



Effectiveness of syndromic approach in patients suffering from reproductive tract infections visiting obstetrics and Gynaecology department of MMIMSR

Harmanjeet Kaur^{*1}, Divya Goel², Shafiq Aslam², Tajinder Kaur³

¹Ivy Hospital, Mohali, ²Department of Pharmacology, ³Gynaecology & Obstetrics MMIMSR, Mullana, India

Received: 17-10-2016 / Revised: 24-11-2016 / Accepted: 26-11-2016 / Published: 26-11-2016

ABSTRACT

Authors aimed to see the effectiveness of syndromic approach in patients suffering from RTIs. For that 100 patients were included in this prospective, observational and analytical study. Patients were subjected to thorough clinical examination by inspecting External genitalia, Perianal region, Color of vaginal discharge and type of discharge. All patients were classified and treated according to NACO guidelines of syndromic management. We found that white discharge was the commonest finding followed by lower abdominal pain and most common syndrome was vaginitis followed by lower abdominal pain syndrome. Over all with syndromic management 68% patients were cured and 32% were not cured. Syndromic management has been acknowledged as a rapid and cost effective approach in reducing the spread of RTIs/STIs. Syndromic algorithms have some shortcomings and they should be periodically revised and adapted to the epidemiological patterns of RTIs/STIs in a given setting.

Key words: - RTIs, STIs, NACO, Syndromic approach.

INTRODUCTION

Reproductive tract infections (RTIs) including sexually transmitted infections (STIs) are a huge burden of disease and adversely impact reproductive health of people.¹ Epidemiologic data show that the incidence and the prevalence of various RTIs vary greatly between countries and even between regions within a country, a reflection of the differences in the characteristics of each pathogen (such as duration of infectivity and transmissibility) as well as other biological, behavioral, medical, social and economic factors.² Women tend to suffer more because of synergistic effects of infections, malnutrition and reproduction.³ It is very important to treat infections at the earliest otherwise they may lead to devastating complications among the sufferers. Reproductive tract infections is the infection of the genital tract, i.e. perineum, vulva, vagina, cervix, uterus, adnexa and ovaries.⁴ The amount and type of bacteria present in the vagina have significant implications for a woman's overall health.⁵ Reproductive tract infections (RTIs) refer to three different types of infection which affect the reproductive tract.⁷ a) **Endogenous infections** b) **Iatrogenic infections** c) **Sexually transmitted infections (STIs)**. Reproductive tract infections

can affect the external genital region and the reproductive organs. In both women and men, there are several potential sites of infection. Infections in the area of the vulva, vagina, or cervix are referred to as **lower reproductive tract infections**. Infections in the uterus, fallopian tubes, and ovaries are considered **Upper reproductive tract infections** ⁶.

MATERIAL AND METHODS

This prospective, observational and analytical study was conducted by the Department of pharmacology in association with Department of Obstetrics and Gynecology at MMIMSR, Mullana. 100 patients were taken for this analysis. After fulfilling the criteria's total 100 women attending the OPD for the first time in the gynecology with following complaints were screened for RTIs (a) vaginal discharge; (b) cervical discharge; (c) Lower Abdominal Pain; (d) Burning Micturition; (e) Itching On Perineal Region. Per speculum examination was done to notice the presence of any discharge or inflammation. All patients were classified according to NACO guidelines of enhanced syndromic management. All patients having clinical signs were investigated as per NACO guidelines. Syndromic diagnosis was done on the basis of speculum examination and Color of

**Corresponding Author Address: Dr Harmanjeet Kaur, Medical Officer, Ivy Hospital, Mohali; E-mail: harmanjeet.kaur03@gmail.com*

discharge. The following syndromic diagnosis was found:-

SYNDROMES SIGNS

1. Vaginitis: - Vulvo-vaginal redness. Vaginal discharge seen on external or speculum examination
2. Cervicitis: - Mucopurulent cervical discharge, Cervical Bleeding to touch
3. Lower abdomen pain: - Lower abdominal tenderness on abdominal Examination. Cervical

motion tenderness on bimanual examination. Uterine or adnexal Tenderness on bimanual examination

4. Inguinal bubo: - Swelling, lumps or ulcers in the groin area

5. Genital ulcer: - Genital ulcers, sores or blisters

All the patients were treated with following charts (According to NACO)⁷ (Table 1 & Table 2)

