



## Management of sexually transmitted infections (STI)-associated syndrome by part-time general practitioners (GP) in Puttalam district, Sri Lanka

Wijayasinghe WAHP<sup>1</sup>, Ariyaratne KAM<sup>2</sup>, Harshani SRAP<sup>3</sup>

<sup>1</sup> MBBS, National STD/AIDS Control Programme, No 29, De Saram Place, Colombo, Sri Lanka

<sup>2</sup> Consultant Venereologist, National STD/AIDS Control Programme, No 29, De Saram Place, Colombo, Sri Lanka

<sup>3</sup> MBBS, MSc in community medicine, Additional MOH, MOH office, Puttalam, Sri Lanka

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### Abstract

**Introduction:** Puttalam district shows higher rate of HIV. Considering the interaction between HIV and STI, management of STI-associated syndromes by GPs was studied in Puttalam district.

**Objective:** To describe the management of STI-associated syndromes by GPs in Puttalam district.

**Method:** A descriptive cross-sectional study was done in Puttalam district from 1<sup>st</sup> February to 30<sup>th</sup> April 2016 among 114 randomly selected part-time GPs using a self-administered questionnaire. Management of five STI syndromes were compared with national guidelines.

**Results:** Vaginal discharge and lower abdominal pain syndromes were encountered by majority (97%) of GPs. However, vaginal discharge was considered as the syndrome with the highest possibility of an STI by majority (93%) of GPs. Urine full report (94.9%) and VDRL (77.5%) were the commonest investigations ordered by GPs. 4.3% of patients with urethral discharge, 4.3% of patients with vaginal discharge, 15 % of patients with genital ulcers, 10.5% of patients with scrotal swelling and 1.7% of patients with genital warts were managed according to the national guidelines. Notably none of the patients with lower abdominal pain syndromes were managed according to the guideline.

Management of partners of patients with STI syndromes were done by 50.9% of GPs. Majority of GPs (87%) educated patients on STI prevention. Most of the referrals were to the local STI clinic (74.6%) and most of these referrals were patients with genital warts (89.5%).

**Conclusions:** Large number of GPs are managing patients with STI syndromes. However, standard management of STI syndromes are done by only small number of GPs. Therefore, more educational and training programs on STI management for GPs are recommended.

**Keywords:** STIs-Sexually transmitted infections, GPs- general practitioners

### Introduction

Sexually Transmitted Diseases (STD) that are reported to the National STD/AIDS Control Programme are on the rise. According to the annual report of the National STD/AIDS Control Program (NSACP), there have been 19,530 and 22,059 new patients registered in STI clinics in Sri Lanka in 2013 and 2014 respectively.

Most common STDs in 2014 in Sri Lanka were Genital herpes, Non Gonococcal Urethritis, Genital Warts, Syphilis, Gonorrhoea and Trichomoniasis in descending order of prevalence.

STIs are mostly transmitted via unprotected sexual intercourse but there can be other ways of transmission as well. e.g.: via contaminated needles/ sharp instruments, blood and blood products and mother to child. Unprotected receptive anal sex is the most risky sexual practice but the disease can be transmitted in vaginal or oral sex as well. There are several factors that contribute to transmission of STIs. Among them social factors like lack of knowledge and lack of access to affordable protective mechanisms, cultural and religious reasons, inability to negotiate with the partner for safe sex: biological factors like younger age, female gender, behavioural factors like multiple partners, regular changing of partners, injectable drug use are common contributors.

Having one STI makes a person vulnerable to acquire more STIs because the genitalia becomes inflamed and opens up a pathway for infections. Women are at a higher risk than men as their area of genital exposure is larger than men and they usually start sexual life earlier than men.

Main symptoms in STDs are genital, peri-anal or oral blisters and/or ulcers, discharge from urethra and/or vagina, warts in genitalia or peri-anal region, pain and swelling of testis and lower abdominal pain. But it has been found that most of the patients with STIs are asymptomatic. (70% of women and 50% of men with Chlamydia and 80% of women and 10% of men with gonorrhoea are asymptomatic)<sup>[5]</sup>

Most of these STDs are curable, provided the patients are treated with the appropriate antibiotic or antiviral with the correct dose for recommended duration. If not, they may be partially treated and may transmit the disease to their sexual contacts and may become resistant for commonly used antibiotics as well.

