

CASE REPORT

Sexual Dysfunction among HIV Patients: Three Case Reports and Review of Literature

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Abstract

Global efforts in addressing the HIV/AIDS epidemic have focused on preventing new infections, reduction of viral loads through treatment and care and support for the patients. Hardly any attention has been given to their quality of life in particular sexual health and functioning. There is a growing body of literature indicating high prevalence of sexual problems amongst HIV-infected individuals, whose mechanisms remain unclear. This may affect individuals' quality of life, interpersonal relationships and HIV treatment. The sub-Saharan Africa (SSA) region is the epicentre of the HIV epidemic, majority of the patients being young (< 30 years old) and in long-term heterosexual relationships. With increased life expectancy due to expanded access to HAART, the prevalence and potential impact of sexual dysfunction are certain to be significant. There is urgent need for appropriate research on sexual experiences and functioning amongst HIV patients in SSA and appropriate interventions to address them. Current efforts to link HIV/AIDS and sexual and reproductive health and rights (SRHR) and proposals to make SRH services integrated and comprehensive provide are a good starting point. However SRHR policies, strategic plans and programmes should be reviewed to ensure inclusion of sexual health. *Afr J Reprod Health 2013 (Special Edition); 17[4]: 161-170.*

Keywords: HIV-AIDS, Sexual Dysfunction,

Résumé

Les efforts mondiaux dans la lutte contre l'épidémie de VIH/SIDA ont mis l'accent sur la prévention des nouvelles infections, la réduction de la charge virale par le traitement, les soins et le soutien des patients. Pratiquement aucune attention n'a été accordée à leur qualité de vie, surtout la santé sexuelle et le fonctionnement. Il y a un nombre croissant de documentation indiquant une forte prévalence des problèmes sexuels entre les individus infectés par le VIH, dont les mécanismes restent peu clairs. Ceci peut affecter la qualité de vie des individus, les relations interpersonnelles et le traitement du VIH. La région de l'Afrique subsaharienne (ASS) est l'épicentre de l'épidémie de VIH, la majorité des patients étant jeunes (< 30 ans) et dans les relations hétérosexuelles à long terme. Avec l'augmentation de l'espérance de vie à cause d'un accès élargi aux TARTHA, la prévalence et l'impact potentiel de la dysfonction sexuelle sont certains d'être importantes. Il y a un besoin urgent d'une recherche appropriée sur les expériences sexuelles et le fonctionnement chez les patients séropositifs en Afrique subsaharienne et des interventions appropriées pour y remédier. Les efforts actuels pour relier le VIH/SIDA et la santé sexuelle et de la reproduction et les droits (SSRD) et des propositions pour rendre les services de santé sexuelle et de la reproduction SSR intégrée et globale représentent un bon point de départ. Cependant, les politiques de SSRD, les plans stratégiques et les programmes doivent être revus pour assurer l'intégration de la santé sexuelle. *Afr J Reprod Health 2013 (Edition Spéciale); 17[4]: 161-170.*

Mots clés: VIH/SIDA, dysfonction sexuelle

Introduction

UNAIDS (2010) report indicated that the world was beginning to register significant reduction in HIV/AIDS-related morbidity and mortality in many of the heavily burdened countries. There

was also a reduction in the number of new infections in several countries including those heavily burdened in sub-Saharan Africa (SSA)¹. These achievements have been attributed to changes in sexual behaviour with increased knowledge and awareness, credited for reversal of

the epidemic and expanded access to highly-active antiretroviral therapy credited for improved health and prolongation of lives^{2,3,4}.

The sub-Saharan Africa (SSA) region, which has only 12% of the total world population, remains the epicentre of the HIV/AIDS epidemic with 68.0% of the global total in 2010⁵. The same UNAIDS report (2010) showed that of the 33 countries where the incidence of HIV/AIDS had dropped between 2001 and 2009 globally, 22 were in SSA. However majority of new infections continue to occur in SSA, with 31.0% of them being in only 10 countries¹. Heterosexual intercourse remains the main mode of HIV transmission in SSA⁵. Most HIV-infected individuals are young (<30 years old) and majority are in long-term heterosexual relationships, 62.0% in Kenya and 78.0% in Malawi^{5,6}.

