

Prevalence of Sexually Transmitted Infection in Teenage Pregnancy in Rajavithi Hospital, Thailand

Suvanna Asavapiriyant MD, MSc*,
Udom Chaovarindr MD*, Surasak Kaoien MD*,
Uraivan Chotigeat MD**, Ekachai Kovavisarach MD*

* Department of Obstetrics and Gynecology, Rajavithi Hospital, College of Medicine, Rangsit University, Bangkok, Thailand

** Queen Sirikit National Child Health Institute, Bangkok, Thailand

Background: Behavioral and social changes in the modern era have triggered an increase in the incidence of early sexual contact and teenage pregnancy. Since there is no routine Gonococcal & Chlamydial (GC & CT) screening in teens in antenatal clinics in Thailand, the present study was performed to find the prevalence of STI, especially Chlamydial infection, in teenage pregnancy.

Objective: To evaluate the prevalence of sexually transmitted infections (STIs), especially Chlamydial infection (CT), in teenage pregnancy and its related factors.

Material and Method: One hundred and twenty-one teenage pregnancies were recruited at the ANC in Rajavithi Hospital from October 2006 to May 2007. After signing informed consent forms, they were asked to answer questionnaires about baseline data, sexual information and risk factors, after which urine specimens were collected for screening for GC and CT using the PCR technique (AMPLICOR by Roche). Later, pelvic examination was performed by the gynecologist at the STD (sexually transmitted disease) clinic. All the data and LAB results were recorded and analyzed by the SPSS program. Numbers, percentages, means with SD, Chi-squared test, Fisher's exact test and odds ratio were used. Potential risk factors were analyzed using binary logistic regression.

Results: The prevalence of STI in pregnant teenagers was 28.1% (CT = 19.8%, GC = 1.7%, hepatitis B = 3.3%, trichomoniasis 1.7%, Herpes simplex = 0.8% and condyloma acuminata = 0.8%). No Syphilis, chancroid or HIV were found in the present study. Other non-STI like candidiasis and bacterial vaginosis were found in 45.5% of participants (candidiasis and bacterial vaginosis at 19.0% and 24.8%, respectively). The risk of CT infection was significantly related (6.9 times higher) to having previous sexual contact before the current partner (95% CI, 1.8-27.0).

Conclusion: STI, especially Chlamydial infection, was found in a significant number of teenage pregnancies. Measures should be taken to prevent this resulting in complicated outcomes in the future.

Keywords: Prevalence, Sexually transmitted infection, Teenage pregnancy, Chlamydial infection

J Med Assoc Thai 2016; 99 (Suppl. 2): S153-S160

Full text. e-Journal: <http://www.jmatonline.com>

Sexually transmitted infections (STIs) are relatively common during pregnancy. Common STIs found include syphilis, gonorrhoea, chlamydia, trichomoniasis, hepatitis B, human immunodeficiency virus (HIV), herpes simplex virus-1 and -2 (HSV-1, -2) and human papillomavirus infections (HPV). STI is one of the causes of female mortality and morbidities such as infertility, pelvic inflammatory disease (PID), chronic

pelvic pain, cancer of reproductive organs, HIV infection and poor obstetric outcomes such as ectopic pregnancy, miscarriage, preterm labor, fetal death, premature rupture of membranes (PROM), chorioamnionitis, prenatal infection and infant morbidity and mortality⁽¹⁻⁷⁾. Behavioral and social changes in the modern era are triggering a higher incidence of early sexual contact and teenage pregnancy^(8,9). There is no routine Gonococcal & Chlamydial (GC&CT) screening in teens in antenatal clinics in Thailand, and the present study was performed to find the prevalence of STI, especially Chlamydial infection, in teenage pregnancies in Rajavithi Hospital (a tertiary care center).

Correspondence to:

Asavapiriyant S, Department of Obstetrics and Gynecology, Rajavithi Hospital, 2 Phayathai Road, Rajathewi, Bangkok 10400, Thailand.

