

12. Treatment Services for Sexually Transmitted Diseases

Epidemiology of Sexually Transmitted Diseases

The first hospital for patients with sexually transmitted diseases was established in Finland in 1756. By the end of the nineteenth century, up to 44 percent of bed days in the hospitals was attributable to STDs. The first chair of dermatovenereology was established at the University of Helsinki in 1874.

Systematic data on the incidence of sexually transmitted diseases in Finland have been available since 1930, when gonorrhea and syphilis were the most common STDs. In 1935, 10398 new gonorrhea cases and 1775 syphilis cases were reported. During wartime in the 1940s, the number of persons with STDs doubled. After the introduction of penicillin in the 1940s, the incidence of gonorrhea decreased. In the 1950s, 4500 to 5000 cases were reported yearly. Penicillin became the primary treatment for syphilis. An obligatory effective serological screening program for all pregnant women contributed to the disappearance of congenital syphilis in the 1950s.

Today the National Public Health Institute collects notifications of reportable STDs (chlamydia, gonorrhea, hepatitis-B, HIV, syphilis) made by physicians and clinical microbiological laboratories. This statistical data can be used for the prevention of epidemics and for education purposes. For example the incidence of gonorrhea decreased constantly after 1970s until the 1990s, (Table 1). In 1999 of the patients with gonorrhea, 75 percent were men, and every other infection was contracted abroad, mainly in Russia. Finland's proximity to Russia affected its statistics on STDs. During the 1990s, Russia had epidemics of gonorrhea and syphilis (Rakhmanova, A et al.,1998). As a consequence, the incidence of these two STDs increased in Finland, especially in its eastern part. Because the amount of syphilis was very low in the 1980s, only 30 to 40 cases a year, health care personnel and the general public had almost forgotten the symptoms and signs of the disease. In fact, one generation of physicians had never seen syphilis patients. After the opening of the border between Finland and Russia in the beginning of the 1990s, the incidence of syphilis in Finland doubled. Local epidemics were identified in Finland, but due to effective partner notification and education of the health care personnel, the situation was quickly brought under control (Hiltunen-Back et al, 1998). In 1998, 187 syphilis cases were reported. The proportion of women with syphilis has increased yearly, and in 1998, 45 percent of the patients were women. Men contracted the infection abroad in 67 percent of the cases, 50 percent of them in

Russia. Women, on the other hand, tended to be infected in Finland by their steady sexpartner.

While the traditional bacteria STDs have decreased constantly, chlamydia and the viral diseases (like genital herpes, human papilloma virus-infections and HIV-infections) have become more prevalent. During the 1970s, awareness of genital herpes increased, and in the 1980s human papilloma virus (HPV)-infections became common among young adolescents. The new viral pandemic, HIV-infection, reached Finland in 1983 when the first AIDS cases were diagnosed in a research project (Valle et al., 1983). National data on the incidence of genital herpes and HPV-infections are not available because these STDs are not reportable. However, these two infections are currently the two most common STDs in Finland (Hiltunen-Back et al., 1998). HPV-infection is the most common diagnosis made in STD clinics. According to the serological studies in different parts of the world, 20 percent of adults are herpes simplex virus 2 seropositive, but only some of them have classic symptoms. Most herpes patients have an atypical clinical picture (no recognisable blisters), and they are unaware they have the infection.

Chlamydia is the most prevalent bacterial STD, and about 10000 new cases are reported yearly. Chlamydia is a common STD among young adults. Thirty percent of women with chlamydia are under 20 years of age. In 1999, a total of 10575 new chlamydia infections were reported; 63 percent of these infections were in women. Surprisingly, the incidence of venereal chlamydia infection is not decreasing, although condoms are easily available from the supermarkets, diagnostic measures are accurate, and treatment compliance is good in Finland.

