

According to the World Health Organization (WHO), more than 1 billion new cases of STIs are registered annually in the world. These data include gonorrhea, chlamydia, syphilis and other infections. Syphilis, for example, is estimated by WHO to cause about 7.7 million new cases annually.

The incidence of STIs can be high in developing countries due to limited access to diagnosis and treatment. In some regions of Africa and Asia, the infection rate can reach 10-15% of the population. In high-income countries, STI incidence also remains high, especially among young people and high-risk groups. The highest incidence rates are among young people, especially those aged 15-24. According to various studies, about 60% of chlamydia and gonorrhea cases are registered in this group. LGBT+ people are also at higher risk of STIs, including HIV.

The COVID-19 pandemic has also had an impact on the detection rate of STIs. Many people have delayed visiting doctors, which may have led to a decrease in diagnosis and an increase in the spread of infections.

The overall trend shows that prevention, education, and access to health services play a key role in controlling the spread of STIs. Regular testing and early diagnosis remain important to reduce the incidence and prevent complications.

Current methods for diagnosing STIs include:

1. **Molecular methods:** Using polymerase chain reaction (PCR) allows for accurate and rapid detection of pathogens. This method is especially effective for infections such as chlamydia and gonorrhea (Kraus et al., 2020).
2. **Antigen and antibody tests:** Antibody tests provide the ability to detect infections such as syphilis and HIV even at late stages (Kumar et al., 2021).
3. **Screening:** Regular testing in high-risk groups (e.g., youth) is a key element of early diagnosis (Peterson et al., 2019).

Screening for sexually transmitted infections (STIs) is an important part of the prevention and control of these diseases. Various studies are currently underway to improve screening methods, efficiency, and accessibility. Some key areas of research in this area include:

1. **New diagnostic technologies:** studies aimed at developing and implementing new molecular assays such as PCR and other nucleic acid tests that can rapidly and accurately detect STI pathogens. The use of wireless and mobile technologies for home testing increases accessibility and reduces the stigma associated with visiting health facilities.
2. **Screening effectiveness:** studies to assess the effect of routine screening in different populations, including young people, men who have sex with men (MSM), and high-risk groups. Analysis of optimal screening intervals and formats (e.g. self-testing and clinic-based testing).
3. **Risk-based screening:** development of models to identify high-risk groups and define criteria for targeted screening. This will help to use resources more efficiently and reduce incidence in subgroups of the population.



4. Vaccine impact: studies of the impact of vaccination on STI incidence, particularly in the context of human papillomavirus (HPV) vaccination and its impact on the incidence of associated infections.
5. Awareness and education: studies of programs to raise awareness of the importance of screening in the population. This includes assessing the effectiveness of educational interventions to improve compliance with screening and treatment.
6. Cost-effectiveness: economic evaluation models to analyze the costs of screening programs for different groups, including analysis of the long-term costs of treatment in the case of late versus early diagnosis.

These studies aim to improve population health, reduce the incidence of STIs, and ultimately achieve more effective control of these infections.

STI treatment

Treatment of sexually transmitted infections relies on antibacterial or antiviral therapy:

1. Antibiotic therapy: Various antibiotics are used to treat bacterial infections such as gonorrhea and chlamydia (WHO, 2021). It is important to follow current guidelines on antibiotic resistance.
2. Antiviral drugs: Antiretroviral and antiviral drugs are used to treat HIV and herpes, respectively (Sullivan et al., 2021).
3. Immunotherapy and vaccination: The advent of vaccines against certain STIs has been a significant step forward in prevention (Markowitz et al., 2020). There are now vaccines that cover specific STIs, the most notable example being the human papillomavirus (HPV) vaccine. HPV vaccination is aimed at preventing infections caused by high-risk strains of the virus that can lead to cervical cancer, as well as other cancers (anal, oropharyngeal) and warts.

Vaccines such as Gardasil and Cervarix have been shown to be highly effective in reducing the incidence of HPV and related diseases. Studies show a significant reduction in cervical cancer in countries with high vaccination rates. The vaccine is usually recommended for girls and boys aged 11-12 years, but can be given at an older age. Vaccination may be effective before the onset of sexual activity, but even after sexual activity, it may still provide protection.

Research is underway to develop vaccines against other STIs such as chlamydia, gonorrhea and syphilis, but effective vaccines for these infections have not yet been developed or introduced into practice. As data on HPV vaccines accumulate, their expanded use is being explored, such as vaccinating older adults or high-risk groups.

Research shows that existing HPV vaccines have a safety profile similar to other vaccines, and side effects are minimal in most cases. While vaccination is an important aspect of STI prevention, it is not a substitute for other methods, such as:

- Condom use: This is one of the most effective methods for reducing the risk of STI transmission.
- Regular testing and screening
- Educational campaigns: Raise awareness about STIs and the importance of prevention.

STI prevention

1. Educational programs: Raising awareness of STI prevention methods, such as condom use and regular testing, is an important aspect of prevention (Bast et al., 2020).



2. Vaccination: Vaccines, such as the HPV vaccine, have been successful in reducing the risk of developing infections and associated diseases (Cohen et al., 2021).

HPV vaccination is therefore an important step in the fight against certain STIs, and it remains the only vaccine currently recommended for the prevention of sexually transmitted infections. Research is ongoing to develop new vaccines and expand vaccination programs.

3. Access to health care: Increasing access to health care and testing for high-risk groups helps reduce the spread of STIs (Schafer et al., 2019).

Conclusion. Prevention and treatment of STIs require a comprehensive approach that includes modern diagnostic methods, effective treatment regimens, and public awareness programs. It is important to continue research in this area and adapt strategic approaches to meet changing conditions.

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