Risky Behaviors in Subjects Admitted for Consultation at the Yaounde General Hospital and HIV/AIDS Infection

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ABSTRACT

Acquired Immunodeficiency Syndrome (AIDS) is a disease transmitted by the Human Immunodeficiency Virus (HIV) that affects both men and women. In Africa, the areas most affected by this disease would probably be Southern Africa and East Africa. This could be explained by a combination of social, historical, and economic factors. Cameroon is a country in Central Africa which faces the heavy burden of AIDS transmitted by HIV leading to the weakening of the immune system, making the body vulnerable to multiple opportunistic diseases. For a better monitoring of HIV infection in Cameroon, a prospective study on a sample of 81 participants was conducted at the Yaoundé General Hospital (HGY) from 22th May 2018 to 15th June 2018. This study examines the direct link between population behavior and the frequency of HIV at the Yaounde General Hospital. Immunochromatographic diagnostic technique was used to determine the serological status of participants. A questionnaire was used to collect sociodemographic data. Approximately 58% of participants were women and 42% were men with a sex ratio of 1.4/1. The age group most affected was between 35 and 39 years old. 35% of participants were aged between 25 and 29 years old. HIV was predominant in men with 71% of infections. 29% of those infected were unemployed, 29% had a secondary education, and 71% were single. 14% had their first sexual intercourse before the age of 14, and 71% did not always use a condom. HIV risk factors included poverty, illiteracy, and ethnic or religious prejudice. HIV was present in our sample, and several risk behaviors could be described. Non-use of condoms was the main risk factor, and it affected men more than women. Awareness campaigns could change people's behavior towards infectious diseases.

Keywords: sexually transmitted disease; immune system; opportunistic disease; virus.

INTRODUCTION

We define risky behaviors as all behaviors that can lead to disease. Several risky behaviors can cause Sexually Transmitted Infections (STIs). STIs are defined as all diseases transmitted during sexual intercourse with an infected partner (Sidibe, 2013). Acquired Immunodeficiency Syndrome (AIDS) is a set of symptoms resulting from the destruction of immune system cells by the Human Immunodeficiency Virus (HIV), making the body vulnerable to numerous opportunistic diseases. After HIV infection in humans, the immune system is weakened, making it easier for various other infectious agents to attack the body (Koina, 2012). Esophageal candidiasis is one of the most common opportunistic infections in HIV-infected patients (Behrens et al., 2014). The decrease in the CD4 lymphocyte count increases the risk of opportunistic infection (Ouassou, 2018). Primary HIV infection corresponds to the period of invasion of the body by HIV, which lasts on average 12 weeks after contamination. This is a key moment in HIV infection due to the major and irreversible destruction of the CD4 lymphocyte reservoir (Timsit et al., 2016). HIV infection reduces the vaccine response to certain vaccines (Pacanowski, 2012). Neurologiques complications of the peripheral nervous system are common in HIV-infected patients (Kranick & Avindra, 2012). As HIV-infected patients age, we observe an increase in cognitive complaints (Major et al., 2011), the management of which is difficult (Hasse et al., 2011). Taking into account this diagnostic and therapeutic complexity, the Neuro-HIV platform was created (Schibler et al., 2014). This platform aims to collect clinical data for research purposes (Granziera et al., 2013). Among HIV-positive patients, 90% will have neuropathological involvement (Jaeger & Nath, 2012). In individuals with weakened immune systems, candidiasis can persist for long periods (Gonsu Kamga et al., 2014). By reducing their immune defenses, HIV infection exposes patients to opportunistic infections (Pavlinac et al., 2015). Some infections,

such as diarrhea remain common among people living with HIV (PLHIV) (Wieten, 2012). Hematological cancers can be encountered in patients infected with HIV (Rios, 2014). Co-infections with the Hepatitis B Virus (HBV) are encountered (Flichman et al., 2014) (Mohd Hanafiah et al., 2013). People most vulnerable to CMV are people infected with HIV and newborn babies (Viljoen et al., 2015). In the absence of treatment, HIV infection is sometimes responsible for severe malnutrition (Obajimi et al., 2008). Tuberculosis also becomes more important in cases of HIV (Noubom et al., 2013) especially associated with anemia (Kedy Koum et al., 2013) and depression (Ige & Lasebikan, 2011). The spread of the HIV epidemic has increased the magnitude of low birth weight (LBW) in Africa (Traore et al., 2013). Opportunistic infections contribute to the severity of AIDS (Coulibaly, 2006). Co-infection with the tuberculosis bacillus and HIV represents a major public health problem worldwide (Zumla et al., 2013). Especially since it is estimated that up to one-third of the world's population is latently infected with Mycobacterium tuberculosis (Lai et al., 2013). Symptoms of viral hepatitis are also increased in cases of HIV infection (Joshi et al., 2011). Two epidemiological studies provide conflicting results on HIV as a predisposing factor for Buruli (Johnson et al., 2008). HIV can promote the reactivation of latent tuberculosis infection into disease (Camara et al., 2017). Herpes Simplex Virus (HSV) is particularly prevalent among individuals infected with HIV type 1 (Rottermann et al., 2013). Cryptococcal meningitis (CNM) is the most common fungal meningitis in HIV/AIDS (Gbangba-Ngai et al., 2014). HIV is the leading cause of death in women of reproductive age (Sangho et al., 2012). In order to understand why patients continue to adopt risky behaviors that expose them to HIV, and to monitor the evolution of AIDS, we need to research the sociodemographic characteristics and behaviors of our participants, and to associate the HIV prevalence obtained with the patients' behaviors.

