Adult AIDS and Symptomatic HIV Patients at Sawanpracharak Hospital

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Abstract

A total of 751 Human immunodeficiency virus (HIV)-infected patients were admitted to Sawanpracharak Hospital from 1989 to 1996; of which 1, 1, 4, 5, 61, 146, 267 and 266 cases were seen in each year respectively. The majority of the patients were aged between 20-29 years (43.3%), male (85.1%), married (57.0%), living in Nakhon Sawan Province (70.9%)-31 per cent in urban areas and 39.9 per cent in rural areas, and private employees (65.8%). There were 499 (66.4%) patients with AIDS and 252 (33.6%) with symptomatic HIV patients. Most of them had their risk factor from sexual contact (89.5%) with 95.1 per cent of heterosexual behavior. Most of the intravenous drug users were male and all of the blood transfusion risk factors were female. The overall mortality rate was 27.3 per cent. All cases admitted between 1989 and 1991 died; between 1992 and 1996 the mortality decreased from 80.0 per cent to 19.2 per cent. Diseases significantly related to the mortality rate were wasting syndrome and recurrent bacterial pneumonia more than 1 per year. Most of the private employees were in the age group of 20 to 39 years; while most of the agriculturists, housewives and priests were in the age group of 20 to 29 years. All sex-workers were in the age group of 20 to 29 years. Males and females had significantly different marital status; 37.7 per cent of males were single and 53.7 per cent were married, while only 19.6 per cent of females were single but 75.9 per cent were married. Sexual contact was the most common risk factor in both males and females. Males had more intravenous drug use than females but had no blood transfusion risk factor. AIDS had a significantly higher mortality rate (32.5%) than symptomatic HIV (17.1%) patients. Each occupation had different marital status and risk factors ($p = 0.0001$ and 0.0003 respectively).

Education, prevention, early diagnosis and proper management can reduce the spread of HIV infection. Prevention of wasting syndrome is required for decreasing the mortality of the patients.

Key word : Human Immunodeficiency Virus, Acquired Immunodeficiency Syndrome, Symptomatic Patient, Sawanpracharak Hospital

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The first Human immunodeficiency virus (HIV)-infected patient in Thailand was reported in 1984[1]. Since then, there has been a rapid increase in the number of infected patients. However, at the end of 1996, there was a trend of decreasing of HIV infection in all risk factor groups[2]. At Sawanpracharak Hospital, the first HIV patient was found in 1989, after that it has continued to increase. The objective of this study was to determine the relationship among AIDS-defining diseases (ADDs) and the mortality of HIV-infected patients in Nakhon Sawan Province.

MATERIAL AND METHOD

Data of the HIV-infected patients admitted to Sawanpracharak Hospital from January 1, 1989 to December 31, 1996 were reviewed. The patients were separated into 2 groups, acquired immunodeficiency syndrome (AIDS) and symptomatic HIV, as classified by the Center for Disease Control[3]. ADDs were classified in 3 groups: mild- esophageal candidiasis, Kaposi's sarcoma, PCP and extra- and pulmonary tuberculosis; severe- all other ADDs except lymphoma; very severe-lymphoma. Characteristics of the patients (gender, age, marital status, address, sexual behavior, risk factors), signs and symptoms, and ADDs were evaluated. HIV infection was determined by anti-HIV tests using particle agglutination (PA) and enzyme-linked immunosorbent assays (ELISA), then confirmed by Western blot (WB) assays. Chi-squared test using SPSS computer program was used for statistical evaluation, the significant level was $p < 0.05$. Graph was prepared with Microsoft Excel for Windows program.

