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## **A 25 year-old diagnosed with HIV and treated with HIV therapy can expect to live to his 60s, Danes show**

**Thomas Kristensen**, Friday, January 19, 2007

In settings where there is easy and free access to HIV medication and care, a young adult diagnosed with HIV has an estimated median survival rate of more than 35 years. However, this median survival rate is significantly lower than that of an HIV-negative person, according to a Danish study published in *Annals of Internal Medicine*. The study also found that HIV-positive individuals who were coinfecting with hepatitis C virus, and patients who were older at the time of HIV diagnosis could expect to have poorer survival than younger, hepatitis C-uninfected HIV-positive patients.

The objective of the study was to estimate survival time and age-specific mortality rates of HIV positive people and compare the estimates with that of the general population. The study included data from all HIV-positive individuals treated in Danish HIV clinics from January 1995 until May 2005.

A total of 3,990 HIV-positive individuals and 379,872 people from the general population of Denmark were included in the investigators' analysis. The study sample was taken from the Danish HIV Cohort Study and the Danish Civil Registration System. The first includes all HIV-positive people treated in Danish HIV clinics from 1995 and the latter includes all people registered as living in Denmark.

Survival among HIV positive people increased significantly during the study period. In the five-year period from 2000 to 2005, the median survival rate for HIV-positive people rose to 33 years. Survival was even better (39 years) when the investigators excluded the 16% of HIV-positive patients who were coinfecting with hepatitis C virus.

According to the investigators' estimates, an individual diagnosed with HIV aged 25 could expect to survive until they were 64, compared to 76 years of age for the HIV-negative control group.

However, the mortality rate was significantly higher amongst HIV-positive patients than their HIV-negative peers. Mortality amongst individuals with HIV was 43 per 1000 person years compared to 4.7 per 1000 years in the general population.

Mortality fell significantly amongst patients with HIV following the introduction of potent HIV therapy. A mortality rate of 124 per 1000 person years was observed in 1995-1996, but this fell to 38 per 1000 person years between 1997 and 1999 and 25 per 1000 person years in the five years after 2000.

Individuals who were coinfecting with HIV and hepatitis C had significantly higher mortality rates than patients who only had HIV (59 per 1000 versus 38 per 1000 person years between 1997 and 1999), and this difference became even more marked after 2000 (mortality rate 57 per 1000 person years versus 19 per 1000 person years).

The investigators also established that age was an important determinant of survival. Mortality amongst HIV-positive, but hepatitis C-uninfected individuals aged between 25 and 50 was 12 per 1000 person years between 2000 and 2005, increasing gradually to 54 per 1000 person years in individuals aged between 65 and 70 years.

Changes in the cause of death were observed by the investigators. The proportion of deaths related to HIV fell from 76% between 1995 and 1996 to 57% between 1997 and 1999 and to 43% between 2000 and 2005.

"We estimate a median remaining lifetime of more than 35 years for a 25-year-old, HIV-positive person without

HCV infection who receives care in the twenty-first century”, write the investigators.

However, “despite the encouraging survival expectations, the study shows large, age-dependent excess mortality in the HIV-infected cohort compared with the general population.”

Chronic HIV infection is often compared to diabetes, but when the investigators compared the mortality among patients with type 1 diabetes with mortality amongst HIV-positive individuals, they found higher mortality rates amongst people with HIV.

“Our study suggests that most young people with the HIV infection can expect to survive for more than 35 years, but an ongoing effort is still needed to further reduce mortality rates amongst infected people,” conclude the investigators.

## Reference

Lohse N et al. *Survival of persons with and without HIV infection in Denmark, 1995-2005*. *Annals of Internal Medicine*:146: 87-95, 2007.

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