

# P241 Hepatitis C virus reinfection after viral clearance of HCV among HIV-positive patients with recent HCV infection in Taiwan

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## Background

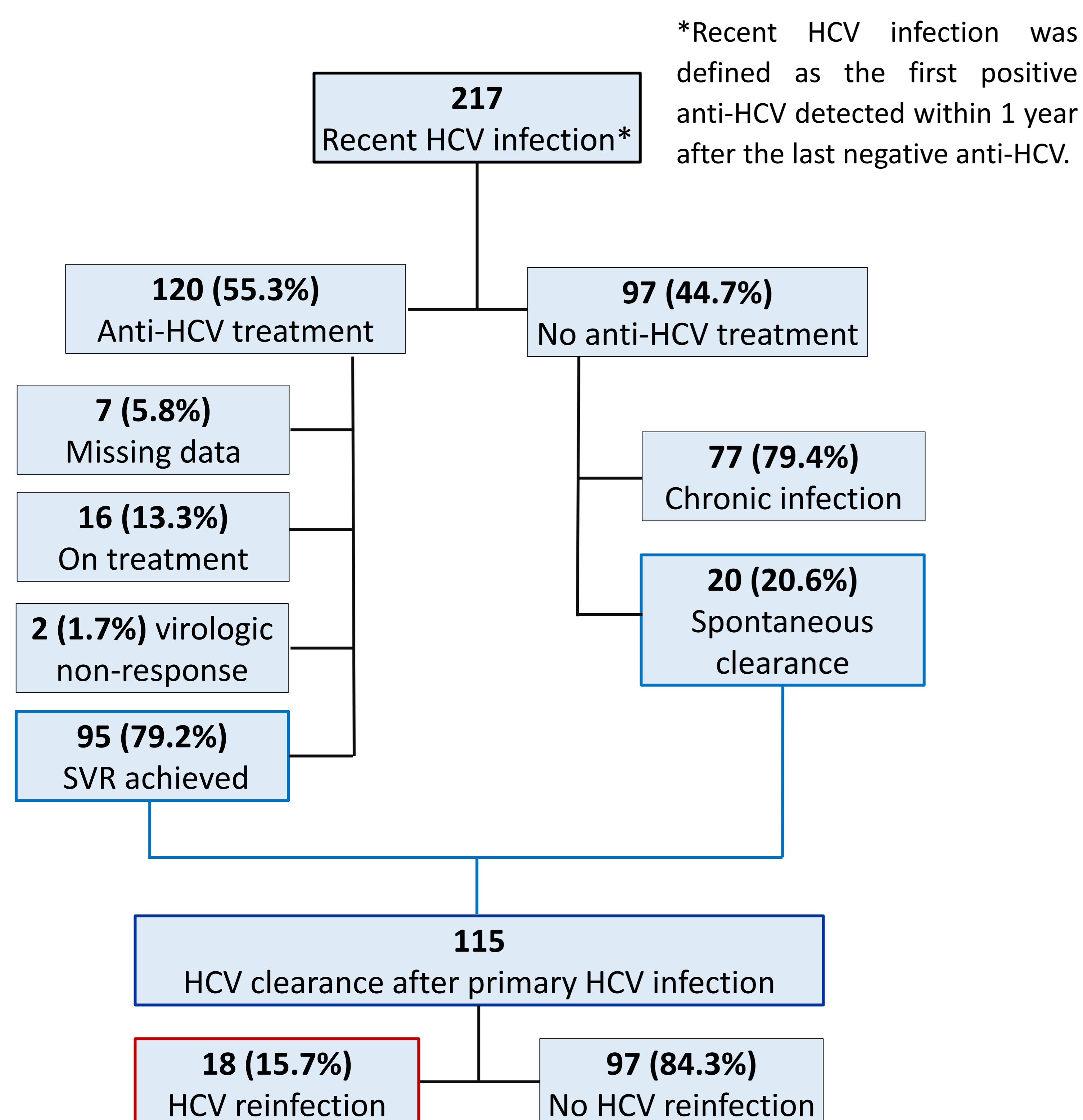
A high rate of hepatitis C virus (HCV) reinfection after either spontaneous or therapeutically induced viral clearance has been well described among HIV-positive men who have sex with men (MSM) in Europe. However, whether the high rate of HCV reinfection also occurs in the Asia-Pacific region remains unknown.

