Operational research for STD service: Improvement of treatment and care at Siriraj Hospital

Anuvat Roongpisuthipong, M.D., Amphan Chalermchockcharoenkit, M.D., Korakot Sirimai, M.D., Manopchai Thamkhantho, M.D., Jerawan Prymanee, B.Sc., Piangpen Tanyatul, M.S., Pannarai Nooma, B.Sc., Kwanjit Laothong, B.Sc., Suchittra Pongprasobchai, M.S., Bubpha Choknakavaro, PN., Sommai Janyakorn, PN., Sakorn Tangsriouya, PN., Waraporn Aiumvijarn, PN., Chamanuch Sookrukkar

Department of Obstetrics & Gynecology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700. Thailand.

ABSTRACT

Objectives: Operational research for sexually transmitted disease (STD) service was conducted to: 1) create the potential for systematic care: to assess and monitor for HIV and sexually transmitted infection (STI): 2) create the linkage among OB-GYN, Medicine and Pediatric Departments of Siriraj Hospital; 3) cervical cancer screening in HIV-infected females by Pap smear once a year; 4) create a system file for collection of STI data of the unit; 5) promote HIV counseling, disclosure and keep records; 6) promote condom usage and reduce risk behaviors of HIV-infected females continuously.

Methods: HIV positive females attending STD Clinic, Department of OB–GYN, Siriraj Hospital were enrolled into the study during March 1, 2005 to September 1, 2006. The procedures include: 1) provide STI testing/treatment, risk-reduction and HIV disclosure counseling, provision of free condoms, and cervical cancer screening at least once a year; 2) develop standardized procedures and data collection tools and strengthen data management; 3) refer women from different departments to the STI clinic for screening; 4) provide training in risk reduction counseling and HIV disclosure counseling.

Results: Most of the primary visits were check-up. Chlamydial infection was 2.1% (year 2005). GC infection was 0.5% (year 2005). Abnormal Pap was significantly related to low CD4 count. L-SIL was 9.3% and H-SIL was 26.8%. Among the participants, 10.4% had CD4 count <200 cells/cu.mm.

Conclusion: Early detection and treatment of STI was 30%. Early detection of cervical cancer and treatment were increased. Access to ARV for HIV-1 PMTCT was also increased. Cross sectional analysis will show more realistic data since the follow up visit might be a group who came to receive condoms which could be missed as high condom use rate. KPI of success in good clinical tracer included increased condom use and CD4 count, decreased STI, opportunistic infection, and viral load.

Keywords: HIV, STI, cervical cancer screening, HIV counseling, condom usage, STD data collection.

Siriraj Med J 2009;61:27-30
E-journal: http://www.sirirajmedj.com

Rationale

Sexually transmitted disease (STD) is an important disease in Thailand. There has been a successful outcome of HIV prevention programs during the last decade, especially condom usage among the high risk population. STD and HIV prevalence have declined a lot during the last ten years because of such prevention.[1]

However sex is well incorporated with human beings that menas the STD will never be eliminated, Gonococcal infection and Human Papilloma virus infection were found to have increased prevalence in the last five years. There are several big centers for STD services in Thailand such as Bangrak Hospital and the Female STD unit, Department of Obstetrics and Gynecology, Siriraj Hospital. In order to improve STD services in Thailand, SR 01 is the program for such centers to organize and strengthen STD services of their own. This SR 01 program was initiated from Thai US Collaboration Centers, NonThaburi, Thailand (+ CDC, Atlanta, USA) and Siriraj Hospital, Bangkok, Thailand. The case records and consent forms and research personnel were prepared for the one and a half year SR 01 program at the Female STD Clinic, Outpatient

Correspondence to: Anuvat Roongpisuthipong
E-mail: siarp@mahidol.ac.th

Department, Siriraj Hospital, Bangkok, Thailand during March 1, 2005 to September 1, 2006.

MATERIALS AND METHODS

SR 01 was designed to create potential for improving care in HIV infected females for cervical cancer screening and sexually transmitted diseases service based on the main 6 objectives of:

1. Create the potential for systematic care to assess and monitor for HIV and sexually transmitted infection (STI).
2. Create the linkage among OB-GYN, Medicine and Pediatric Departments of Siriraj Hospital.
3. Cervical cancer screening in HIV-infected females by Pap smear once a year.
4. Create a system file for collection of STI data of the unit.
5. Promote HIV counseling, disclosure and keep records.
6. Promote condom usage and reduce risk behaviors of HIV-infected females continuously.