RESULTS

A total of 751 HIV-infected patients admitted to Sawanpracharak Hospital from 1989 to 1996, of which 1, 1, 4, 5, 61, 146, 267 and 266 cases were seen each year respectively (Fig. 1). The majority of patients were aged between 20-29 years (43.3%), male (85.1%), married (57.0%), living in Nakhon Sawan Province (70.9%--31.0% in urban areas and 39.9 per cent in rural areas), and private employees (65.8%). Four hundred and ninety-nine patients (66.4%) had AIDS and 252 (33.6%) were SHIV patients. Most of them had risk factors of HIV infection from sexual relations (89.5%). Forty-two (5.6%) and 2 (0.3%) patients had risk factor from intravenous drug use (IVDU) and blood transfusion respectively. Most of them (95.1%) had heterosexual behavior. On discharge, 546 patients (72.7%) were alive and 205 (27.3%) were dead. (Table 1)

Most of the ADDs in AIDS patients were mild ADD, *Mycobacterial tuberculosis* pulmonary and extrapulmonary infections (25.8%); others were severe ADDs, wasting syndrome (21.3%) and cryptococcosis (13.4%) and mild ADD, *Pneumocystis carinii* pneumonia (PCP) (4.7%). There was no

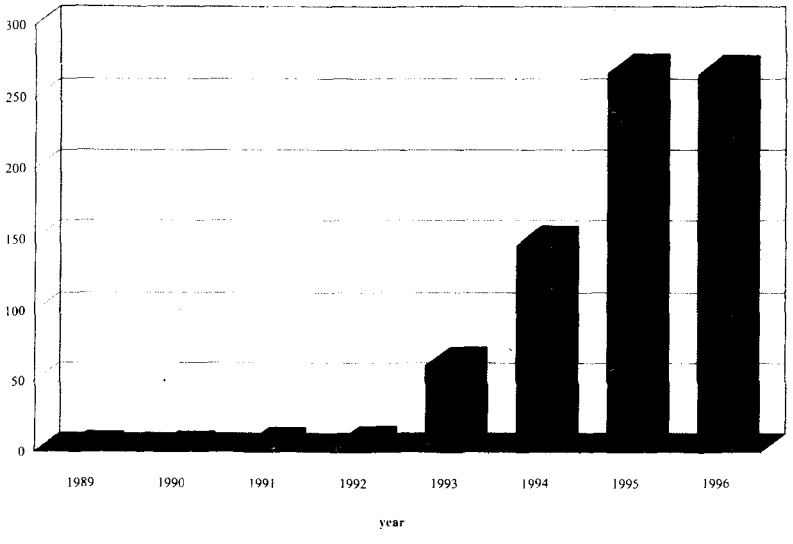

Fig. 1. Number of the patients according to year of admission.

Table 1. Characteristics of the patients.

Characters		Number	%	Characters		Number	%
Age (year)	15-19	7	0.9	**type of infection**	- AIDS	499	66.4
	20-29	325	43.3		- symptomatic HIV	252	33.6
	30-39	289	38.5	**risk factor**	- sexual	672	89.5
	40-49	90	12.0		- Intravenous drug use	42	5.0
	50-59	27	3.6		- *via* blood transfusion	2	0.3
	60 +	12	1.6		- unknown	35	4.7
	NR	1	0.1	**behavior**	- heterosexual	714	95.1
(range 15 - 73 , mean 32.2 + / - 8.9)					- homosexual	4	0.5
Gender	male	639	85.1		- unknown	33	4.4
	female	112	14.9	**discharge status**	- alive	546	72.7
(M : F = 5.7 : 1)					- dead	205	27.3
Marital status	- single	263	35.0				
	- married	428	57.0				
	- separated	17	2.3				
	- divorced	10	1.3				
	- widowed	16	2.1				
	- unknown	17	2.3				
Address	- Nakornsawan province						
	- Amphur Muang	233	31.0				
	- Other Amphurs	300	39.9				
	- Other Provinces	218	29.0				
Occupation	- private employee	494	65.8				
	- agriculturist	135	18.0				
	- merchant	34	4.5				
	- police - soldier	4	0.5				
	- sex worker	6	0.8				
	- house wife	11	1.5				
	- inmate	8	1.1				
	- government employee	18	2.4				
	- priest	26	3.5				
	- others	15	2.0				