Given the observation that a higher incidence of HCV reinfection in patients with recent HCV infection than those with chronic infection and the concerns about onward HCV transmission if left undiagnosed, this study aimed to assess the incidence rate of HCV reinfection after HCV viral clearance, to identify the factors associated with HCV reinfection, and to examine different testing strategies for timely diagnosis of HCV reinfection among HIV-positive Taiwanese patients with recent HCV infection.

## Materials and Methods

Among HIV-positive patients with negative baseline anti-HCV antibody who sought medical care at the National Taiwan University Hospital between 1 January 2011 and 31 March 2018, we retrospectively collected data on those with recent HCV infection, and patients were followed until death, loss to follow-up, or 30 September 2018, whichever occurred first. HCV reinfection was defined as recurrence of HCV viremia after achievement of sustained virologic response (SVR) with anti-HCV treatment or after spontaneous clearance.

**Figure 1. Flow diagram of patients included in the study**



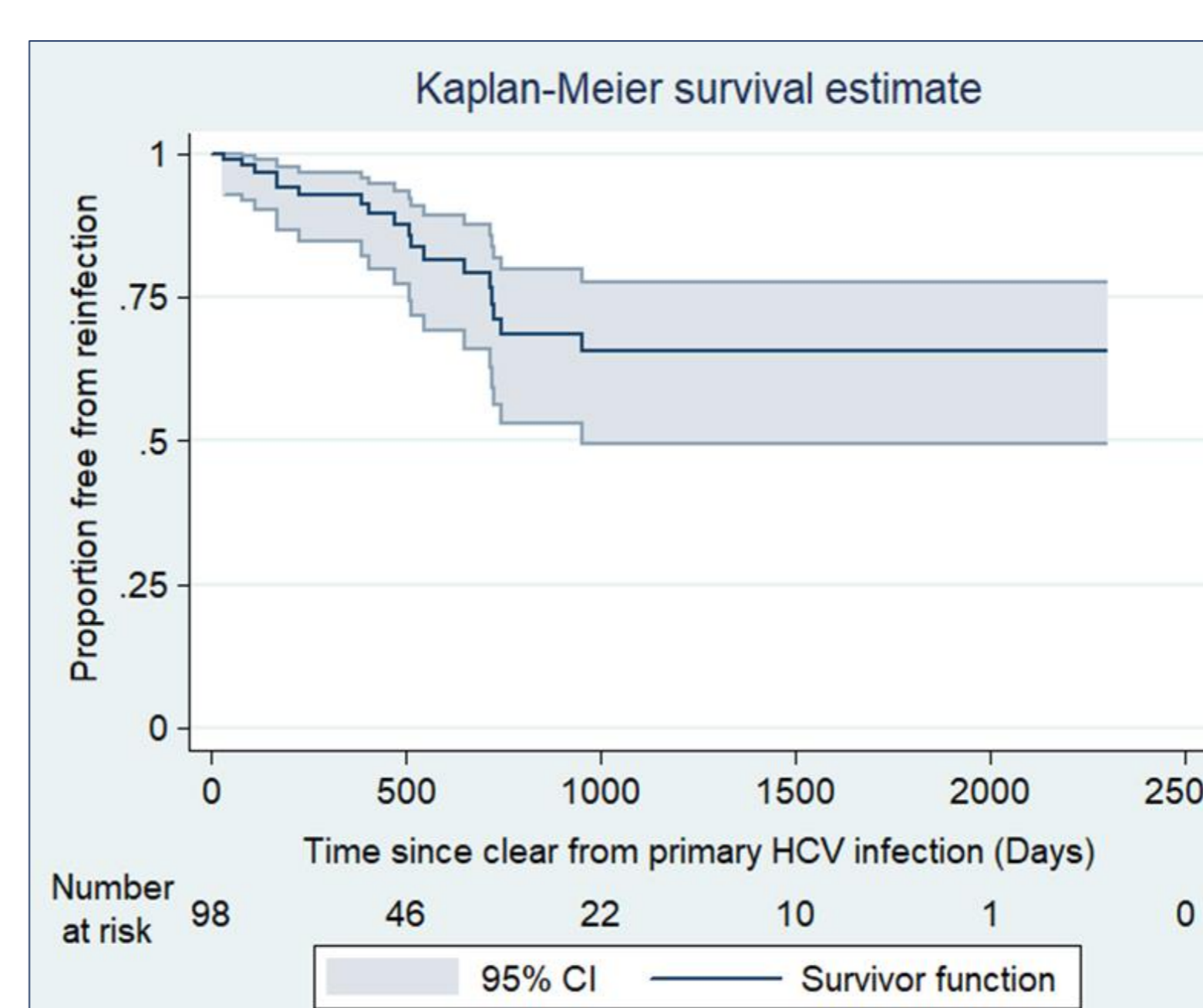
## Results

- In the 8-year study period, 217 (90.8% MSM) HIV-positive patients with a diagnosis of recent HCV infection were included. Among the 120 patients who received anti-HCV treatment, 95 (79.2%) achieved SVR. Of the remaining 97 patients who did not receive anti-HCV treatment, chronic infection developed in 77 (79.4%) and spontaneous clearance in 20 (20.6%).
- Among the 115 patients who cleared their primary HCV infection, including 95 with successful treatment and 20 with spontaneous clearance, 18 acquired HCV reinfection, resulting an overall incidence rate of 8.22 per 100 PYFU. The median time to reinfection was 490 days (IQR, 203–713) after the primary HCV clearance. Compared with patients without HCV reinfection, those with reinfection were more likely to have syphilis (94.4% vs 50.0%,  $p < 0.001$ ).
- Regular follow-up using HCV RNA measurements detected all cases of HCV reinfection, but HCV testing performed following a diagnosis of syphilis and elevated aminotransferases only detected 45% and 65% of the cases, respectively.