The advent of and increased access to combination/highly-active antiretroviral therapy (cARVT/HAART) globally has led to great optimism for more efficient and long-term management of HIV infection. There is also great expectation among programme workers, service providers and patients that more infected individuals especially in the developing countries will live healthier and longer than hitherto. Many patients who previously would have viewed a diagnosis of HIV infection as a death-sentence have a new lease of life. A collaborative cohort analysis of patients from the USA and Europe (2008) showed that a young man in his early 20's with HIV infection, if started on HAART can expect to live an additional 49 years⁷. Mills et al (2011) in their study in Uganda reported that HIV-infected patients put on combined ARVT can expect an almost normal life expectancy⁸. These and other similar study findings vindicate the global efforts in addressing the HIV/AIDS epidemic. Many infected men and women are now not only able to engage in economic and social development endeavours but enjoy generally good health. As a result they naturally expect to live normal lives including sexual and reproductive lives.

Evidence from published literature shows that HIV/AIDS has a myriad of effects on the individual's sexuality and reproduction. While the

majority are able to and continue to have regular and enjoyable sexual relationships^{9,10}, there is a growing body of literature mainly from the developed world indicating higher prevalence of sexual problems including sexual dysfunction among infected individuals than the general population^{11,12,13,14}. The exact mechanisms or pathogenesis thereof is not clearly understood and studies on associated/risk factors have yielded conflicting findings.

There is paucity of published data on sexual health, adaptations and functioning among HIV infected people in SSA. With the high disease burden and more infected individuals living longer, thanks to cARVT, the prevalence of SD is likely to be significant.

Sexual dysfunction may impact on the individuals' quality of life, interpersonal relationships, health, uptake and adherence to cARVT^{15,16}, with the risk of increased infectivity and worsening of HIV disease itself. These sequelae will invariably pose new challenges to the HIV/AIDS programming and service delivery in SSA countries whose health care systems are already overstretched.

This paper aims at raising awareness on the potential of sexual dysfunction amongst HIV/AIDS patients in SSA. Three illustrative cases managed by the author are presented to highlight the scenario. A review of associated/risk factors is made, and implications of SD on health care programming and service delivery in SSA and possible strategies to mitigate the situation explored.

Case Reports

LWN, a 46 year old health professional, a father of 2 and a divorcee from a neighbouring country was referred to the author by a colleague for erectile dysfunction (ED). He had been diagnosed with HIV-infection 5 years previously and had been on ARVT for about 2 years. Since the diagnosis he had experienced inability to achieve and maintain an erection adequate for normal sexual intercourse. The problem had worsened over time more so after being started on ARVT. He occasionally experienced nocturnal tumescence

but no emission. He had not tried masturbation. His wife of 10 years, a nurse by profession had left him about two years after the diagnosis (she was sero-negative at the time) due to the problem of erectile dysfunction as well as fear of being infected.

He had a new girlfriend – a 25 year old secretary who did not know his sero-status. They had not been sexually intimate because of his ED. He was anxious to be intimate with her and wanted help to achieve it.

He did not have history of other chronic medical conditions such as hypertension, diabetes, tuberculosis or psychiatric illnesses. He had been particularly distressed psychologically by the departure of his wife who had taken away their children with whom he had not been in touch. Upon examination there was no obvious abnormalities noted. He had normal masculine body build, no evidence of lipodystrophy and had normal external genitalia. His blood pressure was 120/80 MM Hg.

He was counselled and advised to disclose his sero-status to his girlfriend before engaging in sexual relations as well as use of condoms to protect her. He was started on Tadalafil (Cialis) 10 mgs every third day. He called back after three months to report that he was quite satisfied with the results. He continues taking his ARVT as well as using protection to avoid infecting his girlfriend.

Mr. AMM, a 41 year old sales manager with a multinational company from another neighbouring country, married to a 34 year old travel agent with two young children had consulted the author about two years ago due to erectile dysfunction.

