Strategies to minimize time from HIV acquisition to cART initiation in a cohort of individuals with acute/recent HIV infection in Barcelona.

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TOLEDO
10 A 13 DE DICIEMBRE DE 2019

Background/Objectives

Establishing a cohort of HIV acute/recent infection

- ⬇⬇ Link-to-care to HIV Units
  Rapid treatment initiation
- ⬇⬇ Time to UD.

Retention in care

Platform of candidates for HIV cure trials.

Community center for MSM Health, HIV & STI testing

140-170 new HIV diagnoses/year

Represent **51%** new cases in MSM in BCN.

PoC Technology (GeneExpert for NAT)

BCN checkpoint

MSM
3 monthly testing

Education program on identification of acute infection

Positive

Xpert® HIV-1 Qual (PCR)

Negative
But suspected

Xpert® HIV-1 Qual (PCR)

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Positive

Run WB same day and Link to HIV Unit (<48h)

Negative

Repeat in 7days if persists high suspicion of acute infection

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BSL samples, ELISA; WB, VL, CD4, Genotype, HLAB27→ same day / early cART

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Methods

Early_cART Cohort (2013 Q4-2018 Q4)

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Suspected Acute/Early HIV
n=325

Excluded:
Not confirmed (n=48)
False HIV positive (n=7)

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Confirmed Acute/Early HIV
n=270

Withdraw IC (n=3)
Do not start cART/Discontinue cART(n=13)
Moved to another hospital (n=23)
Not pre_cART samples (n=3)
LOFU for >1.5 yrs (n=12)
Others (n=2)

Retained in-care & on_cART
n=214

Year	Follow-up
1st, 2nd	3months
3rd	6months
4th and on	12 months

Study variables:

- ✓Demographic data
- ✓**Estimated date of HIV acquisition**
- ✓Time from acquisition to start treatment (to be <6m)
- ✓Fiebig stage at cART initiation
- ✓Link-to-care
- ✓Retention-in-care

To estimate date of HIV-1 acquisition

Fiebig

0- Know exposure			**0**
1- Documented Acute Retroviral Syndrome	I	7-21d	15
2- 4th gen test with Agp24 pos & Ab neg	II	18-24d	21
3- ELISA pos with WBlot neg.	III	21-25d	23
4- WBlot incomplete (<2 envelope bands)	IV	21-29d	25
5- Wblot minus p31 (confirms<90 days infection)	V	30-90d	60
6- Negative serology- positive (<6months apart)	VI	<6m	Middle point

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Results

98%

34 (±9) years old

95.5% (258)

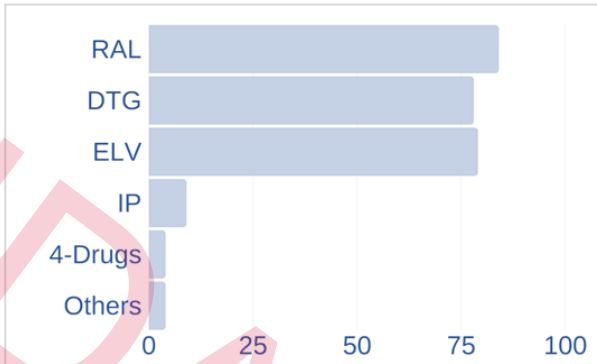
Spanish 57% (154)

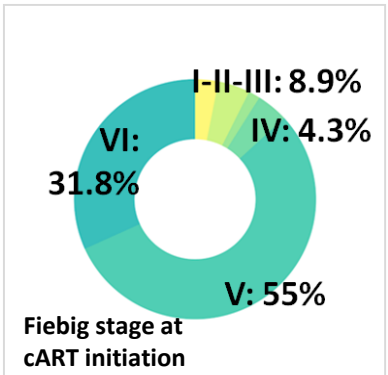
CD4 : 508cels/ml

CD8 : 1003 cels/ml

Ratio: 0.64 (ds 0.41)

pVL 1.335.685 cp/ml





Implementation of Cohort → Universal cART + PrEP

Early HIV infection diagnosis (n=270)

Total new diagnosis

2013	2014	2015	2016	2017	2018
13 (Q4)	44 (32%) / 136	61 (41%) / 149	61 (44%) / 139	50 (34%) / 147	41 (32%) / 130

Median time in link-to-care (range):

Mann-Whitney *p=0.001*

10 (1-35) → 6 (0-20)

Median time from HIV to cART (range):

Mann-Whitney *p=0.0329*

68 (15 - 131) | 69 (6 - 169) | 61 (12 - 162) | 53 (12 - 152) | 46 (17 - 162)

Progressive reduction in time to viral suppression

Retained in-care & on_cART n=214

- *<1 yr*: **38**
- *>1 yr*: **45**
- *>2yrs*: **46**
- *>3yrs*: **45**
- *>4yrs*:**27**
- *>5yrs*: **12**

Conclusions

- Acute/early infections were confirmed in one third of new HIV diagnoses in a community center.

→ Standardize and increase the diagnosis of Acute/Recent HIV infection in BCN by using / enhancing already existing resources

- Reduction in referral time to HIV units after diagnosis translated into a shorter time with detectable HIV viraemia in early stages of HIV infection.

→Reduce 'community' pVL → transmission to others

90-90-90
An ambitious treatment target to help end the AIDS epidemic

-Provides **a platform of potential candidates** to be enrolled in cure strategies trials.

- Allows storage of biological samples longitudinally, before and after cART initiation, permitting viral & immunopathogenesis studies.

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Viral Reservoir kinetics in early_cART. Meta-HIV [a].

n≈ 70

ARBRE (Impact of AntiRetroviral Therapy on BRain OutcomEs)
BCN01[b]
BCN02
AELIX002
Therapeutic vaccine clinical trials

(a)Noguera J, Ebiomedicine 2016.
(b) Mothe B, EClinicalMedicine, 2019.