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CONTENTS

Editorial

Pathogenesis, growth and survival characteristics of *Listeria monocytogenes* - a newly emerged food-borne pathogen

H. Nyati

The *Mae I* assay for scoring atrazine resistance is codon-usage dependent in legumes

F. Chidzondo, A. Dietrich and I. Sithole-Niang

A survey on contact tracing of sexually transmitted infections in Mazowe district (Zimbabwe)

P.P. Chibatamoto, L.S. Charimari and E.C. Chando

Natural control of fungi and mycotoxin in grains - a means of reducing human and animal contamination.

A. Tagne, J. Nguefack, R. Nangmo, C. The and P.H. Amvam Zollo

The potential of single-hitched donkeys (*Equus asinus*) in cultivation tasks in Zimbabwe

Z. Dube, L.R. Ndllovu and V. Muchenje

Screening of *Coffea arabica* varieties for resistance to *Colletotrichum kahawae* sp. nov., the causal fungus to Coffee Berry Disease (CBD)

E. Masenda

Book review

Mathematical Methods of the Theory of Elasticity



CONTENTS

Pathogenesis, growth and survival characteristics of <i>Listeria monocytogenes</i> - a newly emerged food-borne pathogen	H. Nyati 1
The <i>Mae I</i> assay for scoring atrazine resistance is codon-usage dependent in legumes	F. Chidzondo, A. Dietrich and I. Sithole-Niang 17
A survey on contact tracing of sexually transmitted infections in Mazowe district (Zimbabwe)	P.P. Chibatamoto, L.S. Charimari and E.C. Chando 25
Natural control of fungi and mycotoxin in grains - a means of reducing human and animal contamination	A. Tagne, J. Nguetack, R. Nangmo, C. The and P.H. Amvam Zollo 37
The potential of single-hitched donkeys (<i>Equus asinus</i>) in cultivation tasks in Zimbabwe	Z. Dube, L.R. Ndlovu and V. Muchenje ... 45
Screening of <i>Coffea arabica</i> varieties for resistance to <i>Colletotrichum kahawae</i> sp. nov., the causal fungus to Coffee Berry Disease (CBD)	E. Masenda 55
Book review: Mathematical Methods of the Theory of Elasticity by V. Z. Parton and P. I. Perlin	Dr A. Salahuddin — Reviewer 65

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A survey on contact tracing of sexually transmitted infections in Mazowe district (Zimbabwe)

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A total of 632 sexually transmitted infected index patients and 168 sexual partners (156 partner referral and 12 provider referral) were seen at ten health centres of Chiweshe Communal Area, Mashonaland Central Province between September 1998 and March 1999. All STI index patients who visited the study sites were observed, counselled and treated by the nurses. A questionnaire to determine the reproductive/sexual behaviour of patients and their partners was administered to the index patient. Of the 632 index patients observed, almost half (46 percent) presented with vaginal discharge syndrome, 26 percent with genital ulcer disease and 16 percent with urethral discharge syndrome. Out of a total of 168 partners referred to the health centres, 93 percent had been referred by index patients and only 7 percent by health workers. The majority (61 percent) of the index patients were female. On average, the index patients were 30.03 ± 9.97 years old. The majority of the clients (56 percent index patients and 70 percent contacts) were married (monogamous). About a third of all the clients had completed form four (Ordinary Level) and were highly knowledgeable of STIs - particularly genital ulcers and urethral discharge syndrome. Friends and relatives were reported to be the first source of information on STIs. About half the index patients reported that they never use condoms and yet they felt they were at high risk of contracting STIs because their partners were not faithful. This survey established that people's behaviour has not been significantly changed by the AIDS pandemic. There is urgent need to find out why condom use is low, even when people do feel to be at risk.

Keywords: Sexually transmitted infections, index patients, sexual contacts, contact tracing.