About six years previously he had severe herpes zoster infection involving the left inguinal region extending to the scrotum and inner aspect of the left thigh and perianal region. He was very sick for about a month during which an HIV test was done and was positive. Following that he noted sudden onset of erectile dysfunction. He could not muster an erection to achieve vaginal penetration. He had not had any nocturnal tumescence or emission and had not tried masturbation. He indicated that he had contracted the virus from one of his girl-friends who had

since died of AIDS. Two years prior to this consultation he had suffered from severe encephalitis, oral and oesophageal candidiasis and gastro-enteritis for which he was successfully treated at a local university teaching hospital. He was also started on ARVT which he was still taking. His sexual functioning had not changed even after starting ARVT. He did not have history of other medical illnesses such as diabetes mellitus, hypertension or psychiatric problems. His wife had stood by his side all this time. Although she was bothered by his erectile dysfunction she was grateful in a way due to fear of being infected. She also admitted to the fact that they had not been intimate for quite some time even before he was diagnosed to have HIV infection and was therefore not missing sex.

Upon physical examination the only notable observation was the herpetic infection scars.

He and his wife were counselled on a number of sessions including the need to use condoms for her protection if and when he is able to have an erection. He was tried on Tadalafil (Cialis) but there was no improvement. They eventually decided to stay like that and are still together to date.

Ms JKM, a 36 year-old female health professional, married to a 40 year-old airline pilot, with two young children had been under the author's professional care for about six years. He had taken care of her during her two pregnancies and deliveries as well as for contraceptive consultation and other gynaecological concerns. About a year before the current consultation her husband had been admitted and treated for acute pulmonary tuberculosis during which he was also diagnosed to have HIV infection. He made satisfactory recovery from the tuberculosis and was started on ARVT. Her HIV test was also positive but she had remained in good general condition. Her CD4+ count had remained high throughout.

Her concern was that she had completely lost interest in sex. She had absolutely no desire for sex. The few times they had tried using condoms she just did it because of pressure from her husband. She also had problems with sexual arousal leading to poor lubrication which made

sexual intercourse very painful. She found the whole process cumbersome and lacking in spontaneity as they had to plan adequately and ensure they use condoms all the time which she constantly worried might break while he was inside her due to the dryness. She had not liked the idea of using condoms anyway even before the diagnosis.

She reported that she felt hurt and angry towards her husband as he had infected her after contracting the HIV from another woman and that she had been faithful to him since they got married. As a result she had avoided sex altogether and had not been sexually intimate in the preceding six months. She was advised to come with her husband for counselling but he declined.

Discussion

Normal sexual function is a bio psychosocial process and relies on the coordination of psychological, endocrine, vascular, and neurological factors. It is acknowledged to be an essential component of health and satisfying sexual relationship. It is also an essential ingredient of a successful and healthy interpersonal/marital relationship¹⁷. Experience of sexual problems such as dysfunction is generally associated with poor quality of life¹⁸. Motivation and desire to engage in sexual intimacy vary a lot from one person to another and one time/scenario to another even in the same person. Meston et al (2005) noted that some of the reasons for engaging in sexual relationships include pleasure, commitment, a need to boost self-esteem, obligation or partner pressure and vengeance for being wronged by a partner¹⁹. Prairie et al (2011) contend that emotional well-being is critical for desire to engage in sexual intimacy²⁰.

Majority of HIV-infected individuals in SSA are young (<30 years)^{1,5} and in long-term heterosexual relationships⁶. The introduction of HAART in the mid-1990's resulted in a dramatic benefit in the outcome of HIV infection. Patients all over the world are not only living longer but healthier. They are also able to reproduce and many infected women are delivering healthy infants thanks to ARVT and PMTCT^{1,5}.

HIV infection is a chronic disease with potential mental, psychological and physical effects on infected individuals. These effects may be temporary, (short-term), medium-term or long-term depending on the individual. The drugs used to treat the infection (ARVT), co-morbidities or other related or no-related conditions may worsen the situation. As HIV-infected individuals live longer now than before introduction of HAART, age-related factors such as hormonal, vascular and neurological disorders may complicate the picture as well.