The program was from March 1, 2005 – September 1, 2006 at the Female STD Clinic, Outpatient Department, Siriraj Hospital, Bangkok, Thailand by using 4 main areas of services for HIV positive patients which include:

(1) Provide STI testing/treatment, risk-reduction and HIV disclosure counseling, provision of free condoms, and cervical cancer screening at least once a year.[2,3]

(2) Develop standardized procedures and data collection tools and strengthen data management.

(3) Refer women from different departments to the STI clinic for screening.[4]

(4) Provide training in risk reduction counseling and HIV disclosure counseling.[5,6,7]

The successful operation would be accomplished by the collaboration of 3 main departments, OB-GYN, Medicine and Pediatrics Departments of Siriraj Hospitals. Data analysis would be focused on patients' demographic data, sex behavior and condom use, STI prevalence and treatment, pap smear results and colposcopy, HIV disclosure and HIV-discordant partner. The patients would be followed up every 6 months. The Chi-square and P-value would be used for statistical calculation.

RESULTS

During March 1, 2005 to September 1, 2006 , the SR01 program was carried out. Four hundred and eighty two women came to receive services at the Female STD Clinic. The demographic data, diagnosis, sex behavior and condom use, STI prevalence and treatment, pap smear results and colposcopy, and HIV disclosure were analysed.

The results of demographic data of the 482 patients attending the Female STD Clinic, Siriraj Hospital during the study period showed the average age of 33 years with the range of 15-66 years with the mean age of 32 years. Most of the patients (36.1%) had completed elementary school, level 6, while 9.8% had completed a bachelor degree. Most of the patient's occupation is laborer, which accounted for 43.4% while housewife was 20.1% and government officer 2.7%.

Most of the patients attending the SR 01 program, about 3/4 (75%) came for STD and pap smear check up while the others were vaginal discharge, genital lesions or related symptoms at the genitalia.

The 482 patients were diagnosed as having definite conditions of STD or STD-related about 40% which included vulvo-vaginal candidiais (20.3%), bacterial vaginosis (10.2%) and chlamydia trachomatis infection (3.7%) etcetera. There were 59% of the patients who had negative results as the yearly check up cases.

Most of the patients (91%) contracted the STD from their sexual partners while the smaller number of patients had been infected through sexual contact with commercial sex workers and intravascular drugs use and a few from transfusion.

Concerning HIV status disclosure, most of the patients (77.8%) disclosed their status to their sex partners while the other, 22.2% did not.

The result of pap smear among this 482 patients, most of them (67%) had negative results while the rest: 10.6% had reaction to inflammation, 4.8% had ASCUS, 11.2% had LSIL and 4.1% had HSIL.

The results for the follow up studies at 6 months interval of further second and third visits showed similar results except for LSIL which was lower in the last two follow ups. The abnormal pap smear was be found in the patient with CD4 less than 200 cells/cu.mm with statistic significance, chi-square 25.07, P value <0.01, odds ratio =2.81 with confidence interval of 1.85-4.25.

DISCUSSION

This study aims to improve both sexually transmitted diseases services by STD centers, especially big centers in order to provide better service and management to STD patients and for cervical cancer screening in the population at risk while HIV positive patients wer considered to be one of the risk group. This study also helps to facilitate the associated clinical work between the three main departments of Siriraj Hospital: Obstetrics & Gynecology, Medicine and Pediatrics which have participation in such HIV positive females as mentioned.

The study period was 18 months which makes it easy for the investigator to see the patients for the first visit, second visit for the first follow up and the last visit for the second follow up, each visit of 6 months interval. Most of the patients participated in the study came for the cervical cancer check up by means of pap smear and STD evaluation which accounted for 45% and the results showed that 67% had negative pap smear results. The abnormal pap smear included HSIL of 26.8%[8] and other milder abnormal pap smear results such as LSIL (9.3%), ASCUS etcetera. The results

TABLE 1. Demographic data of the studied population.

Demographic Characteristics	Percent
Mean age, in years (range)	33.19 (20-66)
Education	Elementary (31.10%)
	Junior high school (16.40%)
	Senior high school (11.50%)
Occupation	Laborer (42.6%)
	Housewife (26.20%)
	Small retailer/Own business (18.00%)
	Unemployed (4.90%)

TABLE 2. Symptoms and signs of the studied population during each visit.

	1 (Enroll)		2 (re-visit)		3 (re-visit)	
	Number	%	Number	%	Number	%
No symptom	364	75.55.6	166	80.6	49	80.3
Itching genital area	27	0.6	13	6.3	3	4.9
Pain / Burn	3	7.5	2	1.0	1	1.6
Genital lesion	36	10.2	7	3.4	-	-
Vaginal discharge	49	2.1	21	10.2	7	11.5
Lower abdominal pain	10	1.0	3	1.5	1	1.6
	5		1	0.5	1	1.6
Total	N=494	100.0	N=213	100.0	N=62	100.0

TABLE 3. Diagnosis of the studied population during each visit.