Phone: +66-2-3548165 ext. 3226, Fax: +66-2-3548084

E-mail: asuvanna@yahoo.com

Material and Method

The present study was approved by the Ethics Committee of Rajavithi Hospital, a tertiary care hospital under the Department of Medical Services, Ministry of Public Health. Pregnant teens (age <20 years) were recruited at the ANC in Rajavithi Hospital between October 2006 and May 2007. Written informed consents were obtained. Questionnaires requesting baseline data, sexual information and risk factors were completed by the project nurses after which urine specimens were collected for GC, CT and PCR using AMPLICOR CT/NG test by Roche. Later, pelvic examination was performed by the gynecologist at the STD clinic. All the infected cases and their partners were called back and the former were treated with erythromycin stearate 2 grams/day while the latter were prescribed doxycycline 200 mg/day; other STI and non-STI cases, including partners, were treated with the standard regimen⁽¹⁰⁾. All the data and LAB results were recorded on the questionnaire form and analyzed by SPSS for Windows version 14.0. Numbers, percentages, and means with standard deviation (SD) were used for description, and Chi-squared test, Fisher's exact test, odds ratio and multiple logistic regression were used for analysis where possible.

Results

One hundred and twenty-one pregnant teenagers were recruited into the study. Most of them lived in Bangkok (41.3%), and the rest lived in three other parts of Thailand (58.7%). Their average age was 17.16±1.30 years (min-max: 15-19). Most participants were housewives or had no occupation (57.0%), and lived with their parents (45.5%). Two had no formal education (1.7%), but most of them had completed secondary education of 7-9 years (68.6%). About ninety-two percent were cohabiting with their partners outside marriage, and the mean length of time cohabiting before pregnancy was 20 months. This was the first pregnancy in about 93.0% of cases, and only 40.0% of pregnancies were planned. The average family income was about 9,842.20 Baht (308 US\$, 1 US\$ = 32 Baht) with a minimum of 2,000 Baht (62.5 US\$) a month (Table 1). Their partners' average age was about 23 years; the youngest and oldest were 15 and 47 years, respectively. About 71% of these had had an education of more than six years. Most participants were employees, as were their parents, of whom around 26% were separated or divorced. About 35% had had more than one partner (Table 2).

With regard to sexual behavior, participants

Table 1. Characteristics of study participants

Characteristics	Number (%)
Age (years)	
Mean ± SD	17.16 ± 1.30
Mode (min-max)	16 (15-19)
Residence Bangkok	50 (41.3)
Other parts of Thailand	71 (58.7)
Education (years)	
None	2 (1.7)
1-6 (primary)	22 (18.2)
7-9 (secondary)	83 (68.6)
>9 (higher)	14 (11.6)
Occupation	
Housewives/no occupation	69 (57.0)
Students	22 (18.2)
Employees	18 (14.9)
Others	12 (9.9)
Housing	
Living with parents	55 (45.5)
Living with partners	66 (54.5)
Marital status	
Cohabiting	110 (90.9)
Married	7 (5.8)
Separated	4 (3.3)
Gravidity	
First	112 (92.6)
Second	9 (7.4)
Planned pregnancy	48 (39.7)
Time from cohabiting to pregnancy (months)	
Mean ± SD	20.37±13.00
Mode (min-max)	12 (3-72)
Family income (baht/month)	
Mean ± SD	9,842.20±6,559.93
Mode (min-max)	6,000 (2,000-50,000)

had their first sexual contact at an average age of 15 years (one participant was sexually abused at 4 years old with the knowledge of her parents), but they had usually learnt about sex 1 year earlier. Thirty-two percent had sexual contact before their current partner: nearly half of these had had one partner before, one quarter had had two partners and about one-fifth had had more than two. They learnt about sex at school (86.8%), from friends (40.5%) and from radio/television (33.1%), and gained STI knowledge from school (87.6%) and the mass media (60.3%). About 2% used to be secret sex workers and 3% had had previous STIs. Most believed that people should not have sexual contact before marriage. The frequency of sexual contact declined during pregnancy from many times a week to once a