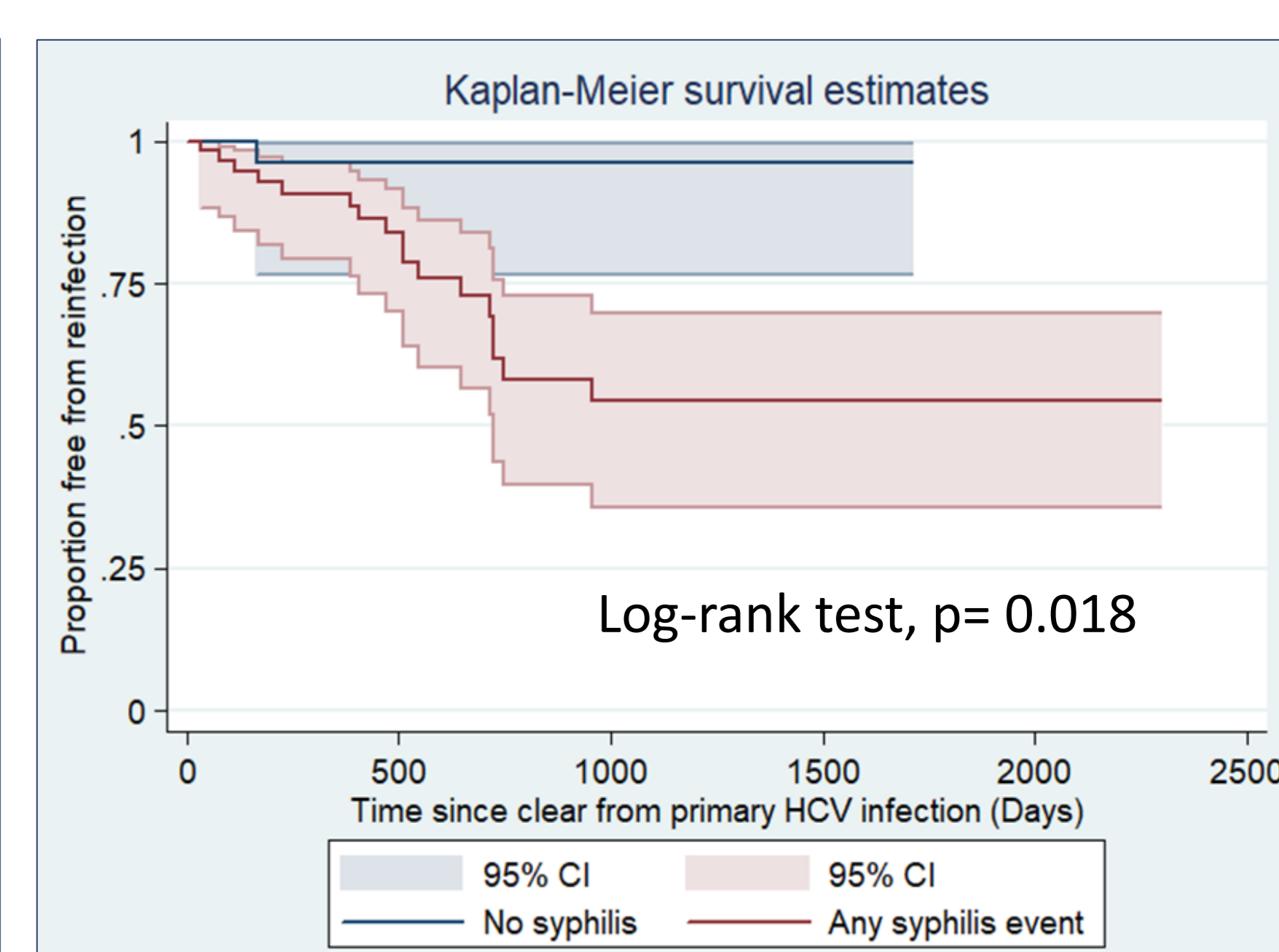
**Table 1. Comparisons of characteristics between HIV-positive patients with and without HCV reinfection after clearance of recent HCV infection**

Characteristics	Reinfection N=18	No reinfection N=97	P value
Age, median (IQR), years	29.0 (25.0-36.6)	33.7 (28.7-39.1)	0.05
Male sex, n (%)	18 (100)	96 (100)	-
MSM, n (%)	18 (100)	88 (91.7)	0.35
HIV RNA load <200 cp/mL, n (%)	15 (83.3)	82 (85.4)	0.73
On ART, n (%)	17 (94.4)	90 (93.8)	1.0
HBsAg-positive, n (%)	3 (16.7)	12/95 (12.6)	0.71
Syphilis, n (%)	17 (94.4)	44/88 (50.0)	<0.001
Follow-up duration, median (IQR), y	4.93 (2.24-6.90)	3.05 (1.82-4.84)	0.06

**Figure 2. Kaplan-Meier estimate of overall survival free from HCV reinfection after the clearance of primary HCV infection**



**Figure 3. Kaplan-Meier estimate of survival free from HCV reinfection among patients with and without syphilis**



## Conclusions

Similar to the findings in Europe, we observed a high incidence rate of HCV reinfection among HIV-positive Taiwanese patients with recent HCV infection, which was significantly associated with syphilis. To identify recent HCV reinfection, annual HCV RNA testing should be instituted instead of testing driven by symptoms, syphilis, or elevated aminotransferases.