It is very important to treat the partners in STIs because if the partner is not treated, the patient will acquire the infection again from the partner in a short time. And it is very important to educate them regarding the protective mechanisms and provide them the necessary psychological and social support. It is also important to follow up them

regularly and screen them for other STIs as well. Safe sexual practices are the best methods for prevention. Delaying sexual debut, monogamous partnership, correct and consistent use of condoms and changing from high risk penetrative sex to low risk non-penetrative sex are among them.

In Sri Lanka, NSACP is the place where prevention and treatment programs for STIs are being implemented and monitored. There is one central STD clinic in Colombo as well as there are 30 peripheral STD clinics and 23 branch clinics scattered in Sri Lanka to control and treat STIs.

According to the publication of World Health Organization in 2007, management of Sexually Transmitted Diseases should not be exclusively done at STI clinics [6]. They can be managed by first contact medical officers according to the guidelines for syndromic approach for STI management. NSACP has published guidelines for syndromic approach for STD case management in 2001 [7]. It includes treatment for current episode, health education on STIs, counseling on safe sexual practices, partner notification and treatment, condom promotion and follow up or referral to an STI clinic.

**Justification**

Puttalam district is situated in North Western province in Sri Lanka. STD clinic, Chilaw is the main clinic that manages patients with STDs in the Puttalam district.

There have been 664 new patients registered in the STD clinics in 2013, of which 363 patients were diagnosed of having one or more STDs and 779 new patients were registered in 2014, of which 406 patients were diagnosed of having one or more STDs [8, 9].

Total newly registered patients moved up from 11<sup>th</sup> position in 2013 to 6<sup>th</sup> position in 2014 in the country in comparison with other districts [8].

The most prevalent presentations to the STD clinic, Puttalam in 2014 were Non Gonococcal Urethritis, Vaginal Candidiasis, Bacterial Vaginosis, Genital Herpes and Syphilis [9].

It also showed a significant number of HIV patients in Puttalam district in 2014 with 2.3/100,000 population which became the 3<sup>rd</sup> highest prevalence within a district in the country [9].

Considering these facts and that inadequate management of STDs can lead to increase in transmission of HIV. Therefore, it was decided to carry out a study on syndromic management of STDs by part time general practitioners in puttalam district.

**Objectives**

To study the management of STI-associated syndromes by part time general practitioners (GPs) in the district of Puttalam.

**Methods**

Descriptive cross sectional study was carried out among part-time GPs practising in the district of Puttalam which is located in the North-Western part of the country. It has 48 government western medicine institutes, including: one District General Hospital (DGH), two Base Hospitals (BH), 12 District Hospitals (DH), 33 Preliminary Care Health Units (PCMU) and 16 Medical Officer of Health areas (MOH). There were 386 Doctors working in these health care institutes when the study was carried out.

Doctors who were working in the government hospitals and practising as part-time GPs were considered as the population and there were 203 GPs in the sampling frame. Doctors who were on leave during the study period, specialists in medical profession, and doctors practicing other than western medicine were excluded from the population.

Simple random sampling (SRS) technique was used to select study units from the sampling frame of 203 GPs. Sample size was calculated using 95% confidence level, assumed proportion as 50% (0.5) and acceptable error as 10% (0.1). Calculated sample size was 96 and a 25% of non-response rate was then added and required sample size came as 120.

Structured self-administered questionnaire was used as the data collection tool. Questionnaire was pre-tested among a group of part-time GPs outside Puttalam district and necessary adjustments were made to the final questionnaire. Data collection was completed during 1<sup>st</sup> February 2016 to 30<sup>th</sup> April 2016 by the principal investigator.

Ethical clearance was obtained by Ethics Review Committee, Faculty of Medicine, University of Kelaniya (letter number: FWA 00013225)

Data analysis was done using SPSS version 13 and results were compared with the syndromic management guidelines published by NSACP in 2001.

GPs practices on five different STI-associated syndromes (namely urethral discharge, vaginal discharge, genital ulcers, scrotal swelling, pain and tenderness in lower abdomen and genital warts) were observed.