Table 2. Characteristics of partners & parents

Characteristics	Number (%)
Partners	
Age (years)	
Mean \pm SD	22.56 \pm 5.43
Mode (min-max)	20 (15-47)
Education (years)	
None	4 (3.3)
1-6	29 (24.0)
7-9	44 (36.4)
>9	42 (34.7)
Unknown	2 (1.7)
Occupation	
No occupation	8 (6.6)
Students	5 (4.1)
Employees	52 (43.0)
Workers	36 (29.8)
Others	20 (16.5)
Parents	
Main occupation	
Employees	56 (46.3)
Agriculture	19 (15.7)
Merchant	20 (16.5)
Government service/enterprise	12 (9.9)
Others	14 (11.6)
Marital status	
Cohabiting	81 (66.9)
Separated	18 (14.9)
Divorced	14 (11.6)
Others	8 (6.6)
Partners >1	42 (34.7)

week and once a month. Most of them (96.7%) had knowledge of family planning (FP), and the main techniques that they knew about were oral contraception (OC) (95.9%) and condoms (95%). Only 50% used FP before pregnancy, and OC and the withdrawal technique were the forms that they used most. Only 14% used condoms, and even then not every time. With regard to their partners' sexual behavior, 95% of them had not had sex with other men (MSM), and about one-third had had more than one partner (Table 3).

With regard to unhealthy practices, one-fifth of participants (26/121) displayed these: alcohol use was at around 10% (13/121) and around 10% (12/121) of subjects displayed more than one kind of unhealthy practice. Eighty-eight percent of partners (106/121) had unhealthy habits and around 65% (78/121) had more than one kind: 14% (17/21) smoked cigarettes, and 9% (11/21) consumed alcohol.

Table 3. Sexual behavior, knowledge, attitude and family planning practices

Characteristics	Number (%)
Age of first sexual contact (years)	
Mean \pm SD	15.38 \pm 1.81
Mode (min-max)*	15 (4-18)
First sexual knowledge (years)	
Mean \pm SD	13.80 \pm 1.55
Mode (min-max)	15 (10-18)
Sexual contact before current partner	39 (32.2)
Number of partners	
1	20 (51.3)
2	11 (28.2)
>3	8 (20.5)
Previous secret sex worker	2 (1.7)
Prior STI (1 GC, 2 HSV)	3 (2.5)
Site of sexual knowledge**	
Peeping from parents	6 (5.0)
Internet	13 (10.7)
VDO	16 (13.2)
Printed matter	39 (32.2)
Radio/Television	40 (33.1)
Friends	49 (40.5)
School	105 (86.8)
Knowledge of STI	
Internet Sites	8 (6.6)
Parents	17 (14.1)
Friends	27 (22.3)
Medical personnel	33 (27.3)
Mass media	73 (60.3)
School	106 (87.6)
STI knowledge (items)	
Mean \pm SD	1.56 \pm 0.73
Mode (min-max)	1 (1-4)
Attitude to having sex before marriage	
Prior marriage	5 (4.1)
After marriage	107 (88.4)
No need for marriage	8 (6.6)
Other	1 (0.8)
Frequency of sexual contact before pregnancy	
Many times a week	79 (65.3)
Once a week	32 (26.4)
Once a month	7 (5.8)
Twice a month	3 (2.5)
Frequency of sexual contact during pregnancy	
Many times a week	21 (17.4)
Once a week	51 (42.1)
Once a month	29 (24.0)
No sexual contact	18 (14.9)
Other	2 (1.7)
Knowledge of family planning	117 (96.7)

* sexual abuse; ** more than one type

The prevalence of STI in teenage pregnancy was 28%. There was chlamydial infection of around 20%, 3.3% were hepatitis B carriers, GC 1.7%, TV 1.7%, and there was one herpes infection and one condyloma acuminata. No syphilis, HIV or chancroid were found in the study. Other non-STIs (45.5%) were BV and candidiasis found in 24.8 and 19% of cases respectively (Fig. 1). Having had previous sexual contact before their current partner and suspecting that their current partner had other partners were significantly related to CT infection with aOR 6.9 (95% CI, 1.8-27.0) $p = 0.005$ and 0.1 (95% CI, 0.02-0.6) $p = 0.010$, respectively (Table 4).