Diagnosis	1 (Enroll)		2 (re-visit)		3 (re-visit)	
	Number	%	Number	%	Number	%
Normal	285	59.1	121	58.7	40	65.6
Candidiasis	98	20.3	37	18.0	13	21.3
Bacterial Vaginosis	49	10.2	23	11.2	7	11.5
Chlamydia	18	3.7	12	5.8	1	1.6
Cervicitis	9	1.9	3	1.5	1	1.6
Herpes	9	1.9	2	1.0	-	-
Non specific vaginitis	8	1.6	5	2.4	-	-
Trichomonas	7	1.5	2	1.0	1	1.6
Gonorrhea	4	0.8	5	2.4	-	-
Syphilis	3	0.6	1	0.5	-	-
Chancroid	1	0.2	-	-	-	-
Lower abdominal pain	-	-	1	0.5	-	-

TABLE 4. Pap smear results of the studied population during each visit.

Pap smear result	1 (Enroll)		2 (re-visit)		3 (re-visit)	
	Number	%	Number	%	Number	%
Not done	11	2.3	6	2.9	-	-
Normal	323	67.0	151	73.3	51	83.6
Reaction of inflam	51	10.6	16	7.8	3	4.9
ASCUS	23	4.8	8	3.9	3	4.9
LSIL	54	11.2	21	10.2	3	4.9
HSIL	20	4.1	5	2.4	1	1.6

showed similarly high prevalence of abnormal cervical cytology among HIV positive females to that of other studies.[9,10,11] This study would encourage early detection and treatment of cervical cancer especially in the patients with human papilloma virus infection which has already been proved to be related to cervical cancer.[12,13]

In the case of positive abnormal pap smears as in this study, the gynecologist will find it better to investigate more about cervical cancer such as colposcopic examination with selective biopsy, cervical conization or LEEP to achieve the cervical histology which is the most reliable evidence of malignancy before starting the cancer therapy.

Sexually transmitted diseases could be detected in the first visit in approximately 30% of the patients in this study, such as candidiasis was found 20.3%, bacterial vaginosis 10.2%, chlamydia trachomatis infection 3.7%, herpes genitalis 1.9%, trichomonas vaginalis 1.5%, gonococcal infection 0.8%, and syphilis 0.6%. Those patients with STD detected in the first visit would certainly receive appropriate and prompt treatment very quickly and the good prognosis would be expected.[14] It could be anticipated that HIV positive patients with STD would be subjected to rapid progress of the HIV disease, but this study would offer rapid detection of STD in HIV positive cases with rapid treatment and the good forecast of HIV disease in the near future.[15,16]

There was a CD4 check up in the program which would stratify the patients who have a lower CD4 count = less than 200 cells/cu.mm. as full blown AIDS cases who need intensive antiretroviral therapy such as HAART.[17] On the other hand, pregnant women with a HIV positive result would have a better chance to access antiretroviral medication as a preventive program for the HIV mother to child transmission prevention. The expectation for HIV MTCT was to lower HIV transmission and have less HIV infected babies as the summative result.[18]

This study showed rather high loss to follow up rate in the second and third visits respectively. The 50% loss to follow up was recognized during the second visit, only 206 cases came back to the study. The 70% loss to follow up was found when only 61 patients came back for the third follow up compared to those in the second visit. The patients who came back for second and third visit had a specific character of requirement for example a group of condom usage

whose purpose was to get condoms[19] from the study. The misleading interpretation for such cases would be there was high condom usage in the follow up. Moreover, there was a group of antenatal care patients who were pregnant and anti HIV positive whose purpose was to receive the program of HIV mother to child transmission prevention. The total number of abnormal pap smear cases in this study did not come for appropriate follow up. In the good follow up cases for abnormal pap smear, the investigator would be able to tell the cytological changes in each case and it would be beneficial for those with increased degree of cytological abnormality. The early cervical cancer detection would be of real benefit.

The lessons learned in this study about high loss to follow up rate and the specific character of the follow up group is that there should be a good follow up rate of more than 90% of the enrolled cases which will make the investigator to know the real benefit of the program on STD management and to really know the progress of the abnormal cervical cytology of the studied patients. This is a good clinical tracer which will need the KPI of increased use of condoms, CD4 count, viral load and decreased STI in the studied population. The results from good setting of a high follow up rate of more than 90% could be implemented as a standard guideline for HIV positive females in different care centers.

The suggestion for the evaluation of such high loss to follow up study is to do the cross sectional study and analysis which will bring about the realistic results.