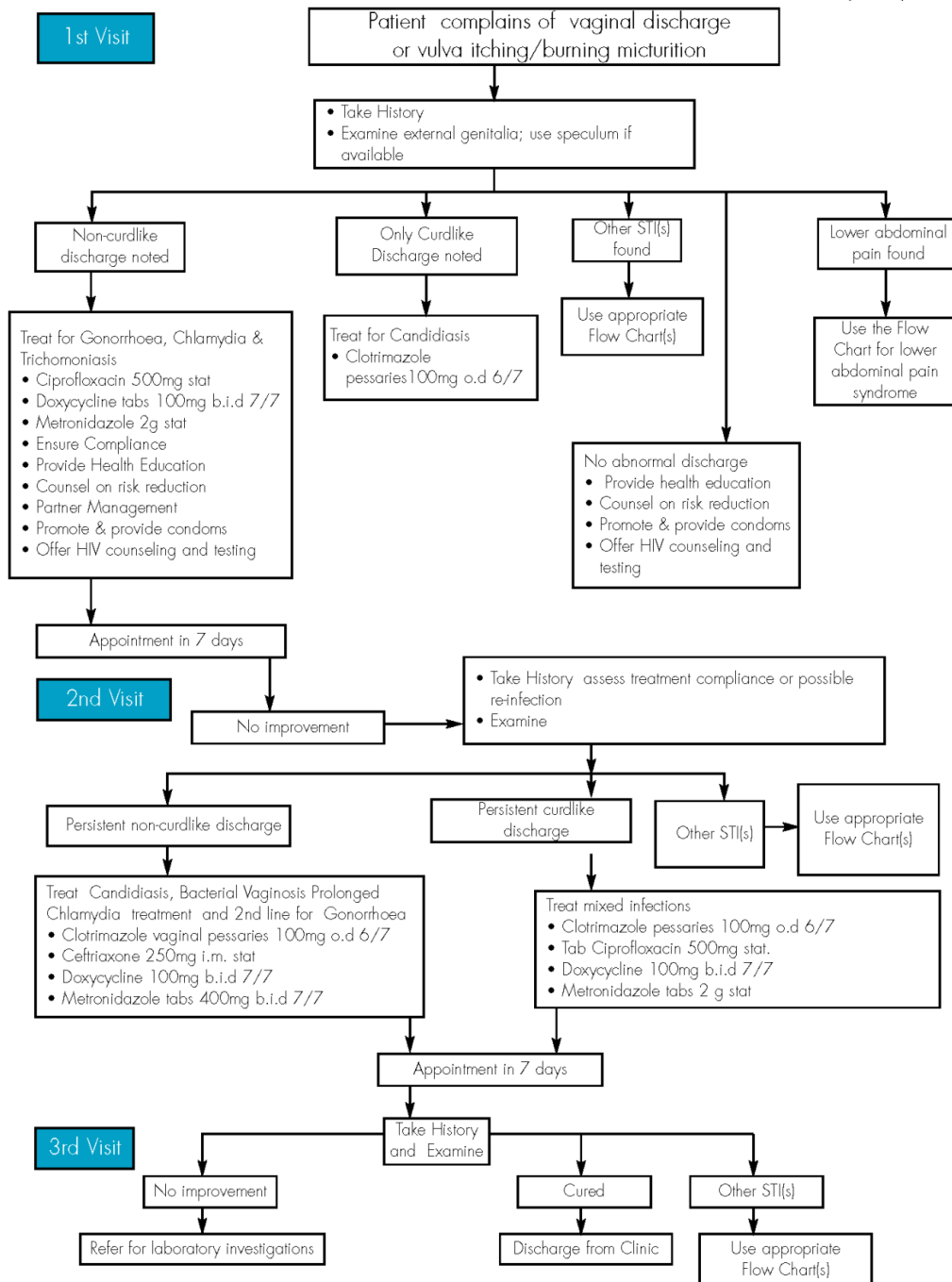


Table 1:- Syndromic management of VDS as per NACO guidelines

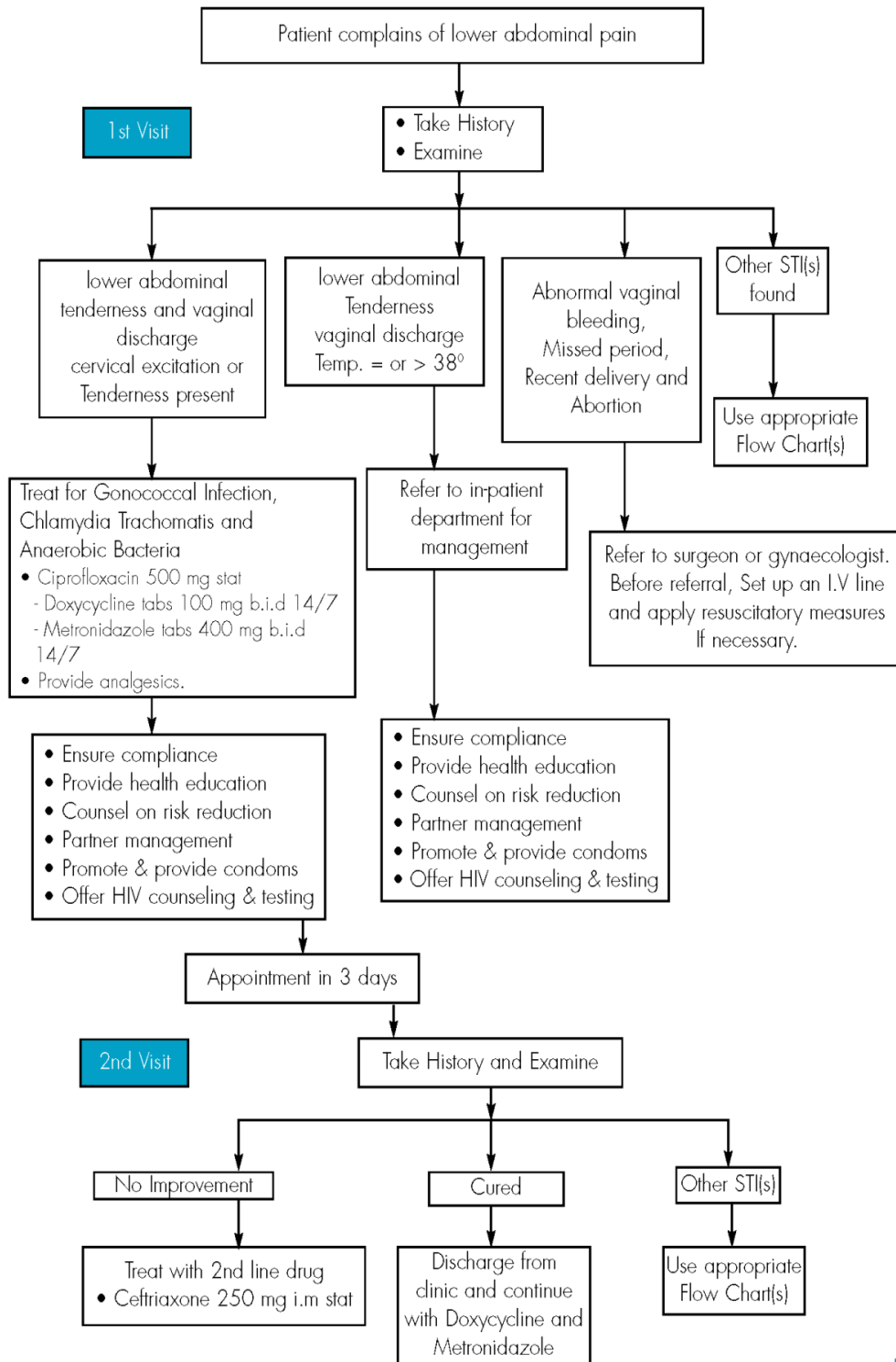


Table 2:- Syndromic management of LAP as per NACO guidelines
Partner who has sexual contact with patient also treated with Azithromycin (1gm), Fluconazole (150mg).