Table 3. Cont.

Characteristics	Number (%)
Types of FP known**	
OC	116 (95.9)
Emergency oral pill	73 (60.3)
Hormonal injection	82 (67.8)
Hormonal implant	34 (28.1)
IUD	49 (40.5)
Safety period	53 (43.8)
Withdrawal technique	75 (62.0)
Condom	115 (95.0)
FP before pregnancy**	
Using OC	62 (51.2)
Emergency oral pill	37 (30.6)
Hormonal injection	6 (5.0)
Safety period	2 (1.7)
Withdrawal technique	2 (1.7)
Condom	27 (22.3)
Condom	17 (14.0)
Sometimes	15 (61.2)
Every time	2 (38.8)
Partner sexual behavior	
No MSM	115 (95.04)
More than 1 partner	39 (32.2)

* sexual abuse; ** more than one type

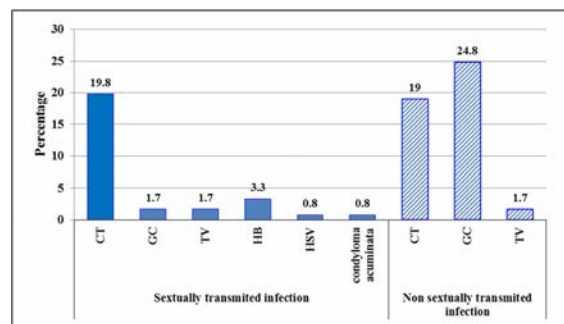
Table 4. Risk factors for CT infection using binary regression analysis

Risk factors from model	aOR (95% CI)	p-value
Residence (other part, Bangkok)	0.9 (0.2-4.8)	0.949
Housing (living with parents, with partners)	0.6 (0.1-2.8)	0.531
Prior partner before current partner (yes, no)	6.9 (1.8-27.0)	0.005*
Feeling that partner had other partner (yes, no)	0.1 (0.02-0.6)	0.010*
Planned pregnancy (no, yes)	0.6 (0.1-2.6)	0.485

* significant at $\alpha < 0.05$; aOR = adjusted odds ratio

Discussion

The study showed a high prevalence of STIs, especially CT, in teenage pregnancy. In Thailand, routine CT/GC screening on teens is not performed because of the high cost of the LAB. Many STIs will fail to be diagnosed because of asymptomatic infection⁽¹¹⁻¹³⁾. This could trigger adverse events in subsequent pregnancies such as ectopic pregnancy, PID, and chronic pelvic pain. Moreover, there were also obstetric and perinatal complications in the current pregnancy^(2,12). This study found that most teens had first, early sexual contact, with a mode of 15 years old. One-third had had sexual contact with someone else before the current partner. Sexual knowledge was acquired at school and from friends; only a few participants gained this knowledge from the internet. This may be due to their low socioeconomic status, their family income inhibiting their opportunities for easy access to the internet. They also had little knowledge of STIs. This finding was in agreement with the results of a systematic review by Samkange-Zeeb



CT = chlamydial infection, GC = gonococcal infection, TV = trichomoniasis, HB = hepatitis B carrier, HSV = herpes simplex infection, BV = bacterial vaginosis

Fig. 1 Prevalence of STI and non-STI infection in teenage pregnancy.

