Poster 526

Life Expectancy of Recently Diagnosed Asymptomatic HIV-infected Patients Approaches That of Uninfected Individuals

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Background

- Prognostic models have been developed to estimate survival probabilities of HIV-infected patients who are treated with combination antiretroviral therapy (cART).
- However, for patients who are not yet eligible for cART – current guidelines recommend treatment only when CD4 counts are less than 350 cells/mm^3 – few prognostic models are available.
- In the Netherlands, 20% of 12,258 patients currently in clinical care are not yet treated.
- We compared progression to death in this group with mortality in the general population in the Netherlands.

Methods

Study population

4612 patients (Table 1) from the ATHENA national observational cohort in the Netherlands who were

- diagnosed with HIV between 1998 and 2007.
- cART-naïve at 24 weeks after diagnosis; cART could be started after 24 weeks.

Prognostic model

- Progression to death was compared with that in the age and gender-matched uninfected general population using a multivariate hazards model.
- Treatment with cART after 24 weeks was not explicitly modelled, but was assumed to be started according to current guidelines.
- The model was applied to 4174 (90.5%) patients without AIDS at 24 weeks and without a history of injection drug use.
- The predicted survival distributions were used to calculate
  - the life expectancy of HIV-infected patients.
  - number of life years lost, i.e., the difference in life expectancy with matched uninfected individuals.

Table 2: Relative hazards (RH) and 95% confidence intervals (CI) for covariates associated with progression to death.

covariate	RH	95% CI
age at 24 weeks (per year older)	1.07	1.05-1.10
country of birth (other vs. Western countries/Sub-Saharan Africa)	4.9	2.3-10.4
CDC stage B at 24 weeks	4.9	2.1-11.5

Table 1: Characteristics of 4612 patients with an HIV diagnosis between 1998 and 2007 who were not yet treated as of 24 weeks after diagnosis.

N=4612	N / median	% / IQR
gender, male	3710	80.4
country of birth		
Western countries	2967	64.3
Sub-Saharan Africa	713	15.4
other countries	932	20.2
age at 24 weeks (years)		
<35	2084	45.1
35-50	2027	43.9
>50	501	10.8
CD4 at 24 weeks (cells/mm^3)	480	360-650
disease stage at 24 weeks		
asymptomatic	4168	90.4
CDC-B	259	5.6
CDC-C / AIDS	185	4.0
follow-up (years)	3.3	1.6-5.8

IQR: inter-quartile range

Results

Mortality

- 118 cases of death; 35 expected in a group of age- and gender-matched non-infected individuals
- 17,580 person-years of follow-up
- mortality rate 6.7 (95% confidence interval 5.5-8.0) per 100 person-years

Prognostic model

- Covariates associated with faster progression to death (Table 2):
  - older age at 24 weeks
  - country of birth other than Western countries or Sub-Saharan Africa
  - CDC stage B at 24 weeks
- CD4 counts at 24 weeks were not associated with prognosis, probably because more than 75% had CD4 counts >350 cells/mm^3 and increments above this threshold are only associated with minor improvement in prognosis.

Figure 1: The expected median number of remaining life years from age 25 was 53.1 (IQR 44.9-59.5) years for the general population (dotted line) and 52.7 (44.2-59.3) years for asymptomatic HIV-infected patients (solid line).

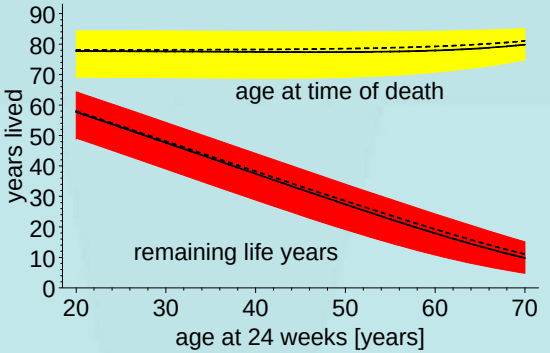
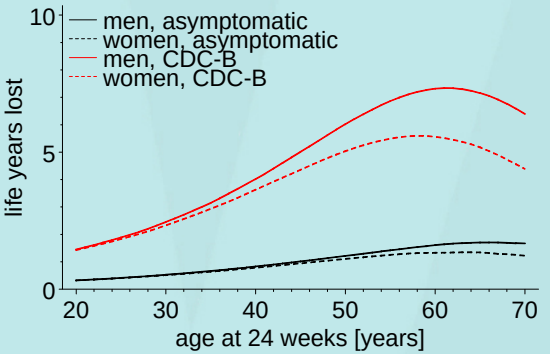


Figure 2: The expected number of life years lost increased from 0.4 years if diagnosed at age 25 to 1.3 at age 55 for men. The number of life years lost was larger for female patients and for patients with a CDC-B event at 24 weeks.



Conclusions & discussion

- The life expectancy of asymptomatic HIV-infected patients who are still treatment-naïve and have not experienced a CDC-B or C event at 24 weeks after diagnosis approaches that of age and gender-matched uninfected individuals.
- However, follow-up time was short compared to the expected number of years lived.
- Predictions depend on continuing success of cART well after the maximum follow-up time.