RESULTS

Out of 100 female's patients suffering from reproductive tract infection the highest proportions (52%) of subjects were in 26-35 years of age. (Table 3) Out of 100 cases most common presentation among females was white discharge (78%) followed by lower abdominal pain (62%), foul smell (29%), burning micturition (17%), itching in Perineal region (13%). (Table 4)

Out of 100 cases 28 patients (28%) have one symptom, 52(52%) patients have two symptoms and 20(20%) patients presented with more than two symptoms of RTIs. On speculum examination, white discharge (87%) was the commonest finding among all the findings observed among the patients. Cervical erosion was present in 75% cases. The most common syndrome was vaginitis (39%), followed by Lower abdominal pain (37%), cervicitis (24%). While none of patients was diagnosed with inguinal bubo and genital ulcer. (Table 5)

Out of 100 cases 63 patients were of vaginal discharge syndrome and they were treated with Ciprofloxacin 500 mg stat + Doxycycline 100 mg BD+ Metronidazole 2g stat at 1st visit and after seven days on 2nd visit out of 63 patients 55 cases were treated with Clotrimazol pessaries 100 mg +Doxycycline 100 mg BD +ceftriaxone 250 mg I.M stat + metronidazole 400 mg BD and in 8 patients treatment need to be changed and they were treated with Clotrimazole pessaries 100 mg + ciprofloxacin 500 mg stat +Doxycycline 100 mg BD+ Metronidazole 2g stat. Out of 100 patients 37 cases were of lower abdominal pain syndrome and they were treated with Ciprofloxacin 500 mg stat+ Doxycycline 100 mg bd+ Metronidazole 400 mg at 1st visit and after this they all came after seven days and out of 37 cases 34 patients continued with doxycycline and metronidazole and in 3 patients treatment was changed and they were treated with ceftriaxone 250 mg I.M stat.(Table 6)

Out of 100 patients 68% were cured and 32% were not cured. In 11% cases the treatment was changed while in 89% no change in treatment was required. (Table 7)

Partner who had sexual contact with patient were treated with Azithromycin (1gm), Fluconazole (150mg). So out of 100 cases 33.0% cases the partner was managed with AF kit while 67.0% cases the partner treatment was not required.

Table 3:- Age group distribution of the patients

| Age Group (in years) | No. (n=100) | % |
|----------------------|-------------|-------|
| 18 – 25 | 13 | 13.0% |
| 26 – 35 | 52 | 52.0% |
| 36 – 45 | 31 | 31.0% |
| > 45 | 4 | 4.0% |

Table 4:- Symptomatic distribution of reproductive tract infections

| Symptoms | No. (n=100) | % |
|----------------------------|-------------|-----|
| Lower Abdominal Pain | 62 | 62% |
| White Discharge | 78 | 78% |
| Burning Micturition | 17 | 17% |
| Foul smell | 29 | 29% |
| Itching On Perineal Region | 13 | 13% |

Table 5:- Distribution of syndromic diagnosis as per NACO guidelines

| Syndromic Diagnosis | No. (n=100) | % | |
|-----------------------------------|-------------|-----|-----|
| Vaginal discharge syndrome | Vaginitis | 39 | 39% |
| | Cervicitis | 24 | 24% |
| Lower Abdomen Pain Syndrome (PID) | 37 | 37% | |
| Inguinal bubo | 0 | 0% | |
| Genital ulcer | 0 | 0% | |

Table 6:-Frequency distribution of various drug treatments used in the patients

| Treatment | No. | % |
|---|-----|-----|
| Ciprofloxacin+ Doxycycline+ Metronidazole 2g stat | 63 | 63% |
| Clotrimazole +Doxycycline +ceftriaxone+metronidazole | 55 | 55% |
| Clotrimazole + ciprofloxacin +Doxycycline+Metronidazole | 8 | 8% |
| Ciprofloxacin+ Doxycycline+ Metronidazole 400 mg | 37 | 37% |
| Ceftriaxone | 3 | 3% |
| Doxycycline + Metronidazole | 34 | 34% |

Table 7:-Distribution of treatment course and outcome

| Outcome | Cured | 68 | 68.0% |
|---------------------|-----------|----|-------|
| | Not cured | 32 | 32.0% |
| Change of treatment | NO | 89 | 89.0% |
| | YES | 11 | 11.0% |