et al⁽¹⁴⁾, which found that there were low levels of knowledge and awareness of STD apart from HIV/AIDS among school-attending adolescents in European countries. Most subjects knew about OC and condoms, but only half of them practiced FP. The main techniques they used were OC and the withdrawal technique. In the systematic review by Samkange-Zeeb et al⁽¹⁴⁾, even among the adolescents who knew that the use of condoms helped protect against contracting an STD, some still regarded condoms primarily as an interim method of contraception before using the pill. According to the World Health Organization Medical Eligibility Criteria for using contraceptive methods, adolescents can use many kinds of contraception. OC is one method used with a low failure rate of only 0.3 per 100 women in the first year⁽¹⁵⁾; however, other studies found that 33 percent of adolescents had missed a pill in the previous three months^(16,17). For this reason, the American College of Obstetricians and Gynecologists and the American Academy of Pediatrics have recommended that the intrauterine device (IUD) and contraceptive implant be considered as a first-line method of preventing unintended pregnancy in adolescents^(18,19). In this study, only a few teens used condoms and those who did so, did not use them every time. A study by Tyden T, Gottvall M and Hoglund AT⁽²⁰⁻²²⁾ found that the percentages of participants who reported using condoms at first sexual intercourse and at last sexual intercourse were 45-65% and 31%, respectively. One-fifth of pregnant teens had bad habits; alcohol consumption was the most common type. Partners had a greater number of bad habits, with a high use of alcohol and cigarettes. Drinking alcohol was a risk factor for STI due to lack of planning for sexual intercourse, leading to non-carrying of condoms⁽²³⁾.

The prevalence of STI in teenage pregnancy was 28%, and CT was ranked highest (19.8%). This was in line with the rate found in a Chilean study^(24,25). Other studies found rates of CT in non-pregnancy from 1.1-10.6%⁽²⁶⁻³¹⁾, and this may be associated with having early sexual contact and having multiple partners without using condoms⁽³¹⁾. This study found a significant relationship between CT infection and prior sexual contact before the current partner, especially when there had been a number of partners. Participants who had had more than one partner prior to this pregnancy were 6 times more likely to get CT infection, similar to the findings of Skjeldestad FE et al's study⁽²⁵⁾. Multivariate analyses showed that age <24 years and number of new partners over the last 12 months were

factors associated with CT infection⁽²⁵⁾. In this study, partners' sexual behavior was found to be a preventive factor if participants had had more than one partner. This information was derived from the suspicions of the teens rather from their directly asking their partners. The reason for this being a preventive factor may be that it made them suspect that their partners may have an infection.

With regard to non-STI infection, BV was found in 25% of participants, and this was comparable to the results of studies among pregnant women in Kenya and South Africa (21-29%)⁽³²⁻³⁴⁾ but higher than in studies in industrialized countries (11-15%)^(35,36). The difference in prevalence may stem from many factors such as the different techniques used in diagnosis; in this study, Amsel's criteria were used for diagnosis.

The second most common non-STI infection found in this study was candidiasis, which had a prevalence of 19%. Candidiasis has been commonly found in pregnancy but rarely in studies of teenage pregnancy.

Conclusion

The prevalence of STIs in teenage pregnancy was 28%, and Chlamydial infection was the most commonly found (19.8%). Other non-STIs like candidiasis and bacterial vaginosis were found in 19% and 25% of cases, respectively. Risk of Chlamydial infection was significantly related to prior sexual contact before the current partner and a suspicion that the partner had other partners. STIs in teens should be treated as a cause for concern, and measures such as CT/GC screening should be taken in the ANC to prevent the occurrence of complicated outcomes in the future⁽²⁰⁾.

What is already known on this topic ?

This study was the first study of this topic in Rajavithi Hospital. A few studies had been done in Thailand many years ago.

What this study adds ?

This study showed a high prevalence of CT infection in teenage pregnancy, and highlights the need for the authorities to be concerned about this finding.

Acknowledgement

The authors wish to thank all the patients who participated in this study. In addition, the authors sincerely appreciate the help and support of Dr. Ladda Damrikarnlert from Queen Sirikit National Child Health

Institute in the study and all staff in the STD clinics at Rajavithi Hospital.

Potential conflicts of interest

None.

