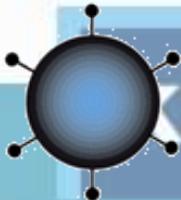


Best Posters Contest

12 Posters

- 2 Basic Science
- 4 Clinical Science
- 6 Social Science



Comparing latency profiles of HIV-1 and HIV-2.

BEST POSTER

Introduction

HIV-2 is a less pathogenic relative to HIV-1. It circulates mainly in a discrete zoonotic transmission cycle between humans and non-human primates. In contrast to HIV-1, HIV-2 has remained undetected in most of Sub-Saharan Africa. Infection with HIV-2 results in a milder course with lower viraemia and lower viral loads. In a number of countries with similar infection rates (IDS 85-90%) patients are in long-term non-progressive disease. This has not been explained by the fact that HIV-2 is a more efficient chaperone, this has not been clarified either. Therefore, it is of interest to compare the latency profiles of both HIV subtypes.

Methods

On day 0, we infected SupT1 cells with single-round, HIV-1 and HIV-2 based, VSF-G pseudotyped reporter viruses containing eGFP in the nef position. Cells were washed on day 3 post-infection and reactivated with 10 ng/ml tumor necrosis factor alpha (TNFa) or left untreated on day 0. Samples were analyzed after reactivation via flow-cytometry (FC) for eGFP expression and viral p24 protein levels in cell culture supernatant. Additionally we determined copy number by qPCR. In total, 6 experiments were performed and all experiments were performed in duplicate. 3-4 virus dilutions were tested each experiment. HIV-1 and HIV-2 vector were titrated with anti-viral nucleic acid testing agents (TU) as coplanar (CC), both based on previous titration experiments.

a) HIV-1

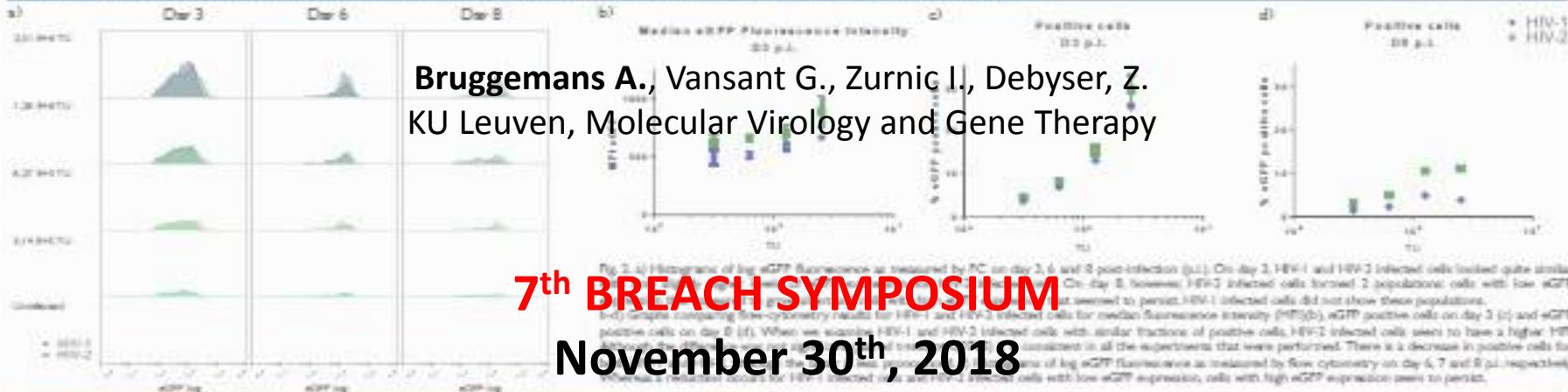


Fig 1. a) HIV-1 and HIV-2 infection of SupT1 cells. b) Experimental timeline.

Basic Science

“ COMPARING LATENCY PROFILES OF HIV-1 AND HIV-2 ”

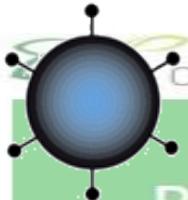
I. HIV-1 and HIV-2 infected cells show different patterns of eGFP expression and silencing. HIV-2 infected cells reach higher levels of eGFP expression and HIV-2 infected cells with high eGFP intensity seem to silence less.