HIV-infection in Finland, compared with other European countries, has been under control until now. This is primarily attributable to effective information and education. Scientists studying AIDS approached the Finnish National Board of Health in early 1984. As a result of these consultations, by July the Board had nominated an "AIDS Expert Group," which is currently operating under the Ministry for Health and Social Affairs. HIV antibody testing has been made easily accessible. It can be obtained free of charge at any health centre or occupational health service. Of course, hospitals and STD clinics offer free testing as well. Anonymous HIV testing is possible in Finland's five major cities. This testing is conducted at the Finnish Red Cross and AIDS Support Centres.

In Finland, the number of reported HIV cases has been at a constant level since 1990 with 70 infections a year. The cumulative number of HIV-infected between 1983 and 1998 was 939, and 219 of them had died of AIDS. The number of deaths has decreased, and this decline is attributable to antiretroviral medication and prophylactic treatment of opportunistic infections. HIV-infection was confined to homosexual or bisexual men in the early years of the epidemic, but 30 to 40 percent of newly diagnosed HIV cases in the 1990s were in women and 40 to 50 percent were heterosexually contracted (Table

2). Because of Finland's own national blood and blood product service (Finnish Red Cross Blood Service), only two cases of HIV-infection have ever occurred through blood products in Finland.

In 1998, for the first time, a significant number of HIV-infections were found among intravenous drug users in Finland (Table 2). The following year up to 56 percent of all reported new patients were drug addicts. HIV-infection in this population spreads mainly by infected needles and possibly also by unprotected sex because some drug users finance their drugs by prostitution. Today many cities in Finland provide free needles, and some pharmacies needles. In Finland the injecting drug problem has worsened during the past few years, especially among young people. The Ministry for Health and Social Affairs initiated collaborative efforts by responsible authorities that aim to control and stop the HIV epidemic among injecting drug abusers.

Table 1. Reported cases of STDs, by gender, 1995-1999. (population 5 million.)

STD	1996 men/women	1996 men/women	1997 men/women	1998 men/women	1999 men/women
Chlamydia	3444/5873	3469/5969	3815/6360	3977/6677	4068/6507
Gonorrhoea	361/117	159/67	151/67	202/67	181/64
Syphilis	116/53	125/92	102/70	102/85	69/48
HIV	45/27	49/20	48/20	48/32	102/39

Source: National Public Health Institute, Helsinki Finland.

Table 2. The means of contracting HIV-infection in Finland, 1994-1999

Year	Number	Women	Homo- sexual contact	Hetero- sexual contact	Blood Trans- fusion	Intra- venous Drug use	Mother- to-child	Not known
1994	69	20%	49%	36%	1% ^{a)}	2%	1%	8%
1995	72	38%	34%	55%	0	1%	0	8%
1996	69	28%	33%	52%	0	1%	0	13%
1997	71	32%	26%	57%	0	0	1%	12%
1998	80	40%	16%	38%	0	22%	0	22%
1999	141	27%	8%	17%	0	56%	0	15%

Source: National Public Health Institute, Helsinki Finland.

a). Transmission abroad. In Finland the last infection from a blood transfusion occurred in 1985.

The Sentinel STD Surveillance Network

The information from Finland's national infectious diseases surveillance system is quite limited. For instance, no data are available on the risk behaviour of the infected persons. The most common STDs, such as the human papilloma virus and genital herpes infections, are not reportable, and there are no national data on the epidemiology of these common infections. Since the beginning of 1998, physicians have not been required to notify patients of genital chlamydia infections any longer. Now the only information on the epidemiology of chlamydia is available from the statistics of laboratories. In order to get more detailed information on STDs, a sentinel STD surveillance network was established at the beginning of 1995. This network consists of seven STD clinics, three health care centres, two student health care centres and two gynecological clinics.