MATERIALS AND METHODS

The Approved Treatment Center (CTA) of General Hospital of Yaounde (HGY) served as the setting for this study. This center specializes in the fight against HIV/AIDS. It offers free screenings to all patients. It specializes in the care of people living with HIV. It supervises lower-level health facilities. The HGY is located in Cameroon, in the city of Yaounde, more precisely in the Ngousso district, west of the Yaounde Gyneco-Obstetric and Pediatric Hospital. It is a public scientific institution, with legal personality and financial autonomy. It is placed under the technical supervision of the Ministry of Public Health and the Ministry of Finance. This hospital was created in 1987 by Presidential Decree No. 87/1921 of 30th December 1987, and carried out by the Belgian-Cameroonian cooperation. It is a first-class health facility in Cameroon's health pyramid. The HGY's mission is to provide high-level medical and nursing care and to provide educational support in terms of training technical staff. Data on the sociodemographic characteristics of the participants were collected using a survey form. To ensure the confidentiality of the study, the names of the participants did not appear on the survey forms, we identified the participants with codes. Biological analyses were carried out using the Alere Determine HIV 1/2 and OraQuick HIV 1/2 tests. The results were noted on result sheets. In order to better explain the purpose of the research, an information sheet was given to each participant as well as a consent form to ensure compliance with research ethics. The CTA at HGY was well organized throughout the hospital, with several screening stations located at different locations throughout the hospital and a treatment room for positive cases. When a positive case was detected, the patient was referred to the treatment room to speak with a doctor or specialist and begin antiviral therapy. To carry out the analyses we needed sterile gloves, absorbent cotton, 95° ethyl alcohol, adhesive tape, and a basket for infectious objects. The collected data were analyzed using Epi Info, Microsoft Word and Microsoft Excel software. For the analyses we needed a computer; a USB key; and a calculator. The means obtained were compared to the 5% probability threshold.

RESULTS AND DISCUSSION

We conducted our study on a sample of 81 patients. The age range of the respondents was between 20 and 49 years. Among these patients, there were 34 men (42%) ($p<0,05$) and 47 women (58%). The male/female sex ratio was 1,4. Women outnumbered men. 76% of men and 62% of women were single. 12% of men and 23% of women were married under a monogamous regime. 2% of women were married under a polygamous regime ($p<0,00001$). 12% of men and 13% of women were living with partners. 4% of the respondents had a primary education level, 30 patients (37%) of the respondents had a secondary education level, and 48 patients (59%) of the respondents had a university education level. In our sample, 3% of the respondents were domestic workers,

1% were farmers and livestock breeders, 15% were students, 16% (p=0,00052) were public sector workers, 17% were private sector workers, and 48% were unemployed. 51% of the respondents were Catholic, 25% were Protestant, 4% were Africanists, 2% were Adventists, 6% were Pentecostals, 4% were Muslims, 1% were respectively Jehovah's Witnesses, members of the ACP church, members of revival churches, and 5% had no religion. 12% of men had sexual intercourse at less than 14 years old (p<0,0001), 18% of men and 6% of women had sexual intercourse between 14 and 15 years old, 18% of men and 13% of women had sexual intercourse between 16 and 17 years old, and 23% of men and 30% of women had their first sexual intercourse at more than 20 years old. 13 men (38%) and 6 women (13%) (p=0,16) had multiple sexual partners. Multiple sexual partnerships were higher among men than among women. In our sample, 97% of men and 57% of women reported having received HIV awareness training. However, 43% (p<0,000005) of women reported never having received HIV awareness training. Among the respondents, 32% of men reported always using condoms, 59% sometimes used condoms, and 9% never used them. On the other hand, 15% of women reported always using condoms, 66% sometimes using condoms, and 19% never using condoms (p<0,0025).