References

1. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC 3rd, Wenstrom KD. Sexually transmitted diseases. In: Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC 3rd, Wenstrom KD, editors. Williams obstetrics. 22nd ed. New York: McGraw-Hill; 2005: 1301-20.
2. Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, et al. Sexually transmitted diseases. In: Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, et al., editors. Williams obstetrics. 24th ed. New York: McGraw-Hill; 2014: 1265-86.
3. Centers for Disease Control and Prevention. Sexually transmitted disease surveillance, 2002. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2002.
4. Cates W Jr, Wasserheit JN. Genital chlamydial infections: epidemiology and reproductive sequelae. *Am J Obstet Gynecol* 1991; 164: 1771-81.
5. Westrom L, Eschenbach D. Pelvic inflammatory disease. In: Holmes KK, Sparling PF, Mardh P, Sparling PF, Lemon SM, Stamm WE, et al, editors. Sexually transmitted diseases. 3rd ed. New York: McGraw-Hill; 1999: 783-809.
6. Wallin KL, Wiklund F, Luostarinen T, Angstrom T, Anttila T, Bergman F, et al. A population-based prospective study of Chlamydia trachomatis infection and cervical carcinoma. *Int J Cancer* 2002; 101: 371-4.
7. Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. *Sex Transm Infect* 1999; 75: 3-17.
8. Warakamon S, Takrudtong M. Reproductive health in Thailand: an overview. *Family Planning and Population* [Internet]. 1998 [cited 2015 Dec 1]; Available from: http://advisor.anamai.moph.go.th/download/Factsheet/Eng/FS_Vol1No6E.pdf
9. van Griensven F, Supawitkul S, Kilmarx PH, Limpakarnjanarat K, Young NL, Manopaiboon C, et al. Rapid assessment of sexual behavior, drug use, human immunodeficiency virus, and sexually transmitted diseases in northern Thai youth using audio-computer-assisted self-interviewing and noninvasive specimen collection. *Pediatrics* 2001; 108: E13.
10. Workowski KA, Berman SM. Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2006. *MMWR Recomm Rep* 2006; 55: 1-94.
11. Stamm WE. Genital chlamydial infections. In: Klausner JD, Hook EW 3rd, editors. Current diagnosis & treatment of sexually transmitted diseases. 3rd ed. New York: McGraw-Hill; 2007: 75-83.
12. Aziz N. STD in pregnancy. In: Klausner JD, Hook EW 3rd, editors. Current diagnosis & treatment of sexually transmitted diseases. 3rd ed. New York: McGraw-Hill; 2007: 146-59.
13. Arrington-Sanders R. STD in adolescents. In: Klausner JD, Hook EW 3rd, editors. Current diagnosis & treatment of sexually transmitted diseases. 3rd ed. New York: McGraw-Hill; 2007: 160-6.
14. Samkange-Zeeb FN, Spallek L, Zeeb H. Awareness and knowledge of sexually transmitted diseases (STDs) among school-going adolescents in Europe: a systematic review of published literature. *BMC Public Health* 2011; 11: 727.
15. Trussell J. Contraceptive failure in the United States. *Contraception* 2011; 83: 397-404.
16. Emans SJ, Grace E, Woods ER, Smith DE, Klein K, Merola J. Adolescents' compliance with the use of oral contraceptives. *JAMA* 1987; 257: 3377-81.
17. Grimes DA. Compliance with oral contraceptive pills. In: Grimes DA, editor. The contraception report. New Jersey: Emron; 1994; 5: 3.
18. Committee on Adolescent Health Care Long-Acting Reversible Contraception Working Group, The American College of Obstetricians and Gynecologists. Committee opinion no. 539: adolescents and long-acting reversible contraception: implants and intrauterine devices. *Obstet Gynecol* 2012; 120: 983-8.
19. Committee on Adolescence. Contraception for adolescents. *Pediatrics* 2014; 134: e1244-e1256.
20. Tyden T, Norden L, Ruusuvaara L. Swedish adolescents' knowledge of sexually transmitted diseases and their attitudes to the condom. *Midwifery* 1991; 7: 25-30.
21. Gottvall M, Larsson M, Hoglund AT, Tyden T. High HPV vaccine acceptance despite low awareness among Swedish upper secondary school students.