severe ADD, lymphoma in our hospital. While in SHIV patients, most of the signs and symptoms were oral candidiasis (24.5%); others were fever for more than 1 month (20.2%), cachexia (16.5%), diarrhea for more than 1 month (9.2%), hematologic complications (anemia, lymphopenia, thrombocytopenia) (6.9%), lymphadenopathy (5.2%) and persistent dermatitis (5.1%). However, only wasting syndrome and recurrent bacterial pneumonia in AIDS patients ; and cachexia and other (septicemia, pneumonia, lung abscess, myelitis) in SHIV patients were significantly related to the mortality rate. (Table 2)

When compared by age group, there were more males than females in all age groups except for the age group of 15-19 years. Marital status and occupations in each age group were also significantly different (Table 3). Marital status, occupations and risk factors were different between male and female groups (Table 4). When compared by type of infections, patients with AIDS had a marital status and discharge status significantly different from symptomatic HIV patients (Table 5).

All the patients between 1989 and 1991 have died. From 1992 to 1996, 4 (80.0%), 14 (23.0%), 47 (32.2%), 83 (31.1%) and 51 patients (19.2%) died respectively. (Table 6)

DISCUSSION

At Sawanpracharak Hospital, there was a slow increase of HIV-infected (AIDS and symptomatic HIV) patients from 1989 to 1992, a rapid increase from 1993 to 1995, and rather stable in 1996. Most of the patients age-groups were between 20-29 years (43.3%) and 30-39 years (38.5%); which were similar to that of the National Surveillance Report, Chonburi Hospital, Rajavithi Hospital and Phayao Hospital[2,4-6]. Males were infected more than females (M : F = 5. 7 : 1), which was higher than Chonburi

Table 2. Signs and symptoms of the patients and relation to survival.

Signs and symptoms	Number	per cent	alive	dead	p value
AIDS					
Mild ADDs					
1. candidiasis of esohagus, trachea, bronchi or lung.	12	0.6	10	2	0.6124
2. *Mycobacterium tuberculosis*, pulmonary or extrapulmonary.	194	25.8	136	58	0.2981
3. *Pneumocystis carinii* pneumonia	35	4.7	25	10	1.0000
Severe ADDs					
1. invasive cervical cancer.	1	0.1	1	0	1.0000
2. disseminated coccidioidomycosis except lung or cervical or hilar l.n.	1	0.1	1	0	1.0000
3. cryptococcosis	101	13.4	71	30	0.6431
4. cryptosporidiosis, chronic intestinal with chronic diarrhea > 1 mo.	4	0.5	4	0	0.5054
5. HIV encephalopathy	13	1.7	6	7	0.0638
6. Herpes simplex more than 1 month.	1	0.1	1	0	1.0000
7. Mycobacterium avium complex or *M. kansasii* infection	2	0.3	2	0	0.9418
8. recurrent bacterial pneumonia more than 1 per year.	8	1.1	2	6	**0.0081**
9. *Penicillium marnefeii* infection	8	1.1	4	4	2.2936
10. repeated *Salmonella* septicemia	3	0.4	3	0	0.6788
11. Toxoplasmosis in brain	4	0.5	2	2	0.6460
12. wasting syndrome (emaciation, slim disease)	160	21.3	95	65	**0.0000**
Very severe ADDs					
-					
Symptomatic HIV patients					
1. oral candidiasis or hairy leukoplakia	184	24.5	132	52	0.8083
2. Herpes zoster more than 1 dermatome	16	2.1	13	3	0.6226
3. central nervous system dysfunction	29	3.9	16	13	0.0513
4. diarrhea for more than 1 month	69	9.2	50	19	1.0000
5. fever for more than 1 month	152	20.2	103	49	0.1530
6. cachexia or more than 10% weight loss	124	16.5	79	45	**0.0188**
7. asthenia more than 1 month	21	2.8	16	5	0.9081
8. persistent dermatitis more than 1 month	38	5.1	27	11	0.9621
9. anemia, lymphopenia, thrombocytopenia	52	6.9	34	18	0.2862
10. persistent cough or any pneumonia > 2 mo (except TB)	15	2.0	9	6	0.4106
11. lymphadenopathy > 1 cm at least 2 non-inguinal sites > 1 month	39	5.2	32	7	0.2455
12. other	16	2.1	4	12	0.0001