Introduction

The world over, sexually transmitted infections (STIs) are among the most causes of illness. The morbidity resulting from the twenty or more micro-organisms that

are transmitted by sexual activity continues to make severe demands on human and economic resources. The problem becomes even worse, considering that the conventional STIs, which have been joined by an incurable and ultimately fatal disease, acquired immunodeficiency syndrome (AIDS), caused by human immunodeficiency virus (HIV). It has been established that some STIs (ulcerative and nonulcerative) facilitate transmission of HIV (Cannon *et al.*, 1989; Latif, 1989; Kreiss, *et al.*, 1994; Moss, *et al.*, 1995 and Latif, 1997).

In Sub-Saharan Africa, STIs rank among the top five diseases and there is at least one new STI consultation per 100 persons per year in developed countries (WHO Technical Report Series, 1991). In 1984 alone, 133 676 patients were treated for STIs at Harare STI Clinics in Zimbabwe (Harare City Health, 1984). A further analysis of the same data showed a high prevalence of STDs in adult males (63.2 percent) followed by adult females (35.2 percent) and low prevalence in children under 15 years (0.8 percent). This is obviously significantly overloading the work of clinicians at STD clinics. In 1995, Mashonaland Central's provincial statistics showed that 17 percent of persons aged 14 years and above consulted at least once for an STD (Annual Report, Mashonaland Central Provincial Medical Directorate, 1995).

In a study to determine the pattern of STIs among men and women seeking STI care, Latif (1995) found that of the 497 men, 49 percent presented with urethral discharge, 36 percent with genital ulcers and 7 percent with both. The same study revealed that among 471 women who presented with vaginal discharge, 64 percent had vaginal discharge only, 15 percent had lower abdominal pain, 10 percent had genital ulcers as well.

In Zimbabwe, gonorrhoea is one of the most common STIs. In 1995, Latif isolated *Neisseria gonorrhoea* from 61 percent of the men with urethral discharge and from 10 percent of the women with vaginal discharge. With the development of a gonorrhoea strain resistant to penicillin (PPNG), the disease becomes more difficult to manage especially when the strain has been implicated in gonococcal ophthalmia neonatorum (Latif, *et al.*, 1983 and Latif, *et al.*, 1983). In a study carried out in Hippo Valley Estates, situated in the South Eastern lowveld of Zimbabwe, a total of 111 isolates were tested for susceptibility to penicillin and of these 43.2 percent were penicillinase producing *N. gonorrhoea* (PPNG) (Gomo, *et al.*, 1990). Other STIs such as chancroid, non-gonococcal urethritis, pelvic inflammatory disease (PID), genital herpes, candidiasis and trichomoniasis have also been found to be a problem in Zimbabwe. For instance, a prevalence of trichomoniasis in Zimbabwe was estimated at 26 percent (Mason, 1978). In yet another study, Mason *et al.*, (1983) isolated *Trichomonas vaginalis* in 31 percent of 199 pregnant women and 37 percent of STI patients attending a local clinic. Among 1 174 asymptomatic women, the following organisms were isolated; *N. gonorrhoea* (1.7 percent), *C. trachomatis* (4.3 percent), *T. vaginalis* (10.7 percent), *C. albicans* (49 percent), lactobacilli (53 percent) and syphilis (4.2 percent).

As with other communicable diseases, the control of STIs cannot be achieved by merely treating people presenting to health facilities with signs and symptoms. The control of STIs is achieved through primary prevention (education on the advantages of discriminate sex and prophylaxis) and secondary prevention (encouraging

people to seek care without delay once the symptoms are recognised) (Latif, 1998). For the success of an STI control programme, the strategy involves the identification, counselling and treatment of the sexual partners of persons with STIs.

In order to break the chain of transmission of STIs, partner notification (patient and/or provider referral) should be considered whenever a sexually transmitted infection is diagnosed, irrespective of where care is provided. The role of partner notification in the prevention of transmission of STIs and HIV cannot be overemphasized. The aim of tracing and notifying sexual partners is to control the disease within the community as well as to prevent uninfected individuals from getting infected. Partner notification is a public health activity by which partners of those identified as having an STI are traced, informed of their probable exposure to infection, and offered medical and counselling services. Partner notification programmes should be implemented as part of comprehensive STI prevention and control programmes.