- Eur J Contracept Reprod Health Care 2009; 14: 399-405.
22. Hoglund AT, Tyden T, Hannerfors AK, Larsson M. Knowledge of human papillomavirus and attitudes to vaccination among Swedish high school students. *Int J STD AIDS* 2009; 20: 102-7.
 23. Dermen KH, Cooper ML, Agocha VB. Sex-related alcohol expectancies as moderators of the relationship between alcohol use and risky sex in adolescents. *J Stud Alcohol* 1998; 59: 71-7.
 24. Huneeus A, Pumarino MG, Schilling A, Robledo P, Bofil M. Rates of Chlamydia trachomatis and Neisseria gonorrhoeae in Chilean adolescents. *Rev Med Chil* 2009; 137: 1569-74.
 25. Skjeldestad FE, Marsico MA, Sings HL, Nordbo SA, Storvold G. Incidence and risk factors for genital Chlamydia trachomatis infection: a 4-year prospective cohort study. *Sex Transm Dis* 2009; 36: 273-9.
 26. Baker M, Ortega-Benito J, Garret N, Bromhead C, Leslie K, MacDonald J, et al. Prevalence and risk factors for Chlamydia trachomatis infection in female New Zealand university students. *N Z Med J* 2005; 118: U1607.
 27. Imai H, Shinohara H, Nakao H, Tsukino H, Hamasuna R, Katoh T. Prevalence and risk factors of asymptomatic chlamydial infection among students in Japan. *Int J STD AIDS* 2004; 15: 408-14.
 28. Debattista J, Martin P, Jamieson J, Crane K, Dolton I, Russell-Hall S, et al. Detection of Chlamydia trachomatis in an Australian high school student population. *Sex Transm Infect* 2002; 78: 194-7.
 29. Lee SJ, Cho YH, Ha US, Kim SW, Yoon MS, Bae K. Sexual behavior survey and screening for chlamydia and gonorrhea in university students in South Korea. *Int J Urol* 2005; 12: 187-93.
 30. Tabora N, Zelaya A, Bakkers J, Melchers WJ, Ferrera A. Chlamydia trachomatis and genital human papillomavirus infections in female university students in Honduras. *Am J Trop Med Hyg* 2005; 73: 50-3.
 31. O'Connell E, Brennan W, Cormican M, Glacken M, O'Donovan D, Vellinga A, et al. Chlamydia trachomatis infection and sexual behaviour among female students attending higher education in the Republic of Ireland. *BMC Public Health* 2009; 9: 397.
 32. Govender L, Hoosen AA, Moodley J, Moodley P, Sturm AW. Bacterial vaginosis and associated infections in pregnancy. *Int J Gynaecol Obstet* 1996; 55: 23-8.
 33. Thomas T, Choudhri S, Kariuki C, Moses S. Identifying cervical infection among pregnant women in Nairobi, Kenya: limitations of risk assessment and symptom-based approaches. *Genitourin Med* 1996; 72: 334-8.
 34. Schneider H, Coetzee DJ, Fehler HG, Bellingan A, Dangor Y, Radebe F, et al. Screening for sexually transmitted diseases in rural South African women. *Sex Transm Infect* 1998; 74 (Suppl 1): S147-52.
 35. Morris MC, Rogers PA, Kinghorn GR. Is bacterial vaginosis a sexually transmitted infection? *Sex Transm Infect* 2001; 77: 63-8.
 36. Holzman C, Leventhal JM, Qiu H, Jones NM, Wang J. Factors linked to bacterial vaginosis in nonpregnant women. *Am J Public Health* 2001; 91: 1664-70.

ความชุกของโรคติดเชื้อทางเพศสัมพันธ์ในสตรีตั้งครรภ์ในโรงพยาบาลราชวิถี ประเทศไทย

สุวรรณมา อัสวพิริยานนท์, อุดม เขาวรินทร์, สุรศักดิ์ เก้าเอี้ยน, อุไรวรรณ โชติเกียรติ, เอกชัย โควาวิสารัช