The sentinel STD surveillance network provides data on the epidemiology of STDs, on HPV and genital herpes infection, and on possible changes in the behaviour of the patients. The information is collected by a uniform questionnaire given to every visitor to an STD clinic. From 1995 to 1998, over 52000 visits were registered. In STD clinics 25 percent of men and 17 percent of female visitors were found to have a sexually transmitted disease. In men, HPV infection was the most common diagnosis (11 percent); in women, chlamydia was most common (8 percent). Women had low incidence of HPV-infection because only visible warts were registered and not positive cytological findings. Genital herpes with symptoms was found among 3 to 4 percent of visitors. Most of the patients (84 percent) went to the clinics at their own initiative; only 12 percent went at their partner's request. Half of the women considered their regular partner as the source of infection. Fifty percent of men suspected their infection came from a casual partner and 5 percent suspected the source was a prostitute. Thirteen percent of men and women had partners from foreign countries. During the past 12 months, half of the women and men had had between 2 and 4 sex partners, and 18 percent of men and 9 percent of women had had 5 or more partners. Twenty-five percent of the women and 37 percent of men had been tested for STDs during the past year, but only 20 percent had been tested for HIV.

Legislation on Sexually Transmitted Diseases in Finland

In Finland, a specific law on STDs was in force from 1939 until 1986. This law recognised four STDs: syphilis, gonorrhoea, Donovanosis (*Granuloma inguinale*), and chancroid (*Ulcus molle*). In 1987, a new Communicable Diseases Act and Decree was established, and STDs were considered comparable to other transmittable diseases. The decree regarded only syphilis as a quarantine-like infection for which the examinations and the treatment are free of charge for the patient in communal health care. Chlamydia, gonorrhoea, HIV-infection, hepatitis-B, and lymphogranuloma venerum are reportable

STDs, and their treatment is free of charge for the patient. Thus, all treatments, even the expensive HAART (highly active antiretroviral therapy) for HIV infection, are provided to patients. In 1993, chancroid and Donovanosis were added to the reportable STDs. Then, in 1997, the decree was amended so that the examination of reportable STDs became free of charge. Chancroid, Donovanosis and lymphogranuloma venereum, common in developing countries, are rarely seen in Finland. Genital herpes and HPV-infection, which are the two most common STDs, are considered like any other infection: patients pay the examination and the treatment costs themselves. Both costs, however, are partially reimbursed by the National Health Insurance covering all Finnish citizens. According to the law, the local community health officials have the first-hand responsibility for prevention and early detection of STDs.

Partner notification is considered part of the treatment and prevention of infectious diseases in Finland. According to the order by the Ministry of Social Affairs and Health, physicians have the primary responsibility to ensure that persons who may have been exposed to STDs are examined and treated. In most cases the index patient informs the partners. One third of the chlamydia patients in STD clinics are there because their partner got chlamydia. However, no national data on the success of contact tracing exist. Partners can be contacted on behalf of the patient by the clinic and asked to attend the clinic. The patient's identity is not revealed. Most partners understand that being tested is in their own best interest. The five university departments of dermatology and venereal diseases have the responsibility in their district to organise teaching of physicians, both during medical school and later in continuing education and to coordinate activities to combat STDs.

In Finland the departments of dermatovenereology in the university hospitals are responsible for specialist training in venereology. Specialisation in dermatovenereology takes six years. The prevention of STDs is mainly the task of local authorities, but the university hospitals are obliged to provide education and consultation. The education is arranged yearly in regional meetings.

Examination and Treatment of STDs

In the main cities there are full-time or part-time outpatient STD clinics, some of which are run by the University Central Hospitals and some by the city health care. Patients do not need referrals or appointments. The first visit is free of charge, and the commonly obtained screening tests include chlamydia, gonorrhoea, syphilis, and HIV. In the main clinics, chlamydia is detected from the first-void urine by gene amplification methods, but it is common to take swabs for chlamydia and gonorrhoea from the urethra or cervix, too. Syphilis and HIV are diagnosed by antibody testing of the blood. The results of all these tests are usually ready within one week, and the patients can personally find out

the results by making a phone call or by visiting the clinic. According to the patient's symptoms, other laboratory tests may be taken. According to the statistics of the National Public Health Institute, 60 percent of all genital chlamydia infections were diagnosed in health care centres, 25 percent in STD clinics and 5 percent by private physicians. In small communities people may feel ashamed to visit their own health care centre, preferring instead to attend an STD clinic in a near-by city. Patients use their own name and social security number when testing for STDs. According to the order by the Ministry of Social Affairs and Health, everyone has the right to be tested for HIV free of charge and anonymously. Student health care centres have arranged STD and HIV examinations for students for a small annual payment. Patients who want to see a private physician, must pay both the examination and treatment costs themselves (but they may be partly reimbursed by the National Health Insurance).