Some authors remarked that for any contact tracing programme to be successful, the public should have a high level of knowledge of the dangers of STIs (Winfield and Latif, 1985). A low level of public health care education can lead to non-compliance by patients and their partners. For instance, Mills, *et al.*, (1978) found reluctance to reveal names of partners, unnamed streets and rapid movement of people to be some of the few problems faced in contact tracing. Winfield and Latif (1985) highlighted the same points - they found that their contacts had either given false addresses or had changed addresses.

The advent of AIDS forced both governmental and non governmental organisations (NGOs) to embark on massive AIDS awareness campaigns in which people were bombarded with information on HIV / AIDS and STIs. These awareness campaigns have made the public more knowledgeable of the dangers of STDs, including AIDS, as has been revealed by numerous knowledge, attitude and practice surveys on AIDS carried out in Zimbabwe (Sibanda, *et al.*, 1988; Wilson, *et al.*, 1989; Pitts, *et al.*, 1989 and Chibatamoto, *et al.*, 1992). It is assumed that the people's high level of knowledge on dangers of HIV / AIDS and STIs can change their sexual behaviour as they will stick to one partner and/or use condoms consistently. It is also assumed that, because of AIDS, those who get infected for some unknown reasons will ask their partners to seek treatment at health facilities. The introduction of partner notification decreases the transmission of STIs because without partner treatment, re-infection is almost inevitable.

In light of this, we undertook a study to provide information on rates of partner referral, most common type of STIs, sexual behaviour and demographic characteristics of STI clients at Primary Health Centres, after more than a decade of massive AIDS campaigns.

Materials and Methods

Study Area

The study was conducted in Chiweshe Communal area of Mazowe District of Mashonaland Central Province. The district, like most in Zimbabwe, utilizes the

Primary Health Care delivery system, which is a broad-based approach to health care. This system also recognises the interrelationships between many health problems and between these problems and the environment. Mazowe District has a total of 24 health centres, of which seven are government-owned, eight private, eight council and one mission-owned. All the ten health centres in the Chiweshe Communal Area were included in the study. The study sites (health centres) were carefully selected in order to capture the communal people of Mazowe district. Besides, the STI partner notification programme had not been introduced in this district.

Data Collection

Clients

All STI patients and their contacts that visited the ten health centres in the study area between September 1998 and March 1999 were recruited. An index patient in this study was defined as a patient who presented with a new STI to the health centre during the study period. A contact was defined as the index patient's sexual partner.

Research Assistants

All nurses and Environmental Health Technicians (EHTs) who work in the study area participated in the study. A workshop for the health care providers (nurses and EHTs) who participated in the study was conducted prior to the commencement of the study. The purpose of the workshop was to orient the health care providers on the objectives of the study and equip them with the skills needed in the partner notification programme. The following subjects were covered:

- basic counselling and educational skills
- natural history and the epidemiology of STIs in the study area
- psycho-social implications of STIs and HIV
- partner locating and notifying skills
- referral resources and
- record keeping.

Process of Partner notification

All STI index patients who visited the study sites were observed, counselled and treated by the nurses. A questionnaire to determine the reproductive/sexual behaviour of patients and their partners was administered to the index patient. The index patients were then given 'contact slips' bearing the sex of index; clinic card number, diagnosis code and date of issue which they were expected to give to their partners (contacts). The contacts were expected to visit any health centre (preferably in the study area) and present the 'contact slip' to the nurses within a period of seven days. The contact was counselled, treated and a questionnaire administered. All the partners who did not return the slips within a week from date of issue were confidentially traced by the EHTs and asked to visit the health centres.

The clients' names were deliberately not written on the slips and questionnaires to maintain anonymity. To allow the programme to track contacts, coded numbers were used instead. Furthermore, information about index patient including identity was not disclosed to traced partners and vice versa. Clients were not forced to participate in the study; neither was any remuneration given to the clients for participation.