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November 30th, 2018

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3. Upon reactivation, mostly HIV-2 infected cells seem to reactivate slower than HIV-1 expression are reactivated, whereas reactivation of HIV-1 infected cells.



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healthy all life



Data from the national HIV surveillance, Belgium, 2016-17

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1. Sciensano, Brussels • 2. Institute of Tropical Medicine, Antwerp • 3. Universiteit Gent, Ghent • 4. Université Libre de Bruxelles, Bruxelles • 5. Vrije Universiteit Brussel, Sint-Pieterslaan, Bruxelles • 6. Universitair Ziekenhuis Brussel, Universitair Ziekenhuis Brussel • 7. CHU de Liège, Liège • 8. Universiteit Leuven, Leuven • 9. Université catholique de Louvain, Louvain

Introduction

Early diagnosis of HIV infection is essential in order to permit rapid initiation of care and treatment, and a shift toward HIV-positive physicians might help to diversify the pathways to testing and analysis aims to gain a better insight in the specialization of physicians diagnosing HIV infection in Belgium.

Results

Specializations of diagnosing physicians

The SSN was available for 1611 (90%) patients diagnosed with HIV in 2016-2017. Half of the cases were diagnosed by GPs, followed by internists and obstetricians/gynecologists (Table 1).

Table 1. Distribution of specializations of physicians performing HIV diagnoses in 2016-2017.

Physician specialization	2016, N (%)	2017, N (%)	Total, N (%)
GP	406 (54%)	426 (49%)	832 (52%)
Internal medicine	210 (28%)	253 (29%)	463 (29%)
Gynecology - Obstetric	49 (7%)	56 (7%)	105 (7%)
Acute medicine - emergency	22 (3%)	30 (3%)	52 (3%)
Surgery - anaesthesiology	22 (3%)	36 (4%)	57 (4%)
Psychiatry - neurology	12 (2%)	—	12 (2%)
Dermatology	9 (1%)	—	9 (1%)
Pediatrics	5 (1%)	10 (1%)	15 (1%)
Other	15 (2%)	33 (4%)	48 (3%)

In 2016-2017, 757 179 HIV tests were performed by GPs (mainly around half of the number of tests performed by other specialists). After missing data, the ratio of patients newly diagnosed by GPs was 1.3 per 1000 tests performed. In comparison, the ratio was higher among specialists in acute medicine/emergency medicine (1.8 per 1000 tests) and lower among obstetrician/gynecologists (0.8 per 1000 tests) and other physicians (0.5 per 1000 tests).

Number of new diagnoses by tests performed

Van Beckhoven D., Fransen K., Verhofstede C., Delforge ML., Van Den Wijngaert S., Pierard D., Hayette MP., Van Ranst M., Dessilly G., Apers H., Loos J., Sasse A., Deblonde J.

Figure 1. Proportion of tests performed and ratio of number of diagnoses per 1000 tests performed, by grouped specializations, Belgium, 2016-17.



Methodology

Since 2016, the Belgian National HIV/AIDS Surveillance System (SSN) has been collecting information on the distribution of physicians diagnosing HIV infection in Belgium. The SSN includes data on the number of new HIV diagnoses, the number of tests performed, the gender and age of the patients, the place of residence and the specialization of the physician. The SSN also includes information on the number of tests performed by laboratories and the number of new diagnoses by laboratories.

Diagnoses of key populations

The distribution of grouped specializations of diagnosing physicians by key newly diagnosed populations is illustrated in figure 2. Figure 2 shows the distribution of physicians by key population, 2016-17.



Conclusions

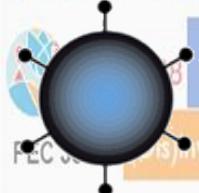
Early diagnosis of infected people requires a strategic mix of testing facilities. In Belgium, the majority of healthcare providers involved in HIV testing are GPs. Around half of the patients diagnosed with HIV are diagnosed by GPs. Decentralization of HIV testing to non-medical settings is in line with WHO recommendations. However, the distribution of newly diagnosed patients by GP specialization suggests that some groups are more diagnosed by specialists. This suggests the existence of underlying barriers to HIV testing for these populations by GPs. These might be present at the level of the access to GP, as well as at the level of testing proposal (patient or provider initiated). Improving GPs' skills on sexual health, prevention and treatment of HIV epidemic and of indicator management might contribute to lower those barriers.

