Deaths due to viral hepatitis and other causes of liver disease among a large national HIV cohort, England & Wales (1997-2012)

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INTRODUCTION

Death rates among people living with HIV (PLHIV) in England & Wales (E&W) continue to decline but exceed those of the general population (1) - All-cause mortality among PLHIV was 4.5 per 1000 in 2012 – compared to 1.5 per 1000 in the general population.
- People diagnosed with HIV who inject drugs (PWID) have the highest death rate (18.4 per 1000 in 2012) - compared to 2 per 1000 among PWID without HIV (2008 data).

Cause of death is important to guide clinical guidelines and prioritise public health interventions.

The proportion of non-AIDS deaths is increasing. However determining the cause of death is challenging when HIV is complicated by viral co-infection and/or other co-morbidities. Studies suggest HIV-HBV and HIV-HCV co-infection increase the risk of mortality in the ART era (2, 3).

We investigate trends in deaths attributable to non-AIDS liver disease in a large national cohort of persons accessing HIV care, with high rates of hepatitis B virus (HBV)/hepatitis C virus (HCV) co-infection.

METHODS

National cohort of all adults (aged 15yrs and older) diagnosed between 1997-2012 and accessing HIV care in England & Wales linked to death records from the Office of National Statistics for the same period.

Underlying causes of death were categorised using an adapted Coding Causes of Death in HIV (CoDe) protocol (4), with deaths attributed to liver disease further sub-categorised.

RESULTS

Deaths among HIV-diagnosed people who inject drugs (PWID) (cause unknown)

- Almost two-thirds of liver disease deaths were due to progression or complications of viral hepatitis (39.3%, 93)
- Alcoholic liver disease contributed to approximately one-third (32.7%, 78) of liver disease deaths
- Most liver disease deaths (79%, 165/234) were among men
- Median age at death: 43.5yrs [IQR 38-50yrs], mean 44yrs (95% CI 42.7 to 45.1yrs).

Deaths due to underlying liver disease

- Median time from last attendance at an HIV clinic (n=191) to death: 23 days [IQR 0-78 days]
- Median time from last CD4 count was available (n=199), 42 and 46 had CD4<200 cells/mm^3 and 200-350 cells/mm^3 within 3 months of death.
- Among those who died of liver disease: MSM 38%, heterosexual exposure 32%, injecting drug use (IDU) 19.6%.
- Among other non-AIDS related deaths: heterosexual exposure 32%, injecting drug use 19.6%.
- Late diagnosis of HIV - Median time from HIV diagnosis to death was ~29 months for liver disease [IQR 4.4-69 months; range: 0 days to 15yr] compared with 20 months [IQR 1.5-60 months] for other non-AIDS deaths 23% (53) were HIV diagnosed within 3 months of death; 9 were late diagnoses.
- Where CD4 count was available (n=99), 42 and 46 had CD4<200 cells/mm^3 and 200-350 cells/mm^3 within 3 months of death.

Deaths among HIV-diagnosed people who inject drugs (PWID)

- Approx. 6% of all deaths were among people who acquired HIV through IDU (n=30; 64 female, 236 male) – among whom liver disease was the leading non-AIDS cause of death (15.3% of all deaths among PWID, n=6, 9 female, 236 male), in comparison, liver disease ranked 4th among non-AIDS causes of death in MSM (10.4% of non-AIDS deaths, n=89)
- Most liver disease deaths among HIV-diagnosed male IDUs were from complications of viral hepatitis (68%, 25) +/- alcohol problems.

DISCUSSION

Liver disease-related deaths among PLHIV account for one in ten non-AIDS deaths, and almost two-thirds of these (~63%) are attributed to preventable viral infections and/or alcoholic liver disease. A significant number were among persons diagnosed late.

Data from across the UK (5) suggests HIV & HCV infections continue to occur among PWID, whereas transmission of HBV seems to have declined; however, many – particularly younger - PWID report injecting practices that put them at risk of acquiring HCV and other infections - emerging patterns of increased injection of amphetamine & amphetamine-type drugs, including among sub-groups of MSM.
- injection of image and performance-enhancing drugs (IPED) e.g. anabolic steroids.

CONCLUSIONS

These findings highlight missed opportunities for HIV testing/diagnosis in patients with viral hepatitis, and regular HIV testing for persons who inject drugs (including emerging sub-groups), to ensure best clinical and public health outcome.

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REFERENCES