2 Taketa K, Ikeda S, Suganuma N, *et al*. Differential seroprevalences of hepatitis C virus, hepatitis B virus and human immunodeficiency virus among intravenous drug users, commercial sex workers and patients with sexually transmitted diseases in Chiang Mai, Thailand. *Hepatol Res* 2003;**27**:6–12
3 Ghys PD, Bazant W, Monteiro MG, Calvani S, Lazzari S. The epidemics of injecting drug use and HIV in Asia. *AIDS* 2001;**15** (Suppl 5): 91–9
4 Strathdee SA, Zafar T, Brahmbhatt H, Baksh A, ul Hassan S. Rise in needle sharing among injection drug users in Pakistan during the Afghanistan war. *Drug Alcohol Depend* 2003;**71**:17–24
5 Ahmed MA, Zafar T, Brahmbhatt H, *et al*. HIV/AIDS risk behaviors and correlates of injection drug use among drug users in Pakistan. *J Urban Health* 2003;**80**:321–9
6 Pallas JR, Farinas-Alvarez C, Prieto D, Delgado-Rodriguez M. Coinfections by HIV, hepatitis B and hepatitis C in imprisoned injecting drug users. *Eur J Epidemiol* 1999;**15**:699–704
7 Shah SA, Altaf A, Mujeeb SA, Memon A. An outbreak of HIV infection among injection drug users in a small town in Pakistan: potential for national implications. *Int J STD AIDS* 2004;**15**:209
8 Luby S, Khanani R, Zia M, *et al*. Evaluation of blood bank practices in Karachi, Pakistan, and the government's response. *Health Policy Plan* 2000;**15**:217–22
9 Shah SA, Altaf A. Prevention and control of HIV/AIDS among injection drug users in Pakistan: a great challenge. *J Pak Med Assoc* 2004;**54**:290–1

Clinical screening for HIV in a health centre setting in urban Kenya: an entry point for voluntary counselling, HIV testing and early diagnosis of HIV infection?

V Arendt[1,2] J Mossong[3] R Zachariah[4] C Inwani[1] B Farah[5] I Robert[2] A Waelbrouck[1] K Fonck[5]

[1]Médecins Sans Frontières, Mission Kenya, Brussels Operational Centre, Brussels, Belgium; [2]CRP-Santé Retrovirology Laboratory; [3]Laboratoire National de Santé, Luxembourg; [4]Médecins sans Frontières, Medical Department (Operational Research), Brussels, Belgium; [5]Ghent University, University of Nairobi and Nairobi City Council STD Programme, Nairobi, Kenya

Correspondence to: Joël Mossong, Laboratoire National de Santé, PO Box 1102, L-1011 Luxembourg
Email: joel.mossong@lns.etat.lu

TROPICAL DOCTOR 2007; **37:** 45–47

SUMMARY A study was conducted among patients attending a public health centre in Nairobi, Kenya in order to (a) verify the prevalence of HIV, (b) identify clinical risk factors associated with HIV and (c) determine clinical markers for clinical screening of HIV infection at the health centre level.

Of 304 individuals involved in the study, 107(35%) were HIV positive. A clinical screening algorithm based on four clinical markers, namely oral thrush, past or present TB, past or present herpes zoster and prurigo would pick out 61 (57%) of the 107 HIV-positive individuals.

In a resource-poor setting, introducing a clinical screening algorithm for HIV at the health centre level could provide an opportunity for targeting voluntary counselling and HIV testing, and early access to a range of prevention and care interventions.

Introduction

Diagnosis of HIV infection in Africa is often made at the hospital level, when individuals often have advanced stages of clinical disease and immunosuppression. The management of individuals in late stages of disease progression is complicated, and treatment outcomes are likely to be less successful than if these individuals were detected early. In some countries in sub-Saharan Africa, 70% of hospital-related admissions are HIV-linked, and the related mortality is as high as 68%.[1,2]

The health centre is the first-line health facility that is often the most accessible to the population. Thus, the first contact of an ill person who is HIV-positive but whose status is unknown is most likely to occur at such centres. If those who are likely to be HIV positive could be identified on the basis of simple clinical findings, they could be encouraged to undergo voluntary counselling and HIV testing (VCT).[3,4] This would serve as a gateway to early diagnosis of HIV infection and access to a number of prevention and care interventions. First, they could be offered cotrimoxazole prophylaxis[5,6] for the prevention of HIV-related opportunistic infections. Second, isoniazid preventive therapy could be offered to prevent reactivation TB.[7] Third, HIV-positive individuals could be prepared to start antiretroviral therapy (ART) when they become eligible.[8] Fourth, people in a stable relationship can take steps to protect their partner from becoming infected, and they could also avoid mother-to-child transmission of the virus.

