

# **New Approach of STI/HIV in OB-GYN**

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*J Med Assoc Thai 2005; 88(Suppl 2): S129-32*

*Full text. e-Journal: <http://www.medassocthai.org/journal>*

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### **Scope of content**

1. The common STI in this era are Syphilis, Condyloma acuminata, Fungus infection, Gonococcal infection and Trichomoniasis. Less common are hepatitis A, B and C. Increasing prevalence and stay plateau is maternal HIV - 1 infection and PMTCT.

2. Interaction of STIs and HIV infection.

3. New diagnostic technology

4. Epidemiology: Pediatric Adolescent group - changing trend

5. New mutant strain of infectious organism eg HIV & Nevirapine resistance.

6. New drugs and up to date guideline

### **Syphilis**

There is an effort to eliminate syphilis in the United States in the year 2000 that is a good step when small pox had been eradicated from the earth after WHO eradication program<sup>(1)</sup>.

Symptomatic syphilis was rarely found as before while latent syphilis was still steady low prevalence as usual and the diagnosis will be made by serology for syphilis.

According to the study of the Division of Gynecologic Infections and Female STD Unit, OB-GYN Department, Siriraj Hospital, Syphilis is the sexually transmitted disease which was found most common with HIV-1 more than other STDs<sup>(2)</sup>.

Although some other STDs were found less common than in the past such as Chancroid, Granuloma inguinale, Lymphogranuloma venereum, etc. but syphilis was consistently found in the low prevalence that Obstetrician must not miss it.

During the period of 2003-2004, the Thailand market was short of Benzathine penicillin. Siriraj Hospital also had the same problem, so we had to ask for help from Bangrak Hospital and arranging to have LC in order to import Benzathine penicillin from India which was better than using one month erythromycin, orally for asymptomatic late latent syphilis. Fortunately, the problem was clear in the year 2005.

### **Condyloma acuminata**

There is an increasing trend of Condyloma acuminata in the last 5 years In Thailand. The increasing prevalence were noted among women with lesion of genital wart and related cytological evidences of human papilloma virus especially those who were HIV-positive cases.

There have been convincing evidence that showed closed relation of human papilloma virus DNA and carcinoma of cervix uteri<sup>(3)</sup>. There were several studies concerning human papilloma virus and cervical carcinoma, either Pap smear, Colposcopic examination and biopsy, Polymerase chain reaction(PCR) or DNA probe : hybridization<sup>(4)</sup> in order to find the true relationship of human papilloma virus and cervical carcinoma .

The effort of human papilloma virus vaccine development have been trialed in a broad scale. The autogenous vaccine of Condyloma acuminata was believed and recommended for use in patients with genital wart by Powel LC et al in 1981<sup>(5)</sup>, although Malison MD et al in 1982<sup>(6)</sup> could not show any statistic difference between the study group with vaccine use and the control group without. In the present time there are two big drug companies who are preparing to start out the vaccine program in general population after 4-5 years of clinical trials.

### **Herpes genitalis**

The prevalence of herpes simplex virus infection in women was a slight change but the whole infected group of infected people was not small because whenever you contracted the disease, the infectious organism will embed in the sensory nerve ganglion of the previously infected skin area<sup>(7)</sup>. The remaining virus can be reactivated and cause recurrence which may be quite often.

The International AIDS Conference in Bangkok in the year 2004, there was reports from certain investigator that HIV-1 infection can be contracted through the genital herpetic lesions either

transmitted or having been infected from white blood cell on the surface of those herpetic lesions<sup>(8)</sup>. The pathogenesis of HIV transmission was similar to that of chancroid lesion which cause HIV transmission through white blood cell on the surface of chancroid lesion found in the study among HIV infected individual in Africa<sup>(9)</sup>.

When the possible route of transmission was proposed by herpetic ulceration, the ministry people or preventive officer must think carefully for appropriate way of transmission prevention in the near future among rather high prevalence of herpes simplex infection population.

The obstetric point of view concerning vertical transmission of herpes simplex virus during labor, premature rupture of membranes in the pregnant women with genital herpetic ulcer will come to a question of how many hours after membranes rupture will be defined as “grey zone” In the past 4 hours was accepted but at present time the so called grey zone is believed to be 6-8 hours<sup>(10)</sup> which means after that time it is likely for herpes simplex virus infection to get access through the ruptured membranes and reach the fetus.

