Similar Short-term Outcomes with Same-day ART Initiation vs Rapid ART Initiation

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Yi-Chia Huang[1], Shu-Hsing Cheng[2], Chia-Jui Yang[3], Hsin-Yun Sun[4], Po-Liang Lu[5], Chun-Eng Liu[6], Yuan-Ti Lee[7], Chin-Shiang Tsai[8], Nan-Yao Lee[8], Bo-Huang Liou[9], Hung-Jen Tang[10], Chen-Hsiang Lee[11], Chi-Ying Lin[12], Chien-Ching Hung[5]
[1]National Taiwan University Hospital Hsin-Chu Branch, Hsin-Chu, Taiwan, [2]Taoyuan General Hospital, Taoyuan, Taiwan, [3]Far Eastern Memorial Hospital, New Taipei, Taiwan, [4]National Taiwan University Hospital, Taipei, Taiwan, [5]Kaohsiung Medical University Hospital, Kaohsiung, Taiwan [6]Changhua Christian Hospital, Changhua, Taiwan, [7]Chung Shan Medical University Hospital, Taichung, Taiwan, [8]National Cheng Kung University Hospital, Tainan, Taiwan, [9]Hsinchu Mackay Memorial Hospital, Hsin-Chu, Taiwan, [10]Chi Mei Medical Center, Tainan, Taiwan, [11]Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan, [12]National Taiwan University Hospital Yun-Lin Branch, Yun-Lin, Taiwan

BACKGROUND

- Taiwan CDC has implemented rapid ART initiation program (ART initiation within 7 days of confirmed HIV diagnosis) to improve HIV care continuum since 2018.
- In 2020-2021, same-day ART initiation was implemented with the introduction of immunochromatographic testing to expedite the confirmation of HIV infection.
- This study aimed to evaluate the short-term outcomes with same-day ART initiation vs rapid ART initiation.

METHODS

- Between 2018 and 2021, medical records of newly diagnosed people living with HIV (PLWH) were reviewed to collect the information on the dates of HIV diagnosis, ART initiation, and loss to follow-up; and sexually transmitted infections (STIs), plasma HIV RNA load (PVL) and CD4 count at diagnosis and during follow-up.
- All patients were followed for 48 weeks after ART initiation. Same-day and rapid ART initiation were defined as ART initiation within 1 day vs 2-7 days of confirmed HIV diagnosis, respectively.
- Definition of outcomes:
  - The primary outcome was the proportion of patients failing to engage in care at Week 48.
  - The secondary outcomes were the proportion of PVL <200 copies/ml at Weeks 4, 24 and 48, and occurrences of STIs before Week 48.

Figure 2. Proportion of same-day and rapid ART initiation (2018-2021)

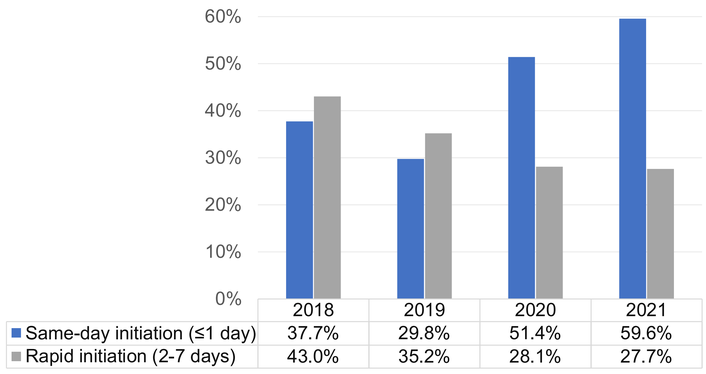


Table 2. Outcomes of same-day vs rapid ART initiation (2018-2021)

	Same-day initiation n=438	Rapid initiation (Excluding same-day) n=353	p-value
Primary outcomes			
Death, n (%)			
Death after 8 weeks	8 (1.8)	2 (0.6)	0.199
Transfer, n (%)	24 (5.5)	11 (3.1)	0.120
Loss to follow-up, n (%)	12 (2.7)	12 (3.4)	0.678
Retention in care at the same hospital, n (%)	393 (89.7)	326 (92.4)	0.216
Virologic failure, n (%)	1 (0.2)	2 (0.6)	0.589
Secondary outcomes			
Retention in care with viral suppression, <200 copies/μl			
Week 4, n (%)	294/408 (72.1)	237/331 (71.6)	0.891
Week 28	275/292 (94.2)	247/258 (95.7)	0.601
Week 48	235/240 (97.9)	233/239 (97.5)	0.772
Time from diagnosis to viral suppression, median (IQR), days			
<200 copies/μl	32 (28-84)	34 (32-87)	0.205
<50 copies/μl	84 (29-119)	87 (33-123)	0.558
Sexually transmitted infections			
Any STI, n (%)	40 (9.1)	38 (10.8)	0.383
Any STI before suppression, n (%)	5 (1.1)	6 (1.7)	0.553