This study was conducted among individuals attending a health centre facility in urban Nairobi, in order to (a) determine the prevalence of HIV, (b) identify clinical risk factors associated with HIV and (c) determine clinical markers that could be useful for clinical screening of HIV at the health centre level.

Materials and methods

The study was conducted between May and August 1998 at Dandora Health Centre, a primary health-care facility in an urban suburb of Nairobi, Kenya. The centre is a public health facility offering free health-care services including general outpatient consultations, mother and child health services, management of sexual transmitted infections and TB treatment. All consecutive patients presenting at the health centre on randomly selected days of the week were involved in the study.

All individuals once managed for their principal complaint were referred to a VCT unit where they received pre-test counselling. Those who accepted HIV testing underwent post-test counselling. HIV serology was performed using a combination of a rapid test (Capillus, Cambridge Diagnostics Ltd, Galway, Ireland) and an enzyme-linked immunosorbent assay (Innotest,

Innogenetics, Gent, Belgium). The choice of tests and testing procedures were in accordance with World Health Organization (WHO) recommendations.[8]

Interviewer-administered questionnaires (which had been pre-tested) and a record form were used to gather information on sociodemographic data, past medical history and clinical findings included in the WHO clinical staging[9] of HIV disease. Analysis was done using the Epi-Info (CDC, Atlanta, USA), and the STATA 8.0 (Stata Corporation, College Station, USA) softwares. Crude and adjusted odds ratios were determined using stepwise logistic regression analysis. Sensitivity, specificity, positive and negative predictive values of medical conditions were determined using positive HIV serology as the reference standard.

Results

A total of 304 patients were involved in the study, of whom there were 232 (77%) women and 71 men (median age; 25 years, range 15–60). There were 107 (35%) individuals who were HIV positive including 88 (38%) women and 19 men.

Risk factors associated with an HIV-positive status, as well as their positive and negative predictive values, are shown in Table 1. Four medical conditions were found to be independent risk factors for HIV seropositivity. This included oral thrush, past or present herpes zoster, past or present TB and chronic genital herpes.

Oral thrush, past or present history of herpes zoster, past or present TB and severe prurigo were the most discriminating conditions associated with HIV (Figure 1). In all, 61 (63%) of 97 individuals presenting with at least one of these four medical conditions were HIV positive. A screening algorithm using these four medical conditions would pick out 61 (57%) of the 107 HIV-positive individuals who attended the health centre in the study period (sensitivity = 57%, specificity = 82%, positive predictive value = 63%, negative predictive value = 78%). A patient who presented with any one of those four medical conditions had an odds ratio of 5.93 (95% confidence interval 3.50–10.04) for being seropositive compared with individuals without those conditions.

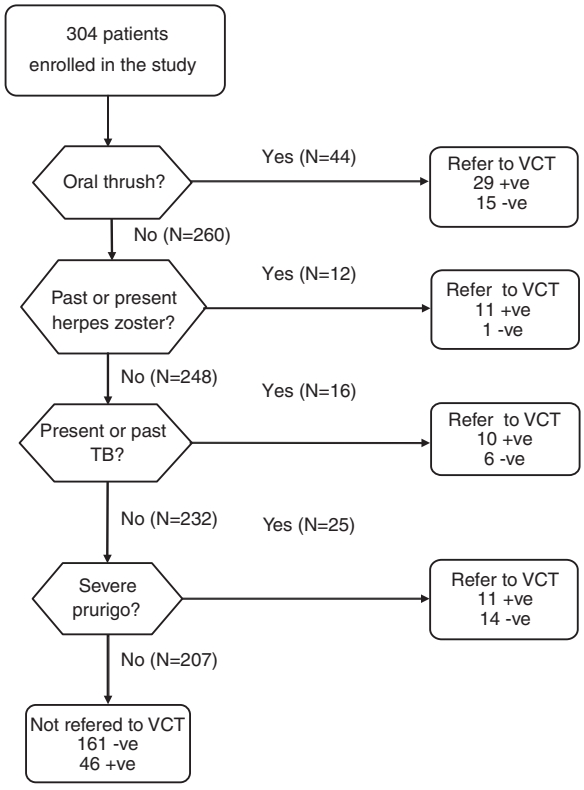

Figure 1 Screening for HIV using simple clinical markers (oral thrush, herpes zoster, TB, severe prurigo) at Dandora Health Center