Table 3. Relationship between age group and gender, marital status and occupation.

Age group (year)		15 - 19	20 -29	30 - 39	40 - 49	50 - 59	60 +	p value
				N (%)				
gender	- male	3(0.5)	259(40.5)	260(40.7)	80(12.5)	25(3.9)	12(1.9)	
	- female	4(3.6)	66(58.9)	29(25.9)	10(8.9)	2(1.8)	1(0.9)	0.0001
marital status	- single	5(1.9)	160(60.8)	85(32.3)	10(3.8)	3(1.1)	0	
	- married	2(0.5)	151(35.3)	183(42.8)	67(15.7)	17(4.0)	8(1.9)	
	- separated	0	2(11.8)	8(47.1)	4(23.5)	2(11.8)	1(5.9)	
	- divorced	0	2(20.0)	4(40.0)	3(30.0)	1(10.0)	0	
	- widowed	0	4(25.0)	4(25.0)	2(12.5)	3(18.8)	3(18.8)	
	- unknown	0	6(35.3)	5(29.4)	4(23.5)	1(5.9)	1(5.9)	0.0000
occupation	- private employee	6(1.2)	217(43.9)	199(40.3)	54(10.9)	13(2.6)	5(1.0)	
	- agriculturist	0	61(45.2)	50(37.0)	16(11.9)	5(3.7)	3(2.2)	
	- merchant	0	11(32.4)	15(44.1)	5(14.7)	3(8.8)	0	
	- police - soldier	0	1(25.0)	2(50.0)	1(25.0)	0	0	
	- sex worker	0	6(100.0)	0	0	0	0	
	- house wife	0	5(45.5)	3(27.3)	2(18.2)	1(9.1)	0	
	- inmate	0	4(50.0)	2(25.0)	2(25.0)	0	0	
	- government employee	0	7(38.9)	7(38.9)	4(22.2)	0	0	
	- priest	0	11(42.3)	7(26.9)	4(15.4)	3(11.5)	1(3.8)	
	- other	1(6.7)	2(13.3)	4(26.7)	2(13.3)	2(13.3)	4(26.7)	0.0000

Table 4. Relationship between gender and marital status, occupation, risk factor.

		Male N	%	Female N	%	p value
Marital status	- single	241	37.7	22	19.6	
	- married	343	53.7	85	75.9	
	- separated	16	2.5	1	0.9	
	- divorced	8	1.3	2	1.8	
	- widowed	14	2.2	2	1.8	
	- unknown	17	2.6	0		0.0007
Occupation	- private employee	429	67.1	65	58.0	
	- agriculturist	117	18.3	18	16.1	
	- merchant	24	3.8	10	8.9	
	- police - soldier	4	0.6	0		
	- sex worker	1	0.2	5	4.5	
	- house wife	2	0.3	9	8.0	
	- inmate	8	1.3	0		
	- government employee	18	2.8	0		
	- priest	25	3.9	1	0.9	0.0000
	- other	11	1.7	4	3.6	
Risk factor	- sexual	570	89.2	102	91.1	
	- IVDU	41	6.4	1	0.9	
	- blood transfusion	0		2	1.8	0.0006
	- unknown	28	4.4	7	6.2	

IVDU = intravenous drug use

Table 5. Relationship between type of infection and marital status, discharge status.