Screening of STDs

The incidence of chlamydia remained fairly constant from 1995 to 1999. During this time, diagnostic methods based on gene technology were established. Chlamydia can now be detected from first-void urine with gene amplification methods, which makes sampling convenient for the patients. Instead of a 10-day course of antibiotics (tetracyclines), a single dose treatment (azithromycin) is now available. However, no decrease in the incidence of chlamydia has occurred. Chlamydia is mainly the infection of adolescents and spreads easily. The most difficult problem is the asymptomatic chlamydia infection in 75 percent of women and 25 percent of men. These infections can be detected only by specific tests. Asymptomatic chlamydia is contagious, and the risk of complications increases over time. Genital chlamydia is the main reason for infertility in Finland (Paavonen et al. 1998). Screening for asymptomatic chlamydial infection is currently considered of primary importance in Finland. It will be much cheaper to screen the risk groups today than to pay for the expensive infertility examinations and treatment later on (Paavonen 1998). The screening interval, however, has to be determined. Antibodies to chlamydia trachomatis have shown an association with cervical cancer, but further studies are needed (Hakama et al., 1993).

Human papilloma virus screening (antibodies in blood or demonstration of HPV genome in PAP-smears) is currently not considered of primary importance, for according to results of recent research, no excess risk of cervical carcinoma among women seropositive for both HPV 16 and HPV 6/11 has been found (Luostarinen et al., 1999). The number of partners and coital frequency have been found to be higher in females with cervical intraepithelial neoplasia (CIN) compared with other age-matched groups in Finland (Taina et al., 1987). However, Finland participates actively in vaccine development against HPV and HIV infections.

In Finland all blood donors are tested for HIV, syphilis, hepatitis-B and hepatitis-C (about 300 000 tests annually). For years, all pregnant women in maternity clinics have been screened for syphilis, and since 1998 voluntary HIV-testing has been offered to every pregnant woman according to the Ministry of Social Affairs and Health. Because medication of HIV-infection can prevent the transmission of the virus from the mother to the baby, such tests by health officials are considered essential. Each year these screenings identify 5 to 10 women as HIV- or syphilis-infected. Mothers with syphilis are treated during the pregnancy with penicillin injections and there has been no congenital syphilis since the early 1980s. In Finland, several HIV-positive women have given birth to a healthy child. Four children have been confirmed HIV-positive, two of them have AIDS and one is dead.

STD Research in Finland

STD research in Finland concentrates on chlamydia infection and its sequels, HIV infection and AIDS and the diagnosis of HPV-infection. There are also large studies on the connection between HPV-infection and cancer. The vaccine studies on HIV- and HPV-infection are ongoing, and international cooperation is active. The epidemiological studies in Finland also concentrate on STDs.

Conclusions

Finland has a reliable national STD surveillance system. The incidence of STDs remained quite constant during the 1990s. The epidemics of gonorrhoea and syphilis in neighbouring Russia, however, are alarming: diseases easily cross national frontiers. Therefore, the continuous surveillance system is necessary in order to act in time. Persons in Finland with STDs are being diagnosed and treated, and the treatment is easily accessible and often free of charge. Common viral diseases that lack a curable treatment pose the greatest future challenge. Effective measures are needed for decreasing the incidence of chlamydia. In Finland the new problem is the HIV-infection epidemic among intravenous drug users. Action now can prevent an expansion of the epidemic. STDs can cause both physical and psychological suffering. Treating chronic infections and their sequels is expensive. The most important goal is to prevent STDs. Public education and persistent research in vaccine development are essential.

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