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P94 Budget impact analysis of introducing the new single-tablet regimen rilpivirine/emtricitabine/tenofovir for the treatment of HIV in Portugal
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P95 Budget impact analysis of switch to darunavir/ritonavir monotherapy in Greece
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P97 Cost-effectiveness of atazanavir + ritonavir (ATV+RTV) vs. lopinavir/ritonavir (LPV/r) in women of childbearing age in the United Kingdom
Simpson, K; Kirbach, S; Van de Steen, O*; Gooch, K (Brussels, Belgium)

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Cost of Switching Darunavir-Ritonavir (DRV+RTV) to Lopinavir/ritonavir (LPV/r) in HIV-1-infected Treatment-naive Women of Child-bearing Age (WOCBA)

Jörgen Möller1, Kamal Desai1, Kit Simpson2, Robert W Baran3, Olivier Van de Steen4, Birgitta Dietz5, Katherine Gooch6


**BACKGROUND**

To determine the DRV break-even price, at which cumulated treatment and health care costs would be equal for LPV/r and DRV+RTV.

**OBJECTIVES**

- To simulate the effect of switching from DRV+RTV to LPV/r in terms of clinical outcomes, costs, and effectiveness.
- To assess the impact of changing DRV+RTV treatment on the overall cost-effectiveness of antiretroviral therapy.
- To determine the potential cost savings associated with switching from DRV+RTV to LPV/r.

**METHODS**

**MODEL OVERVIEW**

- A previously published discrete event simulation DES model comparing LPV/r to DRV+RTV in treatment-naive HIV-positive WOCBA from a US healthcare payer perspective.
- The model includes parameters for ARV treatment effectiveness and health care costs associated with side effects, non-adherence, pregnancy, etc.
- The model assumes the possibility of only one pregnancy for each woman, as there is no risk of data on treatment response and patient behavior after multiple pregnancies.
- It is assumed that concern for the unborn child induces improved adherence to treatment and this is modelled for all future treatment regimens, even after the child is born.

**METHODS—MODEL SPECIFICATIONS**

**Model Assumptions**

- Pregnancy rates by age and baseline CD4+ count and viral load of WOCBA are given in Table 1.
- The model assumes the possibility of only one pregnancy for each woman.
- As with data on treatment response and patient behavior after multiple pregnancies.
- It is assumed that concern for the unborn child induces improved adherence to treatment and this is modelled for all future treatment regimens, even after the child is born.
- The WOCBA model (Figure 1) simulates the individual's journey through available ARV treatment options.
- The model includes parameters for ARV treatment effectiveness, health care costs, and health outcomes.
- The WOCBA model (Figure 1) simulates the individual's journey through available ARV treatment options.

**RESULTS**

- **Costs**
  - **Direct medical costs** associated with ARV drugs, non-ARV drugs, opportunistic infection prophylactic treatments, routine medical care, and treatment for AIDS-related side effects were included.
  - **Indirect costs** were not considered.

- **Costs and Model Parameters**
  - Direct medical costs associated with ARV drugs, non-ARV drugs, opportunistic infection prophylactic treatments, routine medical care, and treatment for AIDS-related side effects were included.
  - Indirect costs were not considered.
  - All costs and health outcomes were discounted at 3% per annum.
  - Clinical and epidemiological inputs and costs associated with other ARV regimens, routine care, concomitant medications, AIDS events, and side effects were described elsewhere.

- **Limitations**
  - The three clouds of points represent incremental costs and QALYs at 10 years for the different scenarios for DRV switch rates (Figure 3).
  - Four alternative scenarios were considered in order to assess the importance of different assumptions about baseline characteristics, treatment sequence, patient subgroups, rates of non-serious side effects, disutilities, and utility values.

- **Probabilistic sensitivity analysis (PSA)**: All unit costs were log-normally distributed, and ARV drug costs were held fixed. Baseline adherence was varied using a Beta distribution for the proportion of subjects having moderate adherence (75% in the base case).

- The unit cost of DRV was also varied while fixing all other model parameters to determine the DRV break-even price of the price of DRV at which all cumulated health care costs of 10 years would be equal for both arms.

- **Cost-effectiveness analysis**
  - The model's predictions may rely on available data on treatment efficacy from clinical trials; these are translated to clinical outcomes by means of predictive equations.
  - Data to inform these equations and model parameters related to natural history of diseases are not specific for WOCBA.

- **Conclusions**
  - Initiating ARV therapy in WOCBA with LPV/r instead of DRV+RTV results in cost savings at both the 5-year and 10-year horizons, with clinical outcomes for the two treatment approaches being similar at that timepoints.
  - LPV/r remain cost-saving across multiple sensitivity analyses, indicating that the base case findings are robust.

**REFERENCES**


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Cost-efficiency analysis of darunavir/r monotherapy in clinical practice

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Introduction

- Monet study [DRV/r monotherapy (mx) vs DRV/r triple therapy] cost-efficiency analysis has demonstrated a lower cost for DRV/r mx and would allow more patients to be treated for a fixed budget (1).
- To date good virological results have been obtained in clinical practice (2)

Objective

- To evaluate the economic impact of a switching strategy to DRV/r mx in clinical practice using Spanish Prices.

Methods

- Multicenter retrospective study of four tertiary hospitals in Spain.
- The analysis includes 147 patients switching to DRV/r mx mainly due to toxicity or simplification from March 2009 to June 2011. Censoring data June 2012. The Spanish costs (ex-factory price + VAT) per patient with HIV RNA < 50 copies/ml were calculated, accounting for additional/switch antiretroviral taken after initial treatment failure and management of adverse events.
- Cost of adverse events was based on a Spanish publication (1) (updated by the inflation rate until April 2012). All adverse events were considered moderate.
- Cost of acquisition, per success, incremental cost efficacy ratio (ICER) and Hospital Budget Impact were calculated.
- The horizon of the analysis was of 48 weeks before and after switching to DRV/r mx.