**Results**

The study data collection was carried out among 114 randomly selected sample of GPs (response rate 95%)

**Background characteristics**

Distribution of basic characteristics of the sample is mentioned in the table 1.

**Table 1:** Sample characteristics of GPs

Characteristic	Number	Percent	
Gender	Male	78	68%
	female	36	32%
	Total	114	100%
Place of work	GH	24	21%
	BH	45	40%
	DH	27	24%
	PCMU	8	7%
	MOH	10	9%
	Total	114	100%
	Experience as a GP	<1year	17
1-2years		29	25%
2-5years		16	14%
>5years		52	46%
Total		114	100%

DGH-General Hospital, BH-Base Hospitals, DH-District Hospitals, PCMU-Preliminary Medical Care Units, MOH-Medical Officer of Health.

**Experience of STI-associated syndromes**

*Percentages and numbers are not mutually exclusive*

Majority of the GPs have seen patients with STI syndromes. Vaginal discharge is the mostly seen STI syndrome and genital growth is the least seen STI syndrome. Majority suspects an STI as a possible cause of the symptom.

Considering of a possibility of an STI is highest with the symptom vaginal discharge [n=107(93.8%)] and lowest with scrotal swelling [n=53(46.5%)].

Most important thing is that some GPs are not considering STIs as a cause.

**Table 2:** Percentage of GPs who have seen an STI-associated syndrome and who thought an STI as a cause of the syndrome (n=114)

STI-associated syndromes	Percent of GPs seen STI-associated syndromes (n=114)	Percent of GPs suspected an STI as a cause (n=GPs who have seen the symptom)
Vaginal discharge	97%	94%
Lower abdominal pain	97%	93%
Scrotal swelling	90%	89%
Genital ulcers	78%	87%
Urethral discharge	76%	56%
Genital growths	60%	46%

Percentages are not mutually exclusive

### Investigations

102 GPs performed investigations on patients with STI syndromes. Common investigations ordered by GPs for STI-associated syndromes in the private practice are tabulated in table 3. UFR was the mostly ordered investigation by GPs.

**Table 3:** Investigations performed on patients with given STI symptoms by GPs

Name of the investigation	No of GPs	Percent of GPs
UFR	93	95%
VDRL	76	78%
Genital swabs	29	30%
FBC	9	9%
ESR	3	3%
Pap smear	1	1%
HIV antibodies	1	1%
Hep B s Ag	1	1%

### Antibiotic use

Most of the GPs would use antibiotics for management of

STI syndromes. Commonly used antibiotics by GPs for STI-associated syndromes as tabulated in table 4. They used antibiotics mostly on vaginal discharge and least on genital growths.

**Table 4:** Percentage of GPs who use antibiotics for different STI-syndromes

STI-associated syndromes	Number of GPs who use antibiotics	Percent of GPs who use antibiotics(n=114)
Vaginal discharge	110	96.5%
Lower abdominal pain	82	83.3%
Scrotal swelling	74	76.3%
Genital ulcers	71	65.8%
Urethral discharge	92	81.6%
Genital growths	14	17.5%

Percentages and numbers are not mutually exclusive

Common antibiotics used by GPs for different STI-syndromes are tabulated in the table 5 with dose and frequency. It is interesting to notice that some of them have used antibiotics for genital growths whereas 3 GPs (2.6%) have used tri-chloro acetic acid for treatment.

**Table 5:** Use of antibiotics by the STI-syndrome

Symptom	Mostly used antibiotic	Percent. Of GPs
Vaginal discharge (n=110)	Metronidazole 400mg tds, PO	36%
Urethral discharge (n=92)	Ciprofloxacin 500mg bd, PO	46%
Lower abdominal pain (n=82)	Ciprofloxacin 500mg bd, PO	48%
Scrotal swelling (n=74)	Ciprofloxacin 500mg bd, PO	39%
Genital ulcers (n=71)	Acyclovir 400mg tds, PO	31%
Genital growths (n=14)	Acyclovir 400mg tds, PO	50%

Percentages and numbers are not mutually exclusive

### Partner management

Managing partners of STD patients was done by 50.9% (n=58) of GPs and 30 (52.8%) out of them are managing asymptomatic partners as well.