This analysis does not inform on testing outside healthcare settings with rapid

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Quantifying the Impact of Reduced Investments in Integrated HIV Care Delivery In Belgium
BELGIAN RESEARCH AIDS&HIV CONSORTIUM

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Context and objectives

In Belgium, AIDS Reference Centers (ARC) deliver patient-centered, integrated HIV care leveraging state-of-the-art knowledge and expertise to provide multidisciplinary patient management.

We developed an integrated care-centered framework^a to help drive value-driven financing approaches. The quantification of ARC value drivers is a key framework component. The present study quantifies the impact of disinvestments in ARC.

Methods

We leveraged the published BELHIVPREV model^b to assess the health and budget impact of reduced investments in ARC for

5 of the 10 key value drivers identified in the ARC value framework:

- 1 Prevent new infections
- 2 Reduce the number of undiagnosed
- 3 Link to care: visiting a healthcare provider after a positive diagnosis
- 4 Retain in care: having viral load measured at least once per year
- 5 Achieve and maintain virological control: viral load < 200 copies/ml
- 6 Support quality of life
- 7 Manage and reduce comorbidities
- 8 Maintain sexual and reproductive health
- 9 Perform data collection
- 10 Drive and execute research

Included in our analysis

^aSee poster/abstract PED566 – A framework for value-based financing of integrated care for persons living with HIV

^bDetailed model description in Vermeersch et al. Acta Clin Belg 73 (1), 54-67

We simulated 4 scenario's for 2020, which were further extrapolated to 2030: (i) current effort; (ii) reduced effort; (iii) additional effort; (iv)

additional effort + reinforced outreach.

	Current effort	Reduced effort	Additional effort	Reinforced outreach
Undiagnosed	11%	12%	10%	8%
Treated	94%	92%	97%	97%
Viral load < 200 c/ml	95%	94%	98%	98%
Linked to care	98,2%	95%	95%	95%
Retained in care	97,9%	97%	99%	99%
P-EP (patient)	1.500	1.000	2.623	2.622

Model scenarios were based on hypothetical yet realistic current estimated parameter settings.

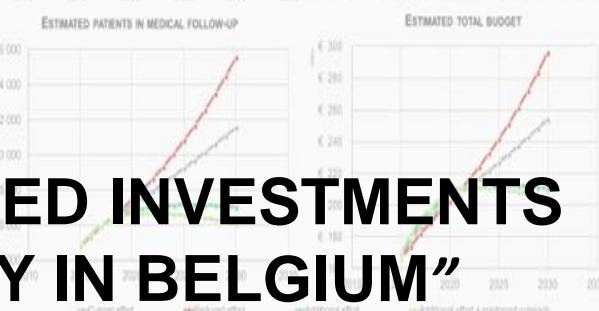
Cumulative costs were generated from 2015 to 2030 and assumed:

1.3M€/year investment (+60% of total Belgian ARC costs) in the 'additional effort' scenario.

2,2M€/year disinvestment (-43% of total Belgian ARC costs) in the 'reduced effort' scenario.

For the 'additional' and 'reduced' effort scenarios the ROI was calculated as the ratio of (cumulative budget impact – cumulative investment cost) over (cumulative investment cost).

Results



	Current effort	Reduced effort	Additional effort	Reinforced outreach	Return on Investment	Cost of Non-Investment
New diagnoses 2020 (patients)	899	1.121	603	513	+2,4	-4,0
Annual budget 2020 (euro)	203 ME	202 ME	207 ME	209 ME		
Annual budget 2030 (euro)	254 ME	296 ME	211 ME	204 ME		

Every € invested results in 2,4 saved by 2030

Every € saved results in 4,0 lost by 2030

Conclusions

Investing in integrated care remains critical in managing HIV disease and budget impact. Reducing ARC budgets leads to significant and lasting impact on the epidemic and healthcare budget expenditure.

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