Results

- DRV/r monotherapy demonstrated to be no inferior to standard TARGA treatment (86% HIV-RNA<1,57 ITT analysis) and a cost-effective strategy in the population analyzed. If a hospital with 600 patients in ARV treatment, switched from 10% to 20% of its patients to DRV/r monotherapy, there is a potential to save up to 331 thousands €/year.

Conclusions

- Switching to DRV/r monotherapy is a cost-effective strategy that allows more patients to be treated for a fixed budget in different scenarios in the clinical practice.
- Higher cost saving is expected when toxicity is the reason for switching.

References

Cost-efficacy of European AIDS Clinical Society recommended initial antiretroviral regimens for treatment of HIV infection in Portugal

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Introduction/Objectives:
In a context of limited resources and growing needs, informed choices have become crucial to ensure that maximum health benefits are attained from available resources. Treatment guidelines are based on efficacy and safety clinical data, as well as expert opinions, and do not reflect economic considerations. Treatment guidelines however should be also a first step in the search for an efficient use of resources. Within the set of guidelines recommended antiretroviral regimens, economic evaluation - a joint analysis of clinical and economic considerations - may then be undertaken in order to provide information on the “value for money” of each treatment option.

The aim of the present analysis was thus to complement the information provided by the EACS (v6) guidelines [1] regarding recommended initial treatment for HIV-1 infected individuals. The approach followed was a cost-efficacy analysis of initial ART regimens, which allows for the grading of recommended regimens according to the direct cost to the National Healthcare Service per suppressed patient (HIV RNA<50 copies/mL) at 48 weeks.

This endpoint is relevant because viral suppression is associated with both individual and public health benefits [2].

Materials and methods:
• The methodology used was the one described in Blasco et al. 2011 [3] but adapted to Portugal in terms of (i) resource prices, (ii) resource utilization upon ART initiation, regimen switch and treatment of adverse events, and (iii) subsequent regimen selection according to the initial regimen and the reason for switch.

• A decision tree model was built (Figure 1) with a 48 weeks horizon. Once patients initiate ART they either fail in the initial regimen or not if they do not, they either die or switch due to unscheduled failure, pregnancy, adverse event, last to follow-up or lack of adherence. When switching in a new ART regimen is initiated and assumed to last for the remaining of the 48 weeks.

• Efficacy and safety were drawn from clinical trials satisfying the following criteria: being a randomized clinical trial published in a journal, including at least one of the 30 regimen under consideration, providing data on the HIV RNA<50 copies/mL, ITT (or NCI-follow-up), adverse events, discontinuations and last to follow-up, at 48 weeks.

• Antiretroviral drug costs were taken from IMSS Health in the Dec 2011-Feb 2012 period. Where no price was available, generic drugs were considered.

• The perspective of the analysis is that of the National Healthcare Service, considering only direct costs (that is, costs that are incurred independently of the initial regimen) and excluding all other direct costs (such as costs of counseling, professional fees, pregnancy, adverse event, last to follow-up or lack of adherence). When switching in a new ART regimen is initiated and assumed to last for the remaining of the 48 weeks.

• Estimates of resource utilization and the selection of the subsequent regimen were based on an expert panel.

• Unit values for inpatient and outpatient diagnostic and therapeutic procedures were taken from the National fee schedule (Portaria n° 132/2009, Ministério da Saúde, 2009).

• Other drug costs were obtained from the NHS/ACSS or the hospitals catalogue (values paid by the State for health in the Dec 2011-Feb 2012 period. When no price was available, generic drugs were considered. In line with the results obtained in the Spanish cost-efficacy analysis of Grupo de Estudio Español de VIH/SIDA (GEEVICA) [4], the present analysis indicates that a regimen containing TDF/FTC and EFV (also available as a single tablet regimen) ranks third, ABC/TDF/EFV ranks second and TDF/FTC/EFV (also available as a single tablet regimen) ranks first, indicating that this is the regimen yielding the lowest cost per suppressed patient of 48 weeks.

• Among regimens containing boosted protease inhibitors, RAL+TDF/FTC is the regimen with the lowest cost/efficacy ratio and TDF/FTC/ATV/r had the highest ratio.

Conclusion
In line with the results obtained in the Spanish cost-efficacy analysis of Grupo de Estudio Nacional de Sida (GESIDA) recommended regimens [1] and in the Italian cost-efficacy analysis of Italian guidelines recommended regimens [5], the present analysis indicates that a regimen containing TDF/FTC and EFV (also available as a single tablet regimen) is the initial ART regimen with the lowest cost per suppressed patient at 48 weeks in Portugal.

Sensitivity analysis
In order to test the robustness of the findings, a sensitivity deterministic analysis was conducted building two scenarios for each regimen (most favorable and least favorable) with the following differences with respect to the base case:

• Most favorable scenario: 12% lower costs and 10% higher efficacy, re-scaled to the upper limit of the 95% CI for the proportion of suppressed patients of 48 weeks.

• Least favorable scenario: 15% higher costs and 10% lower efficacy, re-scaled to the lower bound of the 95% CI for the proportion of suppressed patients of 48 weeks.

In this analysis, efficacy ranged from 66% with ABC/TDF/EFV to 85% for TDF/FTC/ATV/r, indicating that this is the regimen yielding the lowest cost per suppressed patient of 48 weeks.

Results: Figure 5: Regimen grading according to initial regimen cost, total 48 weeks cost and cost-efficacy, at 48 weeks

In the present analysis, cost ranged from 10,800 € to 15,200 € for the total cost of ART/CoT at 48 weeks. The most favorