

## Presidential Address 2006

# STIs and AIDS: Challenges for the future

K A M Ariyaratne<sup>1</sup>

Chief Guest, Prof. Dulitha Fernando, Dean Faculty of Medicine, Colombo

Guest of Honour, Dr Russell Waddell, Director, STD Services, Adelaide, South Australia

Visiting dignitaries

Members of the council of the College of Venereologists of Sri Lanka

Members of the college

Distinguished invitees, colleagues and friends,

It is my pleasure and privilege to address you on the occasion of the inauguration of the eleventh scientific sessions of the College of Venereologists of Sri Lanka. Sexually transmitted infections including HIV/AIDS give rise to an unprecedented health and development threat in the region including Sri Lanka. The future of the STI and HIV epidemic in our countries will depend upon the extent and effectiveness of current and future preventive efforts. In my presentation, I will give you a glimpse of the history and the future challenges for prevention of some important sexually transmitted infections including HIV/AIDS.

Venereal diseases were named after the mythical goddess “Venus” and have been in existence since antiquity. During ancient times important archaeological discoveries brought to light medical artefacts, papyri and mummies that established the prevalence of STIs. The French venereologist Philippe Ricord made the cryptic comment that the first sentence of the Bible should have been “In the beginning God created the heaven, the earth, man and venereal diseases”. At present they are known as sexually transmitted infections.

Earliest recordings dating back to about 1550 BC, include description of STIs. Shortly after the Second World War there were hopes that the sexually transmitted infections were nearing extinction. Physicians had been confident that penicillin and other antibiotics would eliminate the problem of STIs. However, the development of antibiotic resistance and the advent of human immunodeficiency virus infection which causes AIDS shattered this widely held belief. The literature reveals that world over the prevalence and incidence of most of STIs have increased rather than decreased in both developed and developing countries. STI continues to be a major problem throughout the world and Sri Lanka is no exception.

It might seem simple enough to define STI as those infections that can be acquired through sexual contact. Yet, they vary enormously in their manifestations. Some like herpes and warts infection are often a nuisance due to their recurring nature adding a psychological dimension. Others, like cervical cancer secondary to human papilloma virus can appear decades after the moment of transmission. Pelvic inflammatory disease secondary to sexually transmitted pathogens like Chlamydia can have dramatic acute courses, as well as long term health consequences. Today, HIV has become a leading cause of death among young adults and it is estimated that around 16,000 new infections occur daily around the globe.

We in Sri Lanka are living in a turbulent times. We are also seeing the effects of a new globalised economy. Therefore we as medical professionals ought to have a broader view of behaviours which promote the acquisition and transmission of STIs and work with others such as legislators, social scientists and policy makers to come up with comprehensive social and health strategies to mitigate the ill effects of STIs including AIDS. This multidisciplinary approach is an enormous challenge but it is the responsibility of the professionals to execute that responsibility in the service of humanity.

Now ladies and gentlemen, I would like to take you through a few important STIs and look at the challenges for their prevention, especially in relation to Sri Lanka.

## 1. Syphilis

Right at the outset let me state that perhaps because of their complex relations with morality and politics, sexually transmitted diseases have attracted historical inquiry for centuries. One of the leading questions in history of medicine, for nearly 500 years, has been the origin of syphilis. It is clear that in the last years of the fifteenth century a devastating epidemic of infectious syphilis swept across Europe. The sudden onset of the epidemic led many observers to conclude that this was a new disease, brought back from the Americas by Columbus' crew in 1493.

The name syphilis was first given to the disease in 1530, when Dr Francastoro, a physician and poet in Venice in

<sup>1</sup> Consultant Venereologist, Central STD Clinic, National STD/AIDS Control Programme

Italy wrote a poem about a young swine-herd called syphilis, who angered God Apollo. Apollo inflicted a terrible disease on the swine-herd as a punishment in which ulcers on the skin or buboes were the main features. It is interesting to note that Francastoro gave the disease a second name the “French disease” as the Italians claimed the disease was introduced by the French whom they disliked.

In Sri Lanka, the prevalence of infectious syphilis is declining over the years but our challenge is to develop cost effective interventions targeting control and elimination of congenital syphilis.

## 1.2 The elimination of congenital syphilis

The true global burden of congenital syphilis is difficult to determine. It is estimated that, annually, at least half a million infants are born with congenital syphilis. In addition, maternal syphilis causes another half million stillbirths and miscarriages annually. Cases of congenital syphilis continue to be reported to the National STD/AIDS Control Programme. There does not seem to be a decline. These few cases represent the tip of the iceberg.