The HIV prevalence among men was 15% (p=0,3). The highest prevalence was recorded in the 35-39 age group. The prevalence was 3% (p<0,05) for the 20-24 and 30-43 age groups. The HIV prevalence among women was 4%. This prevalence was 50% for the 20-24 and 30-34 age groups. 80% of infected men were private sector workers, and 20% were unemployed. Among women, 50% of infected patients were students and 50% (p=0,5) were unemployed. 80% (p<0,00001) of infected men had a university level of education, and 20% had a secondary level of education. On the other hand, among women, 50% (p<0,05) had a university level of education and 50% a secondary level of education. In our sample, 60% of infected men and 50% (p<0,00001) of infected women were Catholic, while 40% of infected men and 50% of infected women were Protestant Christians. 80% of infected men were single, and 20% were married in a monogamous relationship. While 50% of infected women were cohabiting, and 50% were single. 40% of infected men had their first sexual intercourse before the age of 14, 20% had their first sexual intercourse between 14 and 15 years. This frequency is also found among infected men in the age groups between 16 and 17 years, and between 18 and 19 years. Among infected women, 50% had their first sexual intercourse between 16 and 17 years, and 50% had their first sexual intercourse between 18 and 19 years. 40% of infected men had multiple sexual partners at the time of the survey. In light of this table, 60% of infected men and all infected women did not have multiple sexual partners (p<0,00001). All infected men and women had been sensitized against HIV (p<0,000012). However, 20% of infected men reported always using condoms (p<0,00001), 60% sometimes used condoms, and 20% never used condoms. However, all infected women always used condoms (p<0,00001).

Our study was conducted with a sample of 81 participants, including 34 men and 47 women. The sex ratio was 1.4. The Cameroonian population is made up of a majority of women. The high presence of women in hospitals could also be explained by the various examinations that are imposed on pregnant women before giving birth. The main objective of our study was to determine the HIV status of patients who engage in risky behaviors that expose them to HIV/AIDS. Within the framework of our investigation, we can consider as risk factors: early sexual intercourse, multiple sexual partnerships, illiteracy, celibacy, unemployment, lack of awareness, and non-use of condoms. Our study found that 80% of infected men were single, a small number were polygamous. Polygamy is legal in Cameroon but is practiced less and less within families. 50% of infected women were cohabiting, and 50% were single. Single people tend to have multiple partners. Regarding multiple sexual partnerships, 40% of infected men had multiple sexual partners. Having multiple sexual partners increases the risk of interacting with an HIV-infected partner. Women aged 15 to 19 have a higher rate of multiple sexual partnerships than men. Regarding educational level, 80% of infected men had a university degree, and 20% had a secondary education. While 50% of infected women had a secondary education, and 50% had a university education. Botter education reduces the risk of HIV infection through better knowledge of the modes of transmission and prevention of the virus. All infected patients had received HIV education. The reason could be socioeconomic or sociocultural. Indeed, 20% of infected men were unemployed, and 80% were private sector workers. In contrast, 50% of infected women were students, and 50% were unemployed. The lack of employment could encourage risky behaviors among patients, such as multiple sexual partnerships or extramarital affairs. There were more single women than single men. The literacy rate among women is increasingly high, much higher in urban areas than in rural areas, and women are getting married less quickly than before. However, the majority of participants were never educated about HIV by their parents, which is reflected in the precocious

sexual intercourse found in society. Indeed, 40% of infected men had their first sexual intercourse before the age of 14, and 20% between 14 and 15. On the other hand, 50% of infected women had their first sexual intercourse between the ages of 16 and 17, and 50% between 18 and 19. Early sexual intercourse is a reality in Cameroon, with around 24% of adolescent girls starting their fertile lives between the ages of 15 and 19. Early sexual initiation increases the risk of multiple sexual partners, condom non-use, and contributes to the spread of HIV. Among those surveyed, 12% of men had sexual intercourse before the age of 14, 18% of men and 6% of women between the ages of 14 and 15, 18% of men and 13% of women between the ages of 16 and 17, and 23% of men and 30% of women over the age of 20. Regarding multiple sexual partnerships, 38% of men and 13% of women had multiple partners. However, 97% of men and 57% of women had received HIV education, 43% of women reported never having received education. Thus, among the respondents, 59% of men sometimes used condoms and 9% never did. In contrast, 66% of women sometimes used condoms and 19% never did. Condoms do not offer complete protection against HIV but are one of the means of preventing this infection.

CONCLUSION

HIV infection is common at Yaounde General Hospital. We considered as risk factors : early sexual intercourse, multiple sexual partnerships, illiteracy, celibacy, unemployment, lack of awareness, and non-use of condoms. 40% of infected men had their first sexual intercourse before the age of 14, Among infected women, 50% had their first sexual intercourse between 16 and 17 years. Several infected men had multiple sexual partners at the time of the survey. 80% of infected men were private sector workers, Among women, 50% were unemployed. Several infected men had a secondary level of education. 80% of infected men were single. While 50% of infected women were single. However, several infected men reported sometimes used condoms, and others never used condoms. Increase in free testing centers should improve the fight against HIV. It would also be possible to promote the systematic use of condoms, distribute high-quality condoms to populations, promote sexual health education in schools, improve HIV testing methods, initiate broader political and social mobilization against HIV, open free treatment centers for people living with HIV.

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