		AIDS N	%	Symptomatic HIV N	%	p value
Marital status	- single	169	33.9	94	37.3	
	- married	299	59.9	129	51.2	
	- separated	12	2.4	5	2.0	
	- divorced	4	0.8	6	2.3	
	- widowed	8	1.6	8	3.2	
	- unknown	7	1.4	10	4.0	0.0245
Discharge status						
	- alive	337	67.5	209	82.9	
	- dead	162	32.5	43	17.1	0.0000

Table 6. Relationship between year of admission and discharge status.

Year	Alive	%	Dead	%
1989	0		1	100.0
1990	0		1	100.0
1991	0		4	100.0
1992	1	20.0	4	80.0
1993	47	77.0	14	23.0
1994	99	67.8	47	32.2
1995	184	68.9	83	31.1
1996	215	80.8	51	19.2

p value = 0.0001

Hospital but lower than the National Surveillance Report, Rajavithi and Phayao Hospitals. Most of the patients (57.0%) were married which indicated transmission of HIV in the family. Thirty-one per cent of the infected patients lived in urban areas (Amphur Muang), which was less than that of Phayao and Nakorn Si Thamarat Hospitals[6,7]. Private employee was the most common occupation and agriculurist was the next most common at Sawanpracharak Hospital. This was a disparate finding from Phayao Hospital, in which agriculurist was the most common and private employee the next most common occupation.

There were more patients with AIDS (66.4%) than patients with symptomatic HIV (33.6%), this indicated that the patients in the symptomatic HIV group had mostly progressed to AIDS or the AIDS patients had more problems from infections which required more hospitalizations than symptomatic HIV patients.

The most common HIV risk factor was sexual (89.5%) and most common sexual behavior was heterosexual (95.1%), which differed from the United States in which male-male sexual behavior [8, 9] or IVDU[10-12] were the most common. This might be caused by the different subtype of HIV-1 in Thailand and the United States, HIV-1 subtype E is predominately spread in Thailand; while in the United States, HIV-1 subtype B is more predominant[13].

The mortality rate of AIDS patients was 32.5 per cent which is less than that of Rajavithi (40.0%), but higher than Phayao (19.5%) Hospital. This may be due to the differences among the patients in each hospital, such as the patients' status and the infectious complications.

The most common ADDs at Sawanpracharak Hospital was *Mycobacterium tuberculosis* infection (25.8%), the next most common was wasting syndrome (21.3%) and cryptococcosis (13.4%). This was different from Phayao Hospital, where cryptococcosis was the most common, and wasting syndrome and PCP were the next most common diseases. In our study, only wasting syndrome and recurrent bacterial pneumonia were related to the mortality rate. In Canada, HIV wasting syndrome has increased in frequency as the cause of death, while PCP has decreased significantly[14]. In London, HIV wasting syndrome which was classified as severe disease also had more relative risk of death than PCP which was classified as mild disease[15].

HIV infection has caused a resurgence of tuberculosis and increased the risk of active and multi-drug resistance (MDR) tuberculosis[16,17]. Tuberculosis, in turn accelerates the course of HIV disease[18]. Overall, patients with AIDS had an increased risk of tuberculosis about 100 times more than patients without HIV infection. At Sawanpracharak Hospital, tuberculosis which was classified as mild disease and was not related to mortality of the patients.

With HIV-induced immunosupressive, most strikingly in patients with advanced HIV disease, there is a high frequency of extrapulmonary tuberculosis[19,20]. Of the extrapulmonary tuberculosis, tuberculous lymphadenitis is the most common. At Sawanpracharak Hospital, there were 8 cases of extrapulmonary tuberculosis, all were tuberculous lymphadenitis. In HIVseronegative patients, tuberculous lymphadenitis is slow enlarging, painless without fever, and tuberculin skin test is usually positive. But in HIV seropositive, it usually has localized tenderness with fever and tuberculin skin test is usually negative[21,22]. Using fine needle aspiration of tuberculous lymphadenitis in HIV seropositive patients should yield numerous positive tubercle bacilli more than in HIV seronegative patients[23,24]. At Sawanpracharak Hospital, we also diagnosed tuberculous lympadenitis by this method.