It is possible to eliminate congenital syphilis as a public health problem by testing women for syphilis early in pregnancy, treating those who are sero-positive, and preventing reinfection. Treating the mother with a single dose of penicillin is nearly always effective in preventing or treating infection in the foetus.

Simple and effective screening tests for syphilis are now available. These can be used even at the lowest levels of health care service delivery. A simple strip of paper, impregnated with treponemal antigen, is used to test blood obtained by finger prick. Results are available in just a few minutes. Unlike earlier diagnostic tests, they do not require access to a laboratory or a refrigerator. These tests have the potential to change the whole approach to syphilis testing even in isolated clinics. Because the results are available immediately, women can be tested and receive treatment at the same visit. A challenge is to introduce these tests at the field level.

The building blocks for elimination of congenital syphilis are already available in Sri Lanka including policy guidelines for universal antenatal syphilis screening, high levels of antenatal attendance, a low cost screening test, and treatment with penicillin which is cheap. What is required is increased motivation at all levels of health service including policy makers, public health care providers and obstetricians working in a coordinated manner to achieve the desired results.

## 2. Gonorrhoea

Gonorrhoea is one of the oldest known diseases of humans. Humans are the only natural host of gonococci. Gonorrhoea undoubtedly was known to the authors of the Bible. The book of Leviticus describes a person with urethral discharge.

*Neisseria gonorrhoeae*, the causative organism of gonorrhoea was discovered by Albert Neisser in 1879. Penicillin had been the effective treatment for gonorrhoea for many years; however the rapid emergence of resistant strains has led to this being withdrawn as a suitable treatment. In the recent years, the gonococcus has acquired resistance to many other antibiotics including quinolones.

If not adequately and correctly treated, gonorrhoea infection is not always without complications. In females, pelvic inflammatory disease can lead to fertility problems and chronic pelvic pain. In males, transurethral spread of the organism can lead to infection of the epididymis. Disseminated infections can result from prolonged untreated gonorrhoea.

The standard procedure for diagnosing symptomatic disease in men with urethritis is the Gram stain. In asymptomatic men or in women with genital infection the Gram stain is less useful and bacterial culture is a necessity. Bacterial culture is both sensitive and cheap to perform. It has the added advantage that further tests can be carried out to determine antimicrobial susceptibility. Continuous laboratory monitoring of antibiotic sensitivity pattern and the dissemination of the information to primary care providers is a priority. In fact this information is a *sine qua non* for successful implementation of syndromic management of STDs at primary health care level.

However, since culture facilities are at present available only in Colombo, Kandy, Kurunegala and Badulla, the challenge is to provide this facility to other peripheral areas in the future. In developed countries a variety of molecular tests are being used to detect gonococcal antigen including DNA hybridization, polymerase chain reaction and ligase chain reaction tests. High cost prevents using these tests in most of developing countries.

In Sri Lanka an extraordinary increase in the incidence of gonorrhoea has been observed since 2002. This is an important risk marker as well as a risk factor for an impending HIV epidemic. The increased incidence of gonorrhoea in spite of all our efforts at behaviour change and promotion of safe sex is a matter of great concern. We need to control and prevent of gonorrhoea among high risk groups such as commercial sex workers and men who have sex with men. Penetrating into these hard

to reach population groups for prevention activities is a challenge.

The change in the antibiotic sensitivity pattern of the gonococcus is posing a challenge for prompt and effective treatment and eliminating of the infection.

### 3. Human papilloma virus infection and cervical cancer

Warty lesions of the ano-genital area have been described as early as the first century AD. The venereal origin of the disease was described in the 1950s. Intracellular virus particles in the wart tissue were demonstrated in 1968. In the 1970s, further work attributed these cellular changes to human papillomavirus (HPV) infection.

Recent epidemiologic and molecular studies have conclusively shown the association of some HPV types with the development of genital tract and anal cancers. Virtually all cervical cancer cases (99%) are linked to genital infection with HPV.

Cervical cancer is the second most common malignancy in women worldwide, and it remains a leading cause of cancer-related death for women in developing countries. The incidence of invasive cervical cancer has declined steadily in the developed world over the past few decades; however, it continues to rise in many developing countries. In high income countries deaths from cervical cancer have been greatly reduced through wide coverage of cytology based screening programmes which allow early detection and treatment of precancerous lesions. Yet, almost 80% of cases occur in low-income countries where cervical cancer is the most common cancer in women and have no routine cervical cancer screening programmes.