Data processing and analysis

The data on the 800 questionnaires were coded and entered into an IBM Personal Computer for analysis using a statistical software programme called EpiInfo version 6.

Results

Syndromic diagnosis of STI

A total of 632 STI index and 168 STI partners (156 partner referral and 12 provider referral) were seen at ten health centres of Chiweshe communal area in Mashonaland Central Province between September 1998 and March 1999.

Of the 632 index patients observed, almost half (46 percent) presented with vaginal discharge syndrome, 26 percent with genital ulcer disease and 16 percent with urethral discharge syndrome as indicated in Figure 1. On the basis of the diagnosis of the index patient, 43 percent of the 168 STI contacts were diagnosed as vaginal discharge syndrome contacts, 23 percent as genital ulcer disease contacts and 26 percent as urethral discharge syndrome contacts. The rest presented with PID, bubo, orchitis, genital warts and double infections (genital ulcer and urethral discharge or genital ulcer and vaginal discharge).

Characteristics of STI clients

STI Index patients

Six hundred and thirty two STI patients were interviewed at the clinics during the study period. The majority were females (61 percent). A third of these patients were apostolic, 24 percent Protestants, 6 percent Catholics and 5 percent Pentecostal. The youngest was 14 years old and oldest 82 years old (mean = 30.03 ± 9.97), with male patients (mean = 30.8 ± 11.3) being slightly older than the female patients (mean = 29.57 ± 9.0 years). Of the 632 patients, 56 percent were in a monogamous marriage, 16 percent single, 10 percent in a polygamous marriage and 8 percent divorced. Twenty seven percent of the index patients had completed O-Level (form four), 20 percent ZJC (form two) and 30 percent had completed primary level (grade seven). About a fifth (19 percent) had not completed primary level of education. Thirty-seven percent were not employed and 28 percent derived their income from farming.

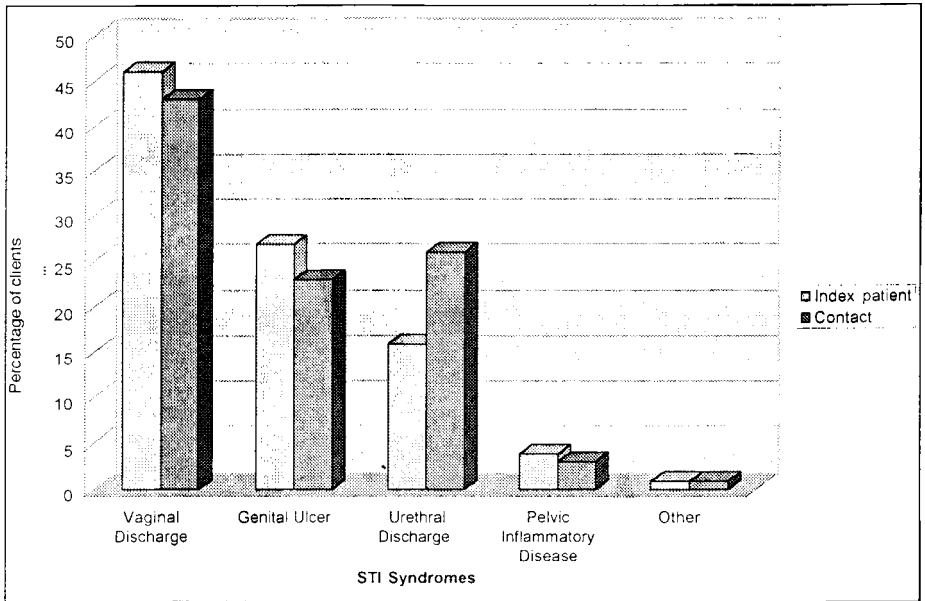


Figure 1: The STI Syndromes presented at the health centres.