Figure 1a. Locations of participating hospitals

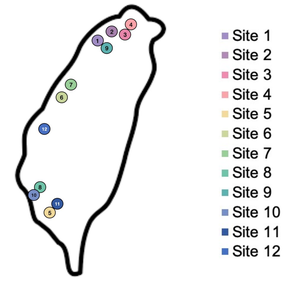
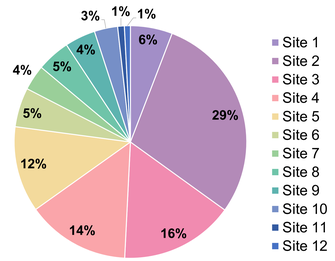


Figure 1b. Proportion of participants from each hospital



RESULTS

- 1079 people newly diagnosed with HIV infection were included at 13 designated hospitals (Figure 1) during the study period. The clinical characteristics of included PLWH are shown in Table 1. Their mean age was 31.9 (SD 9.3) years, 91.2% were GBMSM, 39.5% had CD4 counts <200 cells/mm^3 and 47.8% had plasma HIV RNA >5 $\log_{10}$ copies/ml.
- Overall, 791 (73.3%) PLWH initiated ART within 7 days of HIV diagnosis: 438 (40.6%) on the same day and 353 (32.7%) within 2-7 days of diagnosis. The proportion of same-day and rapid ART initiation during 2018 to 2021 were shown in Figure 2.
- The outcomes of participants are shown in Table 2. Before Week 48, 10 (0.9%) PLWH died and 24 (2.2%) were lost to follow-up. Before Week 48, the rates of loss to follow-up were 2.7% and 3.4% for PLWH in the same-day ART initiation and rapid ART initiation group, respectively (p=0.678) (Table 2).
- The proportions of viral suppression of PLWH having undergone plasma HIV RNA testing were 72.1%, 94.2% and 97.9% at Weeks 4, 24 and 48, respectively, for PLWH who initiated ART on the same day of HIV diagnosis, compared to 71.6%, 95.7% and 97.5%, respectively, for those who initiated ART within 2-7 days of diagnosis (p=0. 891, 0.601, and 0.772, respectively).

Table 1. Characteristics of included people living with HIV (PLWH)

	Same-day initiation n=438	Rapid initiation (Excluding same-day) n=353	p-value
Age, mean (SD), years	32.0 (8.9)	31.5 (8.8)	0.446
Male, n (%)	401 (91.6)	352 (92.3)	0.311
Baseline CD4 count, median (IQR), cells/mm^3	256 (102-412)	272 (133-418)	0.421
Baseline CD4 count <200 cells/mm^3, n (%)	172 (39.8)	123 (35.0)	0.171
Baseline plasma HIV RNA, >5 $\log_{10}$ copies/μl, n (%)	210 (48.2)	169 (48.0)	0.966
HBsAg, n (%)	34 (8.3)	13 (4.8)	0.012
Anti-HCV-positive, n (%)	24 (5.9)	22 (6.4)	0.939

RESULTS

- The proportions of STI diagnosed before Week 48 were similar between the two groups (p=0.383).
- The proportions of STI diagnosed before viral suppression was achieved were similarly low in both groups (1.1% vs 1.7%, p=.553) (Table 2).

CONCLUSIONS

- Our study demonstrates a similarly low rate of loss to follow-up in PLWH who initiated ART on the same day or within 2-7 days of confirmed HIV diagnosis in Taiwan.
- ART initiation on the same day of HIV diagnosis achieved a similar rate of viral suppression to ART initiation within 2-7 days of diagnosis.

ADDITIONAL KEY INFORMATION

Author Contact Information:
Yi-Chia Huang, G11160@hch.gov.tw
Chien-Ching Hung, hcc0401@ntu.edu.tw

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