Future plans for HIV positive pregnant women are to promote couple counseling because it was discovered that male consorts of these patients had an important role in the prophylaxis and treatment of the patients diseases. The access to new federal regulation or law that will deal with HIV discordant cases in HIV positive pregnant women will minimize the problem and conflict in those couples.

REFERENCES

1. Hanenberg RS, Rojanaphithayakorn W, Kunasol P, Sokal DC. Impact of Thailand's HIV-control programme as indicated by the decline of sexually transmitted diseases. Lancet 1994;344:243-5.
2. Gouws E, White PJ, Stover J, and Brown T. Short term estimates of adult HIV incidence by mode of transmission: Kenya and Thailand as examples. Sex Transm Infect 2006;82:iii51-55.
3. Centers for Disease Control and Prevention. Incorporating HIV prevention into the medical care of persons living with HIV: recommendations of CDC, the Health Resources and Services Administration, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. MMWR 2003;52(No.RR-12):1-24.
4. Global HIV Prevention Working Group. HIV prevention in the era of expanded treatment. 2004. Available at http://www.kff.org/hivaids/hiv061004pkg.cfm Accessed March 23, 2005.
5. Johnson BT, Carey MP, Chaudoir SR, and Reid AE. Sexual risk reduction for persons living with HIV: research synthesis of randomized controlled trials, 1993 to 2004. J Acquir Immune Defic Syndr 2006;41:642-50.
6. Crepaz N, Lyles CM, Wolitski, RJ, et al. Do prevention interventions reduce HIV risk behaviours among people living with HIV? A meta-analytic review of controlled trials. AIDS 2006;20:143-57.
7. Bunnell R, Ekwaru JP, Solberg P, et al. Changes in sexual risk behavior and risk of HIV transmission after antiretroviral therapy and prevention interventions in rural Uganda. AIDS 2006;20:85-92.
8. Frega A, Biamonti A, Maranghi L, Vetrano G, Palazzo A, Iacovelli R et al. Follow-up of high-grade squamous intra-epithelial lesions (H-SIIs) in human immunodeficiency virus(HIV)-positive and human papilloma virus(HPV)-positive women. Analysis of risk factors. Anticancer Res 2006;26(4B):3167-70.
9. Biggar RJ, Chaturvedi AK, Goedert JJ, Engels EA, HIV/AIDS Cancer Match Study. AIDS-related cancer and severity of immunosuppression in person with AIDS. J Natl cancer Inst 2007;99(12):962-72.
10. Kiertiburanakul S, Likhitpongwit S, Ratanasiri S, Sungkanuparph S. malignancies in HIV-infected Thai patients. HIV Med. 2007;8(5):322-3.
11. Barbaro G, Barbarini G. HIV infection and cancer in the era of highly active antiretroviral therapy (Review). Onco Rep 2007;17(5):1121-6.
12. Cameron JE, Hagensee ME. Human papilloma virus infection and disease in the HIV+ individual. Cancer treat Res 2007;133:185-213.
13. Lehtovirta P, Finne P, Nieminen P, Skogberg K, Savonius H, Paavonen J et al. Prevalence and risk factors of squamous intraepithelial lesions of the cervix among HIV infected women- a long – term follow-up study in a low-prevalence population. Int J STD AIDS 2006;17(12):831-4
14. Sirivongrangson, P, Bollen LJM, Chaovavanich A, et al. Sexually transmitted infection services as a component of HIV care: findings of a demonstration project among HIV-infected women in Thailand. J Acquir Immune Defic Syndr 2006;41:671-4.
15. Boiley MC, Bastos F, Desai K, et al. Changes in the transmission dynamics of the HIV epidemic after the wide-scale use of antiretroviral therapy could explain increases in sexually transmitted infections: results from mathematical models. Sex Trans Dis 2004;31:100-13.
16. Massad LS, Fazzari MJ, Anastos K, Klein RS, Minkoff H,Jamieson DJ et al. Outcomes after treatment of cervical intraepithelial neoplasia among women with HIV. J Low Genit Tract Dis 2007;11(2):90-7.
17. Scheer S, Lee Chu P, Klausner JD, et al. Effect of highly active antiretroviral therapy on diagnoses of sexually transmitted diseases in people with AIDS. Lancet 2001;357:432-5.
18. Bureau of AIDS, TB and STIs, Department of Disease Control, Ministry of Public Health, Thailand. Towards Universal Access by 2010: Thailand National HIV and AIDS Program. Available form: http://www.aidsthai.org/aidsenglish/nation_care.html Accessed April 25, 2007.
19. Richardson JL, Milam J, McCutchan A, et al. Effect of brief safer-sex counseling by medical providers to HIV-1 seropositive patients: a multiclinic assessment. AIDS2004;18:1179-86.