ภูมิหลัง: พฤติกรรมและสังคมเปลี่ยนแปลงในยุคสมัยใหม่ทำให้วัยรุ่นมีเพศสัมพันธ์เร็วขึ้นและเกิดการตั้งครรภ์ในวัยรุ่น เนื่องจากไม่มีการตรวจคัดกรอง การติดเชื้อหนองในแท้และคลามัยเดียในวัยรุ่นในคลินิกฝากครรภ์ในประเทศไทย การศึกษานี้เพื่อที่จะหาขนาดความสำคัญของการติดเชื้อโรคติดเชื้อทางเพศสัมพันธ์โดยเฉพาะอย่างยิ่งการติดเชื้อคลามัยเดียในวัยรุ่นตั้งครรภ์

วัตถุประสงค์: เพื่อหาความชุกและปัจจัยที่สัมพันธ์กับโรคติดเชื้อทางเพศสัมพันธ์โดยเฉพาะอย่างยิ่งการติดเชื้อคลามัยเดียในสตรีตั้งครรภ์วัยรุ่น

วัสดุและวิธีการ: สตรีตั้งครรภ์วัยรุ่น 121 คน ที่มาฝากครรภ์ที่โรงพยาบาลราชวิถีระหว่างเดือนตุลาคม พ.ศ. 2549 ถึงเดือนพฤษภาคม พ.ศ. 2550 ได้รับการคัดเลือกจะได้รับข้อมูลเกี่ยวกับโครงการ ลงชื่อในแบบอนุญาตให้ทำการวิจัย ตอนแบบสอบถามเกี่ยวกับข้อมูลพื้นฐาน ข้อมูลทางเพศ และปัจจัยเสี่ยงเกี่ยวกับสภาวะเพื่อส่งตรวจหาหนองในแท้และคลามัยเดียโดยวิธี PCR (AMPLICOR by Roche) เสร็จแล้วจะได้รับการตรวจภายในโดยสูตินรีแพทย์ที่คลินิกตรวจโรคทางเพศสัมพันธ์ ข้อมูลทั้งหมดและผลทางห้องปฏิบัติการถูกเก็บรวบรวม ลงผลและวิเคราะห์ด้วยโปรแกรม SPSS สถิติ จำนวน ร้อยละ ค่าเฉลี่ยและส่วนเบี่ยงเบนมาตรฐาน Chi-squared test, Fisher's exact test และ odds ratio ใช้ในการศึกษานี้แนวโน้มปัจจัยเสี่ยงได้รับการวิเคราะห์ด้วยวิธี binary logistic regression

ผลการศึกษา: พบความชุกของโรคติดเชื้อทางเพศสัมพันธ์ร้อยละ 28.1 (คลามัยเดียร้อยละ 19.8 หนองในแท้อ้อยละ 1.7 ตับอักเสบบีร้อยละ 3.3 พยาธิในช่องคลอดร้อยละ 1.7 เริมร้อยละ 0.8 และหูดหงอนไก่ร้อยละ 0.8) ไม่พบซิฟิลิส แผลริมอ่อน และเอชไอวี ในการศึกษาพบโรคติดเชื้อที่ไม่ใช่โรคติดเชื้อทางเพศสัมพันธ์ เช่น เชื้อรา และ bacterial vaginosis (เชื้อราร้อยละ 19.0 และ bacterial vaginosis ร้อยละ 24.8 ตามลำดับ) ปัจจัยเสี่ยงสำหรับการติดเชื้อคลามัยเดียมีความสัมพันธ์อย่างมีนัยสำคัญกับการมีเพศสัมพันธ์กับผู้อื่นก่อนคู่นอนปัจจุบัน 6.9 เท่า (95% ความเชื่อมั่น 1.8-27.0)

สรุป: พบโรคติดเชื้อทางเพศสัมพันธ์โดยเฉพาะอย่างยิ่งคลามัยเดียในสตรีตั้งครรภ์วัยรุ่นในปริมาณที่มีความสำคัญ ควรมีมาตรการในการดูแลวัยรุ่นเกี่ยวกับโรคติดเชื้อทางเพศสัมพันธ์ระหว่างตั้งครรภ์เพื่อป้องกันผลแทรกซ้อนในอนาคต
