

## Brief Communication

### Seroprevalence of HIV infection among psychiatric patients in Benin City, Nigeria

*Richard Omoregie, MSc, FIMLS, Monday O. Efam, MSc, AIMLS, John C. Ihongbe, MSc, PhD, Helen O. Ogefere, PhD, FIMLS, Evelyn U. Omokaro, MSc, FIMLS.*

The prevalence of human immunodeficiency virus (HIV) infection continues to rise in sub-Saharan African and HIV infection can cause severe mental illness.<sup>1</sup> Psychiatric patients indulge in risky behavior that makes them vulnerable to HIV infections,<sup>2</sup> and it has been reported that psychiatric patients with HIV infection have higher rates of suicidality.<sup>3</sup> Several studies have reported various prevalence rates of HIV among psychiatric patients.<sup>1,2</sup> In Nigeria there is no report on the prevalence of HIV infection among psychiatric patients and the Presidents Emergency Plan for AIDS Relief (PEPFAR) as well as other interventions by other agencies and organization, are not geared towards the mentally ill, probably, due to lack of data on their HIV status. Against this background, this study aims to determine the seroprevalence of HIV among psychiatric patients in Benin City, Nigeria, as well as their hematological profile.

A total of 121 in-patients at the Federal Psychiatric Hospital, Benin City, Nigeria, were included in this study carried out from May 2005 to April 2006. The patients consist of 86 males and 35 females between 15-41 years of age. Patients deemed unable to give consent and had no relations to give consent as well as patients, based on psychiatric evaluations, deemed not to be able to cope with a positive result, were excluded from the study. Based on psychiatric disorders, the patients consist of 71 schizophrenics, and 25 each of drug addicts and those with mood disorders. Verbal informed consent was obtained from each patient, or their relatives where the patients were deemed to be unable to give informed consent. The Ethical Committee of the Federal Psychiatric Hospital, Benin City, Nigeria, approved the protocol for this study. Ten milliliters of blood was collected from each patient and dispensed in 5ml amounts into ethylenediamine tetra-acetic acid containers and plain containers. The current national algorithm for HIV serodiagnosis as recommended by the Centers for Disease Control was used. The algorithm involves the use of 3 rapid diagnostic kits, following their manufacturer's instructions. Briefly, each patient serum was screened for the presence of HIV antibodies using Determine® (Abbott Laboratories, Tokyo, Japan) and HIV 1/2 Stat-Pak® (Chembio Diagnostic Systems, New York, USA). If both kits show positive, the patient is positive for HIV infection and vice versa. However, if the results are discordant, the third kit, Genie II HIV – 1/HIV – 2 (Biorad, Marnes-la-Coquette, France) was used. The HIV sero-status is taken as the result of

either of the first 2 kits that agrees with that of the third kit. The hematological parameters include hematocrit, red cell distribution width, erythrocyte sedimentation rate (ESR), platelet count, mean platelet volume, total white blood cell count, and CD4<sup>+</sup> count. The ESR was determined using the Westergren method. The CD4<sup>+</sup> count was determined using flow cytometry (Partec, GmbH, Germany), while the other parameters were determined using an auto analyzer – Sysmex KX – 21 (Sysmex Corporation, Kobe, Japan). The data were analyzed manually. The non-parametric data were analyzed using chi-squared test, while the parametric data were analyzed using student t-test.

A total of 41 (33.9%) out of 121 patients included in this study were seropositive for HIV infection (Table 1). This is higher than most previous reports.<sup>1,2</sup> The reason could be due to the consent giving by relatives of our patients. This agrees with the notion that HIV prevalence is higher in psychiatric patients and that ethical issues (informed consent) pose a barrier to HIV testing in these patients.<sup>1</sup> The result obtained in this study is worrisome as these categories of patients are currently not candidates or target groups for HIV infection management by the various HIV/AIDS intervention organizations. Thus, there is increasing mortality and stigmatization among these patients. It has already been reported that HIV positive psychiatric patients have higher rates of suicidality.<sup>3</sup> Unless urgent interventions are geared towards this group of patients, awareness of their HIV status may likely increase their suicidal tendencies. Female psychiatric patients had a higher seroprevalence of HIV than their male counterparts (40% versus 31.4%), although the difference was not statistically significant ( $X^2 = 0.7905$ ,  $p=0.365$ ). It has previously been reported that gender is not a risk factor for acquiring HIV infection among psychiatric patients.<sup>2</sup>

In this study, patients with mood disorders (68%) had a significantly ( $p=0.000$ ) higher prevalence of HIV infection compared to drug addicts (52%) and schizophrenics (15.5%). The high prevalence of HIV infection among patients with mood disorders may partly be due to personality deficits, which increase their vulnerability to becoming victims of sexual abuse or falling into casual or coercive relationships.<sup>2</sup>

**Table 1** - Seroprevalence of HIV in relation to type of mental illness.

Type of mental illness	Number tested	Number positive (%)
Drug addicts	25	13 (52.0)
Mood disorders	25	17 (68.0)
Schizophrenia	71	11 (15.5)
<b>Total</b>	<b>121</b>	<b>41 (33.9)</b>

$X^2 = 27.2683$ ,  $p=0.000$

It is important to note that this study disagrees with studies in which drug addicts were more at risk of HIV infection.<sup>2</sup> Heterosexuality, a major means of HIV transmission in Africa (especially Nigeria), is common among psychiatric patients,<sup>2,3</sup> perhaps more among those with mood disorders. This may explain the difference between our study and others. The results of the hematological profile obtained in this study are not at variance with that of non-psychiatric HIV patients.<sup>4,5</sup> Human immunodeficiency virus patients have been reported to have cytopenia as a result of bone marrow suppression.<sup>4</sup>

In conclusion, an HIV seroprevalence of 33.9% was observed, and the prevalence was highest among psychiatric patients with mood disorders. The hematological profiles observed are the same as that reported for non-psychiatric HIV patients. Urgent HIV/AIDS intervention is advocated for psychiatric patients.

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From the School of Medical Laboratory Sciences (Omoregie, Ogefere, Omokaro), University of Benin Teaching Hospital, the Laboratory Department (Efam), Federal Psychiatric Hospital, Benin City, and the Department of Medical Laboratory Science (Ibongbe), Faculty of Basic Medical Sciences, Ambrose Alli University, Ekpoma, Edo State. Address correspondence and reprint requests to: Dr. Richard Omoregie, Lecturer, School of Medical Laboratory Sciences, University of Benin Teaching Hospital, P.M.B. 1111, Benin City, Edo State, Nigeria. Tel. +234 8029582386. E-mail: richyomos@yahoo.com

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