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HIV-infection and psychiatric illnesses — A double edged sword that threatens the vision of a contained epidemic The Greater Stockholm HIV Cohort Study

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Summary *Context:* The Greater Stockholm HIV Cohort Study is an initiative to provide longitudinal information regarding the health of people living with HIV.
Objective: Our aim was to explore the prevalence of HIV and its association with psychiatric co-morbidities.
Design, setting and participants: All patients with a recorded diagnosis of HIV (any position of the ICD—10 codes B20—B24) were identified during the period 2007—2014 and related to the total population in Stockholm by January 1, 2015, N = 2.21 million. The age at diagnosis, gender, and first occurrence of an HIV diagnosis was recorded. Analyses were done by age and gender. Prevalence of psychiatric co-morbidities amongst HIV patients were recorded.
Main outcome measures: Age-adjusted odds ratios with 95% confidence intervals were calculated with logistic regression for prevalent psychiatric co-morbidities in HIV infected individuals compared to the prevalence in the general population.

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Epidemiology

Results: The total prevalence of HIV was 0.16%; females 0.10% (n = 1134) and males 0.21% (n = 2448). HIV-infected people were more frequently diagnosed with psychiatric illnesses and drug abuse. In females and males with HIV-diagnosis respectively, drug dependence disorder was 7.5 (7.76% vs 1.04%) and 5.1 (10.17% vs 1.98%) times higher, psychotic disorders were 6.3 (2.65% vs 0.42%) and 2.9 (1.43% vs 0.49%) times higher, bipolar disorder was 2.5 (1.41% vs 0.57%) and 3 (1.02% vs 0.34%) times higher, depression diagnosis was 1.5 (8.47% vs 5.82%) and 3.4 (10.17% vs 2.97%) higher, trauma-related disorder was 1.5 (6.00% vs 4.10%) respectively 2.9 (4.45% vs 1.56%) times higher, anxiety disorder was 1.2 (6.88% vs 5.72%) and 2.2 (6.54% vs 2.93%) times higher than in their non-infected peers.
Conclusion: Despite effective ART, many individuals with HIV have an impaired mental health and a history of drug abuse that may threaten the vision of a contained epidemic.

Introduction

Antiretroviral therapy (ART) has gradually improved over the years, with fewer pills and simpler dosing schedules. ART today is effective and associated with less adverse effects, such as cardio-metabolic side effects.[1–3] The expanding access to ART has dramatically reduced AIDS-related illnesses and as a consequence, life expectancy for people living with HIV has markedly been extended worldwide.[4–6] In 2015 UNAIDS reported that the spread of the virus had been halted. The number of HIV-infections and AIDS-related deaths has decreased dramatically since the peak of the epidemic in the nineties. The war against HIV continues and UNAIDS has developed a "Fast-Track approach" to even diminish the numbers of infected persons by 2020, with the goal to end the AIDS epidemic by 2030.[6]

The syndemic between HIV/AIDS and several psychiatric illnesses remains an important concern worldwide. The problem is complex since each illness is affecting the other negatively: First, there is an association between serious psychiatric illness and the risk of acquiring HIV.[7] Psychiatric illness may further affect HIV-infected individuals in all stages of disease, including disclosure of HIV diagnosis through the whole process related to ART; readiness to start treatment as well as the need for life-long adherence to medication.[8,9] On the other hand there also exists an increased risk of acquiring mental problems due to the HIV-diagnosis with worries for complications and the stigma that still exists towards HIV-infected individuals.

Despite virological and immunological stability thanks to effective ART, a substantial proportion of people living with HIV have significantly lower health-related quality of life than the general population, which has been attributed to co-morbid psychiatric problems.[10–12] According to several studies, HIV-infected individuals with co-existing psychiatric illness had elevated rates of non-adherence to both ART and psychiatric medications.[13,14]

The prevalence rates of psychiatric disorders in people living with HIV has been reported to be up to 50% when symptomatic rating scales have been used.[15,16] Co-occurrence of psychiatric illnesses such as bipolar and substance abuse was associated with impulsivity, impaired judgment, and risk-taking.[17,18] In an earlier study, we reported that depression and anxiety disorders amongst people living with HIV was significantly higher compared with the general population in Stockholm County or Greater Stockholm.[2] We found however, that the somatic health (regarding cancer, diabetes and hypertension diagnoses) of people with HIV was relatively good in comparison with the general population in Stockholm.[2]

The Swedish legislation guarantees access to free ART and monitoring for all people living with HIV in Sweden. Our present study aims to provide further information on the prevalence of HIV, and on the frequency of selected psychiatric illnesses namely psychotic disorders, bipolar disorder, depression, anxiety disorder, trauma-related disorders and drug dependence disorder in HIV-infected compared to non-infected individuals and may provide tools for better HIV patient care in Sweden and worldwide. The team responsible for treating the patients can use this knowledge to be extra alert on the risks associated with co-morbidity (HIV-psychiatric illness) and take preventive actions to secure an optimal usage of ART as well as psychiatric treatment. We believe that more detailed knowledge on the described syndemic will help to further minimize the spread of HIV, thereby closing up on the WHO goal of a contained HIV epidemic.

Methods and study population

Despite the relatively low HIV prevalence of about 0.07 percent in Sweden,[2] there is a high national concern to continuously address primary-, secondary- and tertiary prevention of HIV, including for example, condom promotion, access to ART and prevention of mother-to-child transmission. Stockholm County Council established the first major HIV-clinics after the onset of the epidemic in the early 1980's and multidisciplinary teams provide care to people living with HIV. Important components of optimal HIV-care include the lead by clinicians with HIV expertise, appropriate training and experience, as well as ongoing continuing education.[19,20] Therefore the Swedish setting for HIV management is probably one of the most successful worldwide. **The Greater Stockholm HIV Cohort Study** is an initiative to provide longitudinal information regarding the health of well monitored people living with HIV compared with the general population in Stockholm County or Greater Stockholm, where more than 50 percent of all people with HIV in Sweden live.[2]

Stockholm County has about 2.2 million inhabitants and represents more than one-fifth of the entire population of Sweden. The majority of health services are provided by