Wasting syndrome, the second most common but severe ADD at Sawanpracharak Hospital was related to mortality of the patients. It was reported that recombinant human growth hormone had a significant increase in body weight, lean body mass, and appeared to be safe and potentially effective in patients with HIV-associated wasting[25,26].

In developing countries, such as Thailand, PCP was seen less than *Mycobacterial tuberculosis*; which contrasts to that of developed countries. This can be explained by the fact that Thailand is endemic for *M. tuberculosis* and about one-third of the population below 40 years of age has had previous *M. tuberculosis* infection.

In developing countries, the incidence of diarrhea in HIV patients was higher than in the West; and the stool was watery rather than bloody diarrhea like the West.

In women, if we pay attention to take papanicolaou's smear in every patient with HIV infection, we should obtain the early disease[3,28]. In addition, seroprevalence of HIV infection among women with

acute pelvic inflammatory disease was higher than that among women without this disease[29].

Almost all patients with HIV infection will contract oral disease[30]. Oral lesions reflect HIV status and the stage of immunosupression[31]. These oral lesions were candidiasis, hairy leukoplakia, Kaposi' sarcoma, non-Hodgkin's lymphoma, Herpes simplex, Herpes zoster , cytomegalovirus, aphthous ulcer, salivary gland disease, necrotizing gingivitis, periodontitis and stomatitis. Most of these conditions can be treated by the cooperation of the physician and the dentist.

When compared by age group, females were infected by HIV in the lower age group but had significantly more married marital status than males. Patients with single marital status were younger than patients with married status. Of the two large occupational groups, agriculturists were infected in the lower age group more often than private employees.

All patients admitted from 1989 to 1991 have died. From 1992 to 1996 the mortality rate decreased from 80.0 per cent to 19.2 per cent; this may indicate better management of the patients, or the patients in the later years were not followed-up long enough (they may still having high enough immunity).

Primary HIV infection was infrequently diagnosed at the initial medical encounter, even in persons enrolled in routine HIV screening programs[32]. For early correct diagnosis of primary HIV infection, physicians should obtain an adequate sexual history for high risk behavior in all persons who present at the Emergency Department, or walk-in clinics with a febrile illness, mononucleosis syndrome, sore throat, lymphadenopathy, or symptoms similar to aseptic meningitis. This primary HIV infection period is associated with high titers of circulating viruses[33,34]. A plasma HIV RNA detection is more sensitive than detection of p24 antigen or CD4 cell count in diagnosis of primary HIV infection, in prediction of progression to AIDS, and also prediction of clinical response[32,35].

Anti-HIV drugs should be prescribed early and combined with two or more drugs, because many HIV mutations can occur. Chemotherapy preventive of opportunistic infections such as cotrimoxazole or pentamidine for PCP, azole compound for fungal infection and isoniazid for *M. tuberculosis* can decrease the prevalence and severity of these infections in HIV patients. Prevention of wasting syndrome is required for decreasing the mortality of these patients.

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ผู้ป่วยเอดส์ผู้ใหญ่และผู้ป่วยติดเชื้อเอ็ชไอวีที่มีอาการที่โรงพยาบาลสวรรค์ประชารักษ์