STI contacts

A total of 168 partners who had been referred by their partners (93 percent) and by environmental health technicians (7 percent) were observed and interviewed at the clinics. More than half (56 percent) were females with an average age of 27 years (26.8 ± 8.45 years). The male partners were older (36.236 ± 11.72 years). As with the index patients, about a third (34 percent) were Apostolic, 24 percent Protestants, 5 percent Catholics and 6 percent Pentecostal. Seventy percent of the contacts reported that they were in a monogamous marriage, 19 percent polygamous, 2 percent divorced and 2 percent single. Again, as with the index patients, the majority had completed form four (34 percent). Twenty five percent had completed primary education and 20 percent form two. Eighteen percent had not managed to complete their primary level of education. Thirty five percent of these partners were unemployed. A summary of the demographic characteristics of the index patients and their contacts is shown in Table 1.

Knowledge of STIs/HIV

The clients' (index patients and contacts) knowledge of the STIs was assessed. Both patients (91 percent) and their contacts (81 percent) had heard about STIs. They were asked to name the types of STIs they had heard about. Genital ulcer disease and urethral discharge syndrome were the two STIs most frequently cited by the clients. The percentages of clients who mentioned specific syndromes are summarized in Table 2.

Table 1: Percentage distribution of demographic characteristics of STI clients by type.

Characteristics	Index (N = 632)	Contact (N = 168)
Gender		
Male	38.6	44.2
Female	61.4	55.8
Mean Age		
Males	30.8	36.2
Females	29.5	26.7
Marital status		
Married (monogamous)	56.1	69.6
Married (polygamous)	9.9	18.5
Divorced	8.0	6.0
Single	15.8	2.4
Level of Education		
Primary (incomplete)	18.0	17.7
Primary (completed)	30.2	25.0
Form two (completed)	19.5	19.5
Form four (completed)	27.2	34.1

Table 2: The percentage of clients (patients and contacts) mentioning STIs.

STI syndrome	Index patients (N = 632)	Contacts (N = 168)
Genital ulcer	66.9%	69.0%
Urethral discharge	63.1%	56.5%
Vaginal discharge	41.5%	41.1%
Bubo	35.8%	36.3%

Clients were asked about their first source of information on STIs. Friends and relatives were, by far, the most important source of information. Other important sources were radio/tv and health workers. Figure 2 portrays the sources of information where clients learned about STIs.

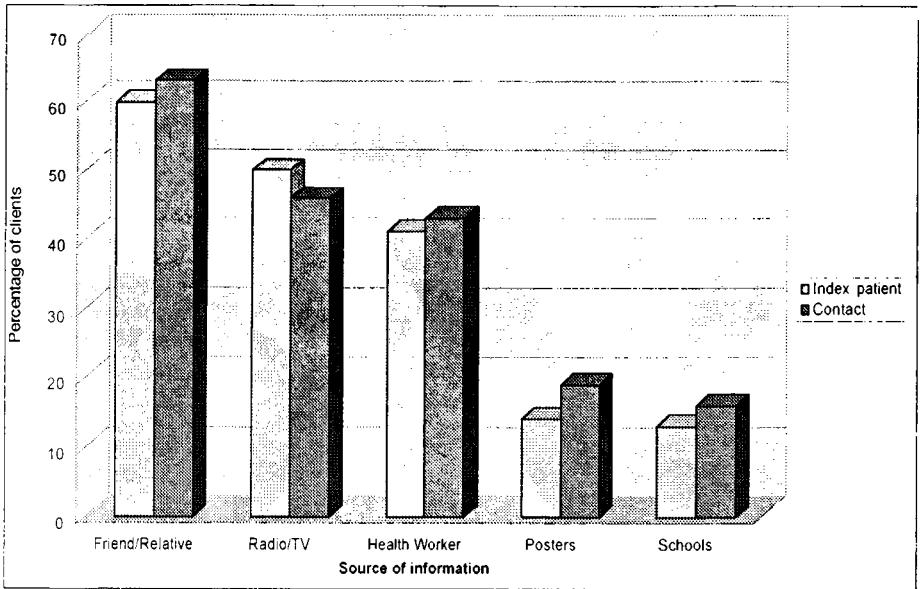


Figure 2: First source of information on STIs.