In Sri Lanka, the central STD clinic, Colombo performs cytology screening and this facility has to be extended to the peripheral STD clinics. The Well Woman Clinics conducted at the primary health care institutions provide this service and in 2005 a total of 53,287 smears were examined. The continuing of the integration of cervical cytology screening in reproductive health programmes is a challenge

Two prophylactic vaccines both highly effective against oncogenic HPV types are now available in developed countries. Both vaccines target HPV types 16 & 18 which are responsible for 70% of cervical cancer cases worldwide. In addition one vaccine also targets HPV types 6 & 11 which cause low grade cervical abnormality and the vast majority of genital warts. Results from large studies of the HPV vaccines showed almost 100% protection against cervical cancer precursor lesions.

In addition to these two prophylactic vaccines a therapeutic vaccine is in the horizon. The therapeutic vaccine Lovaxin C, has entered clinical trials in March 2006. The vaccine is based on a modified, genetically engineered strain of the bacterium *Listeria monocytogenes*.

However, because of the heterogeneity of HPV genotypes in different parts of the world, the impact of the vaccines may vary across regions. The service delivery strategy of this product in Sri Lanka will be a challenging one considering its affordability and cultural acceptability as vaccinating young girls against a cancer caused by a sexually transmitted pathogen may be a sensitive issue.

### 4. Genital herpes

Herpes virus infections have been prevalent as early as ancient Greek times. Hippocrates is known to have described the cutaneous spreading of herpes simplex lesions and scholars of Greek civilization define the word “herpes” to mean “to creep or crawl” in reference to the spreading nature of the herpetic skin lesions. In 1893, Vidal recognized that transmission of herpes simplex infection from one individual to another.

In 1919, Lowenstein confirmed experimentally the infectious nature of HSV. In the 1920's and 1930's, the natural history of HSV was widely studied and it was found that HSV not only infects the skin, but also the central nervous system.

In Sri Lanka, herpes is one of the commonest sexually transmitted diseases reported from STD clinics.

Infection with herpes simplex virus type 2 causes most of genital herpes infections and is responsible for all most all recurrent herpes episodes. The majority of people who are infected are asymptomatic and do not report a history of symptoms or awareness that they are infected, yet they can still transmit the infection. Those with frequent recurrences may have substantial psychological and psychosexual morbidity. Widespread misconceptions around herpes infection add to the trauma of infected and affected people. Hence addressing the psychosocial and sexual morbidity through in depth counselling is a challenge to care providers.

The interaction and synergy between herpes virus and HIV has strong implications for the control of STIs and AIDS. Herpes simplex virus-2 infection facilitates transmission and acquisition of HIV. A number of recent studies have demonstrated that levels of HIV in the plasma and genital secretions can be reduced by suppressive therapy for HSV-2 infection. In such a scenario, control of HSV-2 infection is emerging as a major theme in the global effort to prevent HIV transmissions.

## 5. HIV /AIDS

In this age the most talked about infection in the world as well as in Sri Lanka is HIV and AIDS. I will attempt a little more detailed analysis of this infection as it is one of the leading causes of death worldwide.

HIV/AIDS has now emerged as the most devastating sexually transmitted infection. The first cases of AIDS occurred in the USA in the early 1980s when a number of young gay men began to develop rare opportunistic infections and cancers. At that time, AIDS did not have a name, but it quickly became obvious that all the men were suffering from an unprecedented common syndrome. The discovery of HIV, the human immunodeficiency virus that causes AIDS was made soon after.

Studying the subtype of virus of some of the earliest known instances of HIV infection provide clues about the time it first appeared in humans and its subsequent evolution.

Three of the earliest known instances of HIV infection are as follows:

1. A plasma sample taken in 1959 from an adult male living in what is now the Democratic Republic of Congo.
2. HIV found in tissue samples from an American teenager who died in St. Louis in 1969.
3. HIV found in tissue samples from a Norwegian sailor who died around 1976.

Available evidence suggests that HIV was introduced into humans around the 1930s in West Africa. A wide range of socio economic and behavioural factors such as international travel, sexual promiscuity, blood transfusion industry and injecting drug use have contributed to the world widespread of HIV, most of which occurred in the latter half of the twentieth century.

At present, twenty five years into the global HIV/AIDS epidemic, HIV infection rates are alarmingly high and more than 4 million people become infected every year. It is estimated that 40 million people are living with HIV infection and about 3 million people die each year.

Given the scale of the epidemic, AIDS is now considered not only a health problem, but also a developmental and security threat. More than 95% of infections are now occur in the developing world, which includes countries that are least equipped to effectively respond to the challenge.

After three decades into the epidemic, there is still no vaccine and no permanent cure. However, social and economic conditions that facilitate the spread of HIV are well known. Despite this, risk behaviours and risk environments persists, and HIV continues to spread among individuals and across national and regional borders.

Currently, Sri Lanka is considered to be a country with a low prevalence of HIV. However, most of the risk behaviours that facilitate the spread of HIV exist within the country.