Table 1 Risk factors associated with HIV infection and predictive values of medical conditions

Medical condition	*Sensitivity*	*Specificity*	*Positive predictive value*	*Negative predictive value*	*Crude odds ratio* (95% CI†)*	*Adjusted odds ratio‡ (95% CI†)*
Kaposi's sarcoma	1	99	50	65	1.85 (0.11, 29.86)	
Tuberculosis (present or past)	17	96	72	68	5.49 (2.21, 13.62)	5.81 (2.08, 16.25)
Severe prurigo	23	91	58	69	3.03 (1.57, 5.87)	
Shingles (past or present)	14	98	83	68	10.54 (2.98, 37.33)	7.26 (1.82, 28.93)
Oral thrush (past or present)	27	92	66	70	4.51 (2.29, 8.88)	2.75 (1.24, 6.07)
Oral hairy leukoplakia	3	100	100	65	∞§	
Chronic genital herpes (past or present)	21	93	61	68	3.38 (1.65, 6.94)	2.75 (1.15, 6.55)
Other skin conditions¶	17	95	67	68	4.22 (1.83, 9.78)	
Lymphadenopathy	7	100	100	67	∞§	
Chronic diarrhoea, past or present	25	90	59	69	3.16 (1.66, 6.03)	
Weight loss (BMI <18,5)	39	75	46	69	1.95 (1.18, 3.23)	
Neurologic signs**	40	77	48	70	2.20 (1.33, 3.67)	
Fever longer than 1 month	34	82	50	69	2.27 (1.32, 3.89)	
Weakness longer than 1 month	41	76	48	70	2.23 (1.34, 3.70)	
Cough longer than 1 month	20	91	54	68	2.43 (1.23, 4.79)	
History of sexually transmitted infections	36	76	45	69	1.78 (1.07, 2.97)	

*From univariate analysis
†Confidence intervals
‡From multivariate analysis: odds ratios of four medical conditions selected by stepwise logistic regression as defined in methods
§Odds ratios are infinite because all patients with these conditions were seropositive. This variable was not included in multivariate logistic regression
¶Other skin conditions include any of the following: molluscum contagiosum, drug reactions, seborrheic dermatitis, folliculitis or extensive fungal skin infection
**Neurologic signs include polyneuropathy, focal signs, meningism, ataxia, pins and needles
BMI, body mass index; CI, confidence interval

Discussion

This study shows that one in three individuals attending a health centre in urban Kenya are HIV positive. Targeting VCT to clinical subgroups of individuals having past or present herpes zoster, past or present TB, oral thrush and prurigo would detect more than half of all these HIV-positive individuals.

Present or past history of herpes zoster and TB are easy to diagnose, as patients are often able to recall having had these two conditions. In particular, the scar of past herpes zoster can also be verified by physical examination, and it is often possible to confirm a history of TB through patient identification cards and the TB register. Oral thrush and prurigo can be detected by simple oral examination and inspection of the skin, respectively. Screening using such clinical markers should thus be feasible in health centres in Kenya where clinical acumen is often limited, staff are overworked and resources are limited.

The WHO has set an ambitious target of offering 3 million people ART by 2005.[8] This will invariably have to involve a scaling-up process involving simplification of HIV/AIDS interventions and eventual decentralization to the health centre level. Confirmed HIV-positive individuals who have clinical markers identified in this study would fall into WHO stages II–IV and would thus be eligible for cotrimoxazole prophylaxis,[10] isoniazid prophylaxis[7] and eventually ART.

In a resource-poor setting, introducing a clinical screening algorithm for HIV at the health centre level using four simple clinical markers could provide an opportunity for targeted VCT and early access to a range of prevention and care interventions.