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ระหว่างปีพ.ศ. 2532 ถึงปีพ.ศ. 2539 มีผู้ป่วยเอ็ชไอวีที่รับไว้รักษา ในกลุ่มงานอายุรกรรม โรงพยาบาลสวรรค์ประชารักษ์ จังหวัดนครสวรรค์ รวม 751 ราย โดยพบ 1, 1, 4, 5, 61, 146, 267 และ 262 รายในแต่ละปีตามลำดับ ส่วนใหญ่ของผู้ป่วยมีอายุในช่วง 20–29 ปี (ร้อยละ 43.3), เป็นเพศชาย (ร้อยละ 85.1), แต่งงานแล้ว (ร้อยละ 57.0), อาศัยอยู่ในจังหวัดนครสวรรค์ (ร้อยละ 70.9, โดยร้อยละ 31 อาศัยอยู่ในอำเภอเมือง และร้อยละ 39.9 อาศัยอยู่ในอำเภออื่นๆ) และอาชีพรับจ้าง (ร้อยละ 65.8) ผู้ป่วย 499 ราย (ร้อยละ 66.4) อยู่ในระยะเอดส์ และ 252 ราย (ร้อยละ 33.6) อยู่ในระยะติดเชื้อที่มีอาการ ผู้ป่วยส่วนใหญ่มีปัจจัยเสี่ยงการติดเชื้อจากเพศสัมพันธ์ (ร้อยละ 89.5) โดยร้อยละ 95.1 มีพฤติกรรมรักต่างเพศ ผู้ป่วยที่ฉีดยาเสพติดเข้าเส้นส่วนใหญ่เป็นชาย และผู้ป่วยทุกรายที่ติดเชื้อจากการได้รับเลือดเป็นหญิง พบอัตราตายรวมร้อยละ 27.3 ผู้ป่วยที่รับไว้รักษาระหว่างปีพ.ศ. 2532–2534 ถึงแก่กรรมทุกราย อัตราตายลดลงจากร้อยละ 80.0 ในปีพ.ศ. 2535 เหลือร้อยละ 19.2 ในปีพ.ศ. 2539 โรคที่มีความสัมพันธ์กับอัตราตายอย่างมีนัยสำคัญทางสถิติคือภาวะซูบผอมและปอดบวมจากเชื้อแบคทีเรียมากกว่าปีละครั้ง อาชีพรับจ้างส่วนใหญ่อายุระหว่าง 20–39 ปี อาชีพเกษตรกรรม, แม่บ้านและนักบวชส่วนใหญ่อายุระหว่าง 20–29 ปี หญิงบริการทุกรายอายุระหว่าง 20–29 ปี ชายและหญิงมีสถานภาพแตกต่างกัน โดยชายเป็นโสดถึงร้อยละ 37.7 และสมรสร้อยละ 53.7 แต่หญิงเป็นโสดเพียงร้อยละ 19.6 และสมรสถึงร้อยละ 75.9 ปัจจัยเสี่ยงการติดเชื้อเป็นจากเพศสัมพันธ์มากที่สุดทั้งชายและหญิง ชายมีเสพยาเสพติดเข้าเส้นมากกว่าหญิงแต่ไม่มีการติดเชื้อจากการได้รับเลือด ผู้ป่วยเอดส์มีอัตราตาย (ร้อยละ 32.5) มากกว่าผู้ป่วยติดเชื้อที่มีอาการ (ร้อยละ 17.1) อย่างมีนัยสำคัญทางสถิติ แต่ละอาชีพมีสถานภาพและปัจจัยเสี่ยงแตกต่างกัน ($p = 0.001$ และ 0.0003 ตามลำดับ)

การให้ความรู้เรื่องโรคเอดส์และการป้องกัน, การวินิจฉัยโรคได้แต่แรกเริ่ม, และการให้การดูแลรักษาที่เหมาะสมจะสามารถหยุดยั้งการแพร่กระจายของการติดเชื้อเอ็ชไอวีได้ การป้องกันไม่ให้เกิดภาวะซูบผอมจะช่วยลดอัตราตายในผู้ป่วย

คำสำคัญ : เอ็ชไอวี, โรคเอดส์, ภาวะติดเชื้อเอ็ชไอวีมีอาการ, โรงพยาบาลสวรรค์ประชารักษ์

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