In terms of protection from getting infected with STIs, both types of clients mentioned the use of condoms (74 percent index patients and 71 percent contacts) and having one faithful sexual partner (62 percent index patients and 65 percent contact). On whether AIDS had changed people's sexual behaviour in general, about half the clients (49 percent index patients and 51 percent contacts) did not believe that AIDS had changed people's sexual behaviour. Again, half the clients (53 percent index patients and 49 percent contacts) felt they were at high risk of getting infected mainly because their partners were not faithful (66 percent index patients and 60 percent contacts).

Sexual behaviour of STI clients

A questionnaire was administered to determine the sexual behaviour of the index patients and their contacts. An analysis of the number of sexual partners they had had in the past three months revealed that 78 percent of the index patients and 79 percent of the contacts had been exposed to one partner only. Slightly over half (53 percent) of the index patients reported that they have never used condoms, 27 percent sometimes used them and 12 percent always used them during sexual intercourse. A similar pattern of response to condom use was reported by the contacts, although more contacts (61 percent) admitted that they never used condoms during sexual intercourse. On whether they had used a condom during their last sexual encounter, 12 percent of the index patients and 11 percent of contacts did not use condoms because either they trusted their partners (239 index

patients and 60 contacts) or their partners had refused (112 index patients and 36 contacts). Forty-four percent of the index patients and 46 percent of contacts said it was not their first time to contract an STI. Of these, 42 index patients and 35 contacts had previously contracted an STI on two occasions.

Seventy-nine percent of the index patients said they knew the source of their current infection and 84 percent of these said they were able to notify their partners. Those who could not notify their partners gave various reasons. Fifty-four percent said their partners were out of reach, 14 percent were afraid of victimisation and 6 percent said their partners were deceased. With regards to the contacts, 69 percent knew the source of their current infection and of these, 54 percent said they could notify their partners. The reasons given by the contacts that could not notify their partners were that their partners were out of reach (28 percent) and that they were afraid of victimisation (1 percent).

Discussion

The study has revealed vaginal discharge syndrome, genital ulcer disease and urethral discharge syndrome to be the most common type of STIs in Chiweshe communal area. These results are in agreement with findings by Latif (1995) in a study aimed at determining the pattern of STI among men and women seeking STI care.

The main causes of vaginal discharge and urethral discharge are gonococcal and chlamydial infection. It is therefore recommended that if these infections are suspected, treatment should be given immediately. However, with women presenting with vaginal discharge, efforts should be made to eliminate physiological discharge. Genital ulcers are mainly caused by *Treponema pallidum*, *Haemophilus ducreyi* and *Herpes simplex virus* and if these are suspected, treatment for chancroid and syphilis should be commenced immediately as there is no treatment for *Herpes simplex virus*. In addition, the patients should be given a complete health care package as described by WHO (1991) and Latif, *et al* (1996).

Out of a total of 168 partners referred to the health centers, 93 percent had been referred by index patients and only 7 percent by health workers indicating that partner referral by index patients is more effective than contact tracing by health workers. Those partners who could not be traced were reported to have either given false addresses or out of catchment area (Chiweshe Communal Area). The fact that more partners visited the health centers as a result of being referred by their sexual partners is an important finding since tracing sexual contacts through health workers is very expensive.

Another important finding emanating from this study is that people's behaviour has not significantly changed due to the AIDS pandemic. Although these people were highly knowledgeable of the STIs, particularly genital ulcers and urethral discharge syndrome, and the consequences of getting infected, people are still engaging in unprotected sexual intercourse. About half the index patients reported

that they never use condoms and yet they felt they were at high risk of contracting STIs due to their partners' infidelity. There is urgent need to find out why condom use is low despite the people feeling to be at the risk of contracting STIs and/or AIDS. Probably some cultural factors are at play and these need to be investigated.

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