DISCUSSION

As sexual activities are more prevalent in the younger age group so, high positivity was observed among the age group 26-35 years. *Ray Krishna et al (2009)*⁹ in Delhi and reported predominant age group for RTI's were 14-24 years (52.9%) followed by 26-35 years (36.9%), 36-45 years (7.8%), 46-55 years (1.9%) and 56-70 years (0.5%). *Mulla summaiya et al (2014)*¹⁰ reported that in Gujarat Out of 150 females patients of RTIs 82 (54.7%) were more than 25 years of age whereas 68(45.3%) were less than 25 years. *Bhavsar C et al (2014) and Desai B et al (2015)*¹¹ also observed the similar findings. This age group is more fertile, RTI:s in this group can lead to infertility. *Philip PS (2015)*¹² defended that prevalence of symptoms suggestive of RTIs/STIs among married women of reproductive age in the study population was found to be 17.3% which is low as compared with the prevalence reported in other studies.

In present study most common presentation among females was white discharge (78%) followed by lower abdominal pain (62%), foul smell (29%), burning micturition (17%), itching on Perineal region (13%). Out of 100 cases 28 patients (28%) have one symptom, 52(52%) patients have two symptoms and 20(20%) patients have more than symptoms of RTIs *Desai B et al (2013)*¹³ reported that most common complaint was vaginal discharge (97%) followed by lower abdominal pain (2.7%). *Parmar T mehul(2013)*¹⁴ most common presenting symptom was vaginal discharge (36.4%) followed by burning micturition(24.7%), vulvar itching (17.3%), lower abdominal pain(13.0%) and least common was genital ulcer(8.6%). The present study found that on the basis of signs and symptoms and with speculum examination the most common syndrome was vaginitis (39%), followed by Lower abdominal pain (37%), cervicitis (24%). While none of patients were diagnosed of inguinal bubo and genital ulcer.

*Thakur JS et al (2002)*¹⁵ reported vaginitis (17.6), lower abdominal pain (9.5%), vaginal discharge and lower abdominal pain (9.4%), inguinal bubo (0%). *K ray et al (2006)*⁹ in Delhi reported vaginitis (66.7%), cervicitis (52.4%), lower abdominal pain (13.5%), and GUD herpetic (0.9%). *Singh MM et*

*al (2001)*¹⁶ in Chandigarh reported vaginitis in 52.1% cervicitis in 20.8% and PID in 16.8%. The present study found that with syndromic management 68% patients were cured and 32% were not cured. *Singh MM et al (2001)*¹⁶ reported that treatment was effective in 72.7% and was ineffective in 13.6% patients.

*Shrivastava RS et al (2014)*¹⁷ reported that syndromic management has been acknowledged as a rapid and cost effective approach in reducing the spread of STIs. *B Vuylsteke (2015)*¹⁸ reported that the syndromic approach has been major step forward in rationalizing and improving management of STI. **But in our study 32% patients were not cured, many studies done in the past i.e Romoren M et al (2014)¹⁹ reported that vaginal discharge syndrome algorithm for the management of vaginal and cervical infections is far ideal, *Wijert JVD et al (2006)*²⁰ commented in their study syndromic management could result in over-treatment of symptomatic women and under-treatment of asymptomatic women and *Vishwanath et al (2000)*²¹ reported that the syndromic management of vaginal discharge is not an efficient approach for identifying women with cervical infections.**

CONCLUSION

In conclusion the syndromic approach has been a major step forward in rationalizing and improving management of RTI/STI and its impact on the RTI/STI epidemic has been observed in various settings. It is a comprehensive approach to case management as it offers complete RTI/STI care at the patients 1st visit ensuring compliance to treatment as well as providing opportunity for prevention through health education. However syndromic algorithms have some shortcomings and they should be periodically revised and adapted to the epidemiologically patterns of RTI/STI in a given setting. Simple and rapid point tests might help the screening of asymptomatic and low symptomatic women and the diagnosis of RTI/STI in symptomatic women. Concurrent with syndromic case management periodic evaluations of etiological diagnosis should be available to ensure adequacy of the treatment algorithms and prescribed medication.