### **Fungus infection**

Vulvo-vaginitis in females caused by fungus infection is a common problem in Obstetrics and Gynecology practice. Recurrence of such infection is not only a simple medical problem but also a psychological issue which need appropriate care along with medical treatment of causative organism. The possible causes of such recurrent fungal vulvo-vaginitis are resistant strain of fungus itself to medication or persisting risk of predisposing factors which need to be eliminated. Clotrimazole vaginal tablet, Fluconazole<sup>(11)</sup> and Itraconazole<sup>(12)</sup> oral tablets have been used to treat fungal vulvo-vaginitis more than a decade with certain number of emerging drug resistance.

Sertaconazole is a new drug for such fungal vulvo-vaginitis whith preparation of vaginal tablet of 500 mg. for single dose application before bedtime at night. The previous report by Torres J et al<sup>(13)</sup> and Palacin C et al<sup>(14)</sup> in the year 2000 showing good anti-fungal efficacy and less side effect. The question for the company is how to make the product available as oral medication like other antifungals used nowadays. The most important problem for this is that Sertaconazole will be rapidly inactivated by gastric and intestinal enzymes and the researcher is trying to solve the problem.

Recently, the new fungal strain found in the

United States is *Candida Dublinensis* which Siriraj fungal laboratory did not find such strain from the study<sup>(15)</sup>.

### **Gonococcal Infection**

During the last ten years, the prevalence of gonococcal infection had greatly declined to the lowest point ever found in Thailand in the year 2000 which may due to the campaign of AIDS prevention in Thailand with 100% condom resulting in decrease prevalence of gonorrhea as well.

According to the careful surveillance of Bangrak Hospital, the sexually transmitted diseases unit, it was revealed that gonococcal infection has access to its increasing prevalence, little by little from the year 2000 – 2004 and the same pattern was found in the group of genital warts also. During the same period of time, The Gynecologic Infections and Female STD unit of the department of Obstetrics & Gynecology, Siriraj Hospital had found similar evidences as Bangrak Hospital, the increasing numbers of patient who had gonococcal infection and human papilloma virus infection.

Concerning this issue of increasing prevalence of gonorrhea and genital warts among adolescence and young adults, it will be an alarm sign which remind that the previously effective prevention program of STD/AIDS in Thailand that the prevention program should be reconsider once more.

The newly invented drug for treating patients with gonococcal infection is not popular as before due to the low prevalence of gonorrhea for a long period of time, however, Cefixime 400 mg. single dose orally is the most popular drug while ceftriaxone 250 mg. single dose intramuscularly is also used commonly. To treat *Chlamydia trachomatis* infection simultaneously with gonorrhea is preferred to by using Doxycycline 100 mg orally after meal twice a day for 7 consecutive days. The alternative medication for *Chlamydia* is azithromycin 1 gm. single dose, orally which is more popular now<sup>(16)</sup>.

### ***Trichomonas vaginalis***

When trichomonads was found in vaginal discharge of the patients more and more, it reflect the more ineffective of AIDS prevention with condom. You may suspect that your counseling provided for sexually transmitted diseases or HIV-infected patients will not work or there is a failure of counseling.

In the past, diagnosis of trichomoniasis based mainly on wet smear and direct microscopy and

sometimes culture on specific media such as CPLM (Cystine Peptone Liver Maltose) media,<sup>(17)</sup> but in the present time, PCR was used with quick and sure result and there were several papers supported the use of PCR instead of old diagnostic methods<sup>(18,19)</sup>.

Although there is no newly invented drug for use in vaginal trichomoniasis but the convention drugs are still effective.

#### **HIV-1 Perinatal transmission prevention**

ACTG 076 in the year 1994 showed that Zidovudine (ZDV) can reduce HIV-1 mother to child transmission from 25.5% in the placebo group to 8.3% in the study group<sup>(20)</sup>

Short course Zidovudine (Bangkok Regimen) in the year 1998, ZDV use in the 3<sup>rd</sup> trimester of pregnancy can decrease HIV-1 mother to child transmission from 18.9% in the placebo group to 9.2% in the study group accounting for 50% reduction.<sup>(21)</sup>

DualARV (ZDV + 3TC) can reduce transmission rate down to 2.8%<sup>(2)</sup> ZDV + NVP in 2003 can reduce the rate to 4.6%<sup>(22)</sup> but NVP resistance was found in women who received NVP for HIV -1 transmission prevention about 25%. Further studies are needed to lower the NVP resistance.

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