In response to the 3x5 initiative of the WHO, Sri Lanka initiated the ART programme in 2004 December. As of June 2006, 85 HIV infected persons have been treated with antiretroviral therapy. With antiretroviral therapy AIDS has now been transformed into a chronic disease similar to diabetes or hypertension. The challenge is to scale up provision of ARV to cover all those who are eligible for treatment.

The presence of vulnerable populations such as sex workers, drug users, men who have sex with men and, internal and external migrants potentially promote the spread of HIV. In relation to HIV AIDS I would like draw your attention to a few aspects of the presenting challenge.

### a. Sex industry

From ancient times, prostitution or sex work has been associated with high levels of STIs. Sex workers are rated as high frequency transmitters of sexually transmitted infections and are the reservoirs of infection. In Asia the engine of growth of the HIV infection is the sex industry.

Although prostitution in Sri Lanka is illegal, it is estimated that around 30,000 women and girls are engaged in the commercial sex industry in the country. They operate in brothels, massage parlours, hotels and some are streetwalkers and call girls. Their awareness and knowledge of STI are limited due to lack of information. Discrimination and stigma surrounding HIV and other STIs are common, discouraging these women from seeking treatment for their illnesses, which further increases the risk of infections spreading in the community. Due to their poor health seeking behaviours they do not get the services of regular health screening. The available data show that 45% of female sex workers have experienced multiple STI.

### b. Men who have sex with men ( MSM)

It is estimated that 5-10% of all HIV infections in the world are transmitted by sex between males. In Asia, HIV prevalence is estimated to be 5-15 times higher among MSM than in general population. In Bangkok, HIV prevalence among MSM was 17% in 2004. This has increased to 28% in 2005.

Male to male sex occur in every culture and country and they come from all social classes. They range from men who maintain normal masculine identities and do not



identify themselves as gay, to transgenders ie. men who do not accept their gender and identify as women; like India's hijras, Indonesia's waria and Thailand's katoey.

A significant proportion of men who have sex with men also have sex with women making a wider population vulnerable to HIV. However, due to widespread stigma and discrimination, MSM are less likely to utilize preventive programmes. A recent report by TREAT Asia states that prevention programs were available to only 2 percent of men who have sex with men in the 16 Asia-Pacific countries surveyed.

HIV prevention programmes have to understand issues on sexuality, freedom of expression and appreciate the diversity in sexual issues.

### c. Migration

The Foreign employment industry is the second largest foreign exchange earner for the Sri Lanka (Rs 158,291 million in 2004) An estimated 1.2 million Sri Lankans work in the Middle East and 79.1% of unskilled migrants are women.

The total number of departures for foreign employment in 2004 was 213,453. Of these over 60% were females. The majority of the female workers who departed in the year 2004 were housemaids.

Migration within Sri Lanka and emigration to foreign countries, especially Middle East is necessary for the economic survival of many households in both rural and urban areas.

Internal migration for employment is a common situation in Sri Lanka. Thousands of women and men live away from their families as workers in the Free Trade Zones. Women constitute 80% of the workers in the Free Trade Zones. The vulnerability of these women is indicated by the reports of high rate of unwanted pregnancies and high prevalence of sexually transmitted diseases (STDs) amongst them.

Migrant populations are at higher risk of contracting HIV because of the situation they face in their migration such as poverty, exploitation, and separation from families and partners. Migrant populations are often working individuals, subject to poor and unstable living and working conditions. Such conditions usually mean that they have limited access to reliable and culturally appropriate information on HIV/AIDS and to health services.

### d. Abuse of the internet

During the past decade, the Internet has created new opportunities for meeting sex partners. Internet users can

anonymously find partners with similar sexual interests without having to leave their residence or having to risk face-to-face rejection. The internet may also normalize certain risky behaviours by making others aware of these behaviours and creating new connections between those who engage in them. At the same time, the internet is a potentially powerful tool for HIV prevention interventions providing necessary knowledge and skills. The subject of STI/HIV including prevention of risk behaviours need to be introduced to youth in school and out of school. It will save their lives before it is too late.

## Conclusion

Ladies and Gentlemen, I have attempted to alert you to the challenges of containing the spread of STIs including HIV/AIDS. The failure to limit the spread of HIV/AIDS is too fearful to contemplate. Currently we are a low prevalent country and a concerted effort could make a difference. When you go home tonight, I humbly appeal you to give it some thought: how you could make a contribution towards meeting this challenge.

Ladies and Gentlemen: I would like to take this opportunity to thank all those who sincerely supported me during my tenure as the President of the College. Let me conclude my presentation by thanking all of you all for being here today.