Performing investigations on partners was done by 52 GPs (45.6%) and the most commonly used investigation was UFR, as it was with the patients.

**Table 6:** investigations performed on partners

Name of investigation	No GPs	Percent of GPs
UFR	42	72
VDRL	42	72
Genital swab	16	27
HIV screening	03	05
Hep B serology	1	02

Percentages and numbers are not mutually exclusive

Using antibiotics on partners of patients was done by 33 (28.9%)

GPs and they were mostly similar to the antibiotics used with patients.

**Table 7:** Most common antibiotics used on partners

Symptom of the patient	Mostly used antibiotic	Percent. Of GPs out of whom managed partners
Vaginal ischarge (n=9)	Metronidazole 400mg tds, PO	26%
Urethral discharge (n=6)	Ciprofloxacin 500mg bd, PO	20%
Lower abdominal pain (n=9)	Ciprofloxacin 500mg bd, PO	36%
Scrotal swelling (n=5)	Ciprofloxacin 500mg bd, PO	22%
Genital ulcers (n=7)	Acyclovir 400mg tds, PO	33%
Genital growths (n=3)	Acyclovir 400mg tds, PO	75%

Percentages and numbers are not mutually exclusive

### Health education

Health education is a part of complete management of STI patients and it was done by 99 GPs (87%) whereas 73.7% out of them advised to stick to a single partner, 71.1% advised on correct and consistent use of condoms and 77.2% advised on importance in follow up.

### Referrals

Patients are referred to other health care professionals for further management in some instances. They mostly referred patients with genital growths (90%) and least referred patients with lower abdominal pain (54%).

**Table 8:** referring of patients with STI symptoms for further management

STI-associated syndromes	Number of GPs who referred patients	Percent of GPs who referred patients
Genital growths	n=102	90%
Genital ulcers	n=92	81%
Vaginal discharge	n=74	65%
Urethral discharge	n=72	63%
Scrotal swelling	n=68	60%
Lower abdominal pain	n=62	54%

**Table 10:** GPs practicing expected management

Management component	% of GPs practising expected treatment	
Use of correct treatment	Genital ulcers	16%
	Scrotal swelling	10.5%
	Urethral discharge	4.4%
	Vaginal discharge	4.4%
	Genital growths	2.6%
	Lower abdominal pain	0.0%
Health education to patients	87%	
Condom promotion	71%	
Partner management	51%	

Partner management was done by 51% of GPs, which is not satisfactory and it should be improved. Use of antibiotics on partners was not according to the national guidelines<sup>[7]</sup>. Health education to patients and condom promotion were satisfactory (87% and 71% respectively) but need to be further improved.

### Conclusions

Experience of GPs with patients having STI syndromes was more than 50% for all the given six syndromes. Their level of suspicion on the syndromes was more than 50% except for genital growths. They mostly used UFR as the investigation for patients with STI syndromes. Antibiotics were used for management of all the given STI syndromes and different antibiotics were preferred for different STI syndromes.

Partner management was also done by some GPs and some of them managed asymptomatic partners as well. They used investigations on partners and the most common

Percentages are not mutually exclusive

They mostly referred patients with STI syndromes to the local STD clinic for further follow up, and they also referred patients to other specialities as well.

**Table 9:** place of referral

Place of referral	Number of GPs who referred patients	Percent of GPs who referred patients
Local STD clinic	n=86	75%
Gynaecology clinic	n=83	73%
Dermatology clinic	n=55	48%
Consultant Venereologist	n=24	21%
Surgical clinic	n=24	21%

Percentages are not mutually exclusive

### Discussion

Most of the GPs participated in the research were having experience of more than 5 years as a GP and have seen patients with STD symptoms in GP practice. Their suspicion on symptoms for a possibility of an STD is higher, whereas use of proper antibiotic with recommended dose and duration for STD syndromes was lower<sup>7</sup>.

investigation was UFR. They used antibiotics on partners as well but the number was less than that of patients.

Health education and condom promotion was done at GP practice.

Some GPs referred patients with STI syndromes to other healthcare professionals, mostly to local STD clinic.

With reference to national guidelines, their use of antibiotics on patients with STI syndromes was poor.

Considering all above factors, more educational and training programs on STD management for GPs at primary health care are recommended.

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