REFERENCES

1. WHO (2001) global prevalence and incidence of selected curable sexually transmitted infections. Overview and estimates. available: <http://www.who.int/hiv/pub/sit/who-hiv-aids.2001.02.pdf>. (Last accessed on june16,2016)
2. Rowley J, Berkley S. Sexually transmitted disease. In: Murray CJL, Lopez AD, editors. Health dimensions of sex and reproduction. Boston: Harvard University press 1998: 19-110.
3. Ranjan R, Sharma AK, Mehta G. evaluation of WHO diagnostic algorithm for reproductive tract infections among married women. *Indi J community Med* 2003; 28(2):81-4.
4. Salhan S. Textbook of Gynaecology. 1st Edition. Jaypee brothers: 2011:240.

5. Vasquez A, Jakobsson T, Ahrne S, Forsum, U, Molin, G. (2002). Vaginal lactobacillus flora of healthy Swedish women. *J of clinic microbiology* 40(8):2746-2749.
6. Reproductive tract infections: An introductory overview. From population council. Retrived January 2013. www.popcouncil.org/uploads/pdfs/RTIFacesheets Rev.pdf. (last accessed on may12, 2016)
7. National AIDS control program and reproductive and child health section, ministry of health and social welfare, united republic of Tanzania. National guidelines for management of sexually transmitted and reproductive tract infections 2007.
8. Modified Morisky Scale(MMS), updated 1/2015-URL- www.cchealthnetwork.com/media/.../modified%20morisky%20sclae.pdf last accessed on june12, 2016)
9. Ray k, Muralidhar S, Bala M, Kumara M, Salhan S, Gupta SM, et al. Comparative study of syndromic and etiological diagnosis of RTIs /STIs in women in Delhi. *Int J Infect Dis* 2009; 13:352-9.
10. Shethwala N, Mulla S. Study on Reproductive tract infection among the female patient attending the gynecology OPD in one of the teaching hospitals of Gujarat-India. *Int J Med Sci Public health* 2014; 3:123-125.
11. Bhavsar C, Patel RM, Marfatia Y.A study of 113 cases of genital ulcerative disease and urethral discharge syndrome with validation of syndromic management of sexually transmitted diseases. *Indian J Sex Transm Dis* 2014; 35; 35-9.
12. Philip PS, Benjamin AL, Sengupta P. prevalence of symptoms suggestive of reproductive tract infections/STIs in women in an area of Ludhiana. *Indian J Sex Transm Dis* 2013; 34:83-8.
13. Desai B, Kosambiya JK, Mulla S, Verma R, Patel B. Study of sexual behavior and prevalence of STIs/RTIs and HIV among females workers of textiles industries in surat city, Gujarat, India. *Indian J Sex Transm Dis* 2013; 34:14-8.
14. Parmar MT, Solanki HM, Gosalia VV. A study of prevalence of sexually transmitted infections and response to syndromic treatment among married women of reproductive age group in rural area of Parol Primary health Centre under thane district. *GJMEAPH* 2013;2(2):1-8.
15. Thakur JS, Swami HM, Bhatia SPS. Efficacy of syndromic approach in management of RTIs and associated difficulties in a rural area of Chandigarh. *Indian J of community medicine* 2002; 27:110-3.
16. Singh MM, Devi R, Garg S, Mehra M. effectiveness of syndromic approach in management of reproductive tract infections in women. *Indian J Med Sci* 2001; 55:209-14.
17. Shrivastava SR, Shrivastava PS, Ramasamy J. Utility of syndromic approach in management of sexually transmitted infections: public health perspective. *J coastal life Medi* 2014; 2(1): 7-13.
18. Vuylsteke B. current status of syndromic management of sexually transmitted infections in developing countries. *Sex Transm Infect* 2004; 80:333-4.
19. Romoren M, Sundby J, Velauthapillai M, Rahman M, Klouman E, Hjortdhal P. chlamydia and gonorrhea in pregnant Batswana women: time to discard the syndromic approach. *BMC infectious diseases*.DOI 10.1186/1471-2334-7-27.
20. Wijgert JVD, Altini L, Jones H, Kock AD, Young T, Williamson AL et al. two methods of self-sampling compared to clinician sampling to detect reproductive tract infection in Gugulethu, SA. *Sexually trasm diseases*2006; 33(8):516-523.
21. Vishwanath S, Talwar V, Prasad R, Coyaji K, Elias CJ, Zoysa ID. Syndromic management of vaginal discharge among women in a reproductive health clinic in India. *Sex Transm Inf* 2000; 76:303-306.