Acknowledgements

We are grateful to the Nairobi city council for their collaboration and support. We also acknowledge the support of Médecins sans Frontières to health centres in Nairobi, and particularly, to the Dandora Health Centre.

References

1 Lewis K, Callaghan M, Phiri K, *et al*. Prevalence and indicators of HIV and AIDS among adults admitted to medical and surgical wards in Blantyre, Malawi. *Trans Roy Soc Trop Hyg* 2003;**97**:91–6
2 Tembo G, Friesan H, Asiimwe-Okiror G, *et al*. Bed occupancy due to HIV/AIDS in an urban hospital medical ward in Uganda. *AIDS* 1994;**8**:1169–71
3 The Voluntary HIV-1 Counselling and Testing Efficacy Study Group. Efficacy of voluntary HIV-11 counselling and testing in individuals and couples in Kenya, Tanzania, and Trinidad: a randomised trial. *Lancet* 2000;**356**:103–12
4 Sweat M, Gregorich S, Sangiwa G, *et al*. Cost-effectiveness of voluntary HIV-1 counselling and testing in reducing sexual transmission of HIV-1 in Kenya and Tanzania. *Lancet* 2000;**356**:113–21
5 Wiktor SZ, Sassan-Morroko M, Grant AD, *et al*. Efficacy of trimethoprim-sulphamethoxazole prophylaxis to decrease morbidity and mortality in HIV-1 infected patients with tuberculosis in Abidjan, Cote d'Ivoire: a randomised controlled trial. *Lancet* 1999;**353**:1469–75
6 Zachariah R, Spielmann MP, Chingi C, *et al*. Voluntary counseling, HIV testing and adjunctive cotrimoxazole reduces mortality in tuberculosis patients in Thyolo, Malawi. *AIDS* 2003;**17**:1053–61
7 World Health Organization. Policy statement on preventive therapy against tuberculosis in people living with HIV, 1998 WHO/TB/98.255, UNAIDS/98.34. Geneva: WHO, 1998
8 UNAIDS/WHO. Revised recommendations for the selection and use of HIV antibody tests. *Wkly Epidemiol Rec* 1997;**72**:81–7
9 World Health Organization. *Scaling up Anti-retroviral Therapy in Resource-limited Settings. Guidelines for a Public Health Approach*. QV268.5. Geneva: WHO, June 2002
10 UNAIDS. *Provisional WHO/UNAIDS Secretariat Recommendations on the Use of Cotrimoxazole Prophylaxis in Adults and Children Living with HIV/AIDS in Africa*. Geneva: UNAIDS, 2000

Efficacy of topical ophthalmic prophylaxis in prevention of ophthalmia neonatorum

Zahra Khalili Matinzadeh MD
Fatemeh Beiragdar MD
Zohreh Kavemanesh MD
Hasan Abolgasemi MD
Susan Amirsalari MD

Department of Paediatrics, Bagyatallah Medical Sciences University, Tehran, Iran

Correspondence to: Z Khalili Matinzadeh
Email: matinzadeh@bmsu.ac.ir

TROPICAL DOCTOR 2007; **37**: 47–49

SUMMARY Ophthalmia neonatorum is a form of conjunctivitis occurring in infants younger than 4 weeks. It can be a leading cause of blindness in newborns. In this random clinical case–control study, ophthalmia neonatorum was investigated in one university centre. In this study, prophylactic effect of normal saline and ophthalmic erythromycin was compared with a group not receiving any prophylaxis. The first group received ophthalmic erythromycin ointment (0.5%), the second group were distilled one drop of normal saline into each eye, and the third group did not take any prophylaxis. Within the first 10 days of life, conjunctivitis developed in 138 newborns (13.8%). Of conjunctivitis cases, 29.7% were in erythromycin group, 31.9% in normal saline group and 38.4% were in no-prophylaxis group. In general, no significant difference was observed among the three groups ($P > 0.05$).

Introduction

Ophthalmia neonatorum is a form of conjunctivitis occurring in neonatal period. It is the most common cause of acute ophthalmic disease in newborns. The reported incidence of this disease varies, from 1.6% in USA to 23% over the world, and in some studies even 25.6%.[1–3] There have been many different aetiologic agents implicated that differ greatly in their virulence and clinical course.[4–8] The aetiologic agents include bacteria, viruses and chemical compounds. The most