Whereas the majority of HIV infected men and women remain sexually active and have satisfying and enjoyable sexual relationships with their spouses/partners or new found love^{9,10}, there is a growing body of literature indicating a higher prevalence of sexual problems including sexual dysfunction among HIV infected men and women than in the general population or uninfected individuals^{10-14,21-24}. Symptoms of SD include (erectile dysfunction) ED, loss of libido/desire, arousal difficulties, delayed or premature ejaculation, orgasmic disturbances, priapism, dyspareunia and vaginismus. Published studies on SD in HIV infected individuals have focused on different symptoms and the procedures of evaluating them have been different. As a result the prevalence of SD and the different domains thereof reported by various studies have varied a lot. The prevalence of ED among infected men and FSD among infected women has been reported to range from 19.5 to 72.0% and 21.0 to 50.0% respectively^{22,25-27}. The prevalence in SSA is unknown. However cognisant of recent reports on SD in the general population in Ghana and Nigeria^{28,29}, it would not be far-fetched to speculate that the prevalence among HIV infected individuals is equally high.

The exact mechanisms or pathogenesis of sexual dysfunction among HIV infected individuals is not well understood. Beckman et al (2006) feel that hormonal, vascular, psychological, neurological factors or cellular function disorders may be involved just like in the un-infected individuals³⁰.

Studies on associated or risk factors for SD in HIV infected people have been inconsistent in

their findings. HIV infection itself, its stage or progression i.e. CD4+ cell count have been shown to be associated with sexual dysfunction by some studies. Studies conducted before the advent of HAART showed that SD was mainly seen among patients with advanced disease and hypogonadism³¹⁻³⁴. Others did not show any association between stage of the disease and SD^{21,35}. One would expect though that in any disease condition the more serious it is the less likely would the patient have desire, motivation and/or energy to engage in sexual intimacy! Medical condition such as HIV and other chronic illnesses and their treatment can have negative impact on sexual functioning^{36,37}. Of the presented three cases two could be said not to have had advanced disease stages and that the one that had herpes zoster, encephalitis, oral and oesophageal candidiasis had AIDS and therefore advanced stage of HIV infection. However his ED had started fairly early in the course of the disease and the ED had not improved even after starting ARVT.

Hormonal factors i.e. changes in the testosterone and estradiol serum levels have been implicated but study findings are also conflicting. Lamba et al (2004) observed that low libido and ED among HIV infected gay men on HAART were associated with elevated estradiol levels (11). Hypogonadism is a well-known cause of ED^{38,39}. It has been shown to be common among HIV infected men with incidence of between 29 and 50% before HAART and between 20 and 30% after HAART being reported^{40,41}. It is thought to be the cause of ED in them. Moreno-Perez et al (2010) noted that 53.4% of their study population had ED and although there was no correlation between the total serum testosterone levels and degree of ED, all patients who had hypogonadism had ED⁴². Bancrofti (2005) stated that a direct effect of estrogen on sexual desire remains unproven in the general population⁴³, while Dennerstein et al (1999) and Motofei et al (2005) opined that desire, arousal and other aspects of sexuality are closely linked to the woman's sexual experiences, duration and quality of relationships rather than hormonal deficiencies^{44,45}. Collazos et al (2002) reported that ARVT were associated

with elevated testosterone and 17b-estradiol but SD was not related to alterations in the sex hormone pattern²⁵. Elevation of prolactin is commonly observed in HIV infected individuals on HAART reported to occur in about 20% of them⁴⁶. Prolactin acts centrally by inhibiting gonadotrophin release through which it is thought may cause SD. However high prolactin levels do not appear to lead to SD as no inhibition of gonadotrophin has been found⁴⁷ and patients with SD did not have higher prolactin values than those who did not complain of SD⁴⁸. None of the two presented male patients had clinical evidence of hypogonadism. We however did not do hormonal assay. Hypogonadism can be excluded in the first case as he improved on PDE5i. It may have been an associated condition in the second case as he did not improve on phosphodiesterase inhibitor (PDEi), tadalafil. PDEis have been recommended as the treatment of choice for ED in HIV-infected individuals after excluding hypogonadism⁴².

There has been a lot of debate on the role of ARVT in SD. However the possible role remains controversial. Whereas some studies support the role of ARVT^{11,23,25,49,50}, others did not find an association^{22,35,40,51}. Colson et al (2000) reported that HIV infected men were about 3.4 times more likely to complain of ED after a protease inhibiting (PI) drug was added while Colebunders et al (2001) observed that the SD regressed or disappeared completely after switching to non-PI containing regimen^{23,52}. A large study on men in 10 European countries revealed that ED and diminished desire were more common in patients on PIs than the PI-naive patients⁴⁹. Another large multi-country study found an association between ARVT and ED but no association with specific ARV drug⁵³. With regards to specific ARV drugs PIs in general^{23,42,49,52}, indinavir^{48,49,50} and ritonavir^{23,49} have been the most commonly involved drugs. A prospective study involving men did not find any relationship between ED and PIs or ARVT in multivariate analysis despite the highly significant association observed with the duration of HAART and PIs in the univariate analysis⁴⁹. In a large European cohort study, Florence et al (2004) did not observe differences on any sexual domains between those on ARVT

and those not³⁵. Bernal et al (2005) in their study in Spain showed an “unexpected” improvement of sexual function during use of atazanavir a new PI whose metabolic pathway is different from that of others⁵⁴. The role of HAART seems to be observed more in men than women and women seem to be overrepresented in studies which did not find an association. It is not clear though whether this is a true observation or that the effect of ARVT in women was masked by the high prevalence of psychological disorders observed in them. It however appears that there is a direct or indirect causal effect of ARVT on SD. This is supported by the fact that the prevalence of SD has not reduced with introduction of HAART despite the significant improvement in the two main factors responsible for SD before HAART i.e. advanced disease and hypogonadism. Although the two male patients were on ARVT, they both had ED before starting treatment. It is unlikely that ARVT were the cause of their sexual dysfunction. ARVT appear to have worsened the ED in the first presented case according to his history. By nature of its main mode of transmission i.e. sex, the fact that it is lifelong with no known cure, potential consequences for the infected and those close to them and the stigma associated with it, HIV infection has a myriad of psychological and psychiatric manifestations. A WHO multicountry study on neuropsychiatric manifestations in HIV/AIDS reported that 26% of patients had depression⁵⁵. A meta-analysis of studies comparing HIV-positive and HIV-negative individuals showed that major depressive disorder occurred nearly twice as often among HIV-positive than HIV-negative patients⁵⁶. ARVT especially the earlier PIs have psychological side effects. There is evidence to suggest that psychosocial factors may play a more prominent role in sexual functioning among HIV infected women than the disease-related factors^{26,35,57,58}. These include grief reactions after developing HIV, depression, fear and anxiety over the possibility of infecting another person or being re-infected during sexual activity, diminished sense of sexual attractiveness, loss of freedom and spontaneity during sex, fear of emotional hurt, the fact that sex is no longer a romantic affair but a tedious and dangerous chore

as one has to plan and use protection all the time and fear of condom breakage^{58,59}. Sexual coercion or assault by partners/spouses may also be contributory. Florence et al (2004) observed that depression was the only factor associated with FSD in their large European study³⁵. Goggin et al (1998) found that on top of depression, lower-life satisfaction and fear of being infected by a partner were associated factors²⁶, while Siegel and Schrimshaw (2003) reported anger towards and distrust of men as factors among infected women⁵⁹. The only presented female case blamed her husband for infecting her. She was angry with him and had no sexual desire. It is not clear though whether she had or would have desire with another man. Of the two presented males, it is not clear what may have been the role of psychological factors and which. Although the first case was unhappy with his wife for taking away the children and was anxious about disclosing his sero-status to the new found love, his ED was present way before these events. The role of body image which may be affected by either real or perceived changes due to HIV infection such as following lipodystrophy seen in about 32% of HIV infected persons⁴², and mostly attributed to PIs⁶⁰, is not yet settled either. Some studies have reported an association between lipodystrophy and SD in HIV infected persons^{21,41,42,51,61}. Luzzi et al (2009) found that the effect of lipodystrophy on body image was the only risk factor of FSD²¹. Duckers et al (2001) reported that patients with lipodystrophy reported drastic decline in sexual activity and enjoyed sex less as well as being less confident in relationships⁶². The association between lipodystrophy and SD has not been shown by other studies however³⁵. Body image experiences are said to be integral to the quality of life for both men and women including the quality of sexual life⁶³, and scientists have recently found that dissatisfaction with one’s body may inhibit sexual behaviour and interfere with the quality of sexual experiences⁶⁴. Lipodystrophy may identify and stigmatise patients with HIV on treatment and may result in sexual and personal ostracisation and isolation. There is no evidence to show that body image played any role in any of the three presented cases.

Several drugs including those used for the management of HIV infection, its co-morbidities and/or complications associated with the disease or its treatment, such as megestrol, ketoconazole, anti-hypertensives, diuretics, benzodiazepine, antidepressants, antipsychotics and opioids may lead to SD^{13,53}. Drugs used to treat HAART-induced hyperlipidemia have been shown to be associated with SD in the general population⁶⁵, but not in HIV infected patients⁵³. ARVT has a direct effect on androgen-receptors, for which Nelfinavir has been implicated, and this may lead to hormonal effects for SD despite normal levels of testosterone (66).

Other factors which have been shown to be associated with SD in the general population such as neuropathy, liver disease, diabetes mellitus, vascular diseases, hepatitis C virus co-infection, drug and substance abuse, may also be responsible in HIV infected individuals^{13,33}. HIV infected individuals may indulge in substance and drug abuse out of frustration. None of the presented cases had history of substance and drug abuse. However the second case may have had neuropathy as a result of the herpes zoster infection. This is supported by the fact that his ED did not improve on Tadalafil.

Conclusion

Sexual dysfunction is common among HIV-infected individuals globally and even though there has been no study in SSA it is fair to conclude that it is equally high. Although the study findings on associated/risk factors have been controversial, the role of the HIV infection itself, drugs used to treat it and associated co-morbidity and other non-related conditions, as well as the individuals' psychological reaction to the diagnosis and social concerns may play direct or indirect roles.

There is a strong correlation between impaired sexual function and emotional and physical satisfaction in relationships and with indices of general life satisfaction. While SD can be a problem for anyone, people living with HIV may be particularly affected. It may lead to psychological problems which may affect

adherence to ARVT, leading to increased viral loads and worsening of HIV infection as well as infectivity. On the social aspect sexual assault and physical/emotional abuse are not uncommon among couples or within families as well as suicidal tendencies or even homicide. Therefore health programme workers and service delivery providers especially those working in HIV/AIDS in SSA need to be aware of the foregoing.

There is urgent need for well designed multicountry studies on sexual functioning and health among HIV-infected individuals to establish the magnitude of the problem, associated factors, impact on their lives and that of their families. There is also need for well designed interventional strategies. Current efforts to link HIV/AIDS and sexual and reproductive health and rights as well as proposals to make sexual and reproductive health services integrated and comprehensive are a good starting point. For a start review of national sexual and reproductive health and rights policies will be necessary to ensure inclusion of sexual health as it is lacking in most countries' policies. Health care providers managing HIV infected patients should enquire into sexual functioning as a matter of routine as the patients may not always volunteer the history of SD. This may require patients being seen by qualified professionals more regularly than it is at the moment where home-based care is being encouraged. Cognisant of the possibly high prevalence in SSA and the numbers thereof, these will create additional burden on already overstretched health systems in SSA. However they must be addressed all the same.

Contribution of the Author

The author did managed the reported cases in his private clinic, did all the literature search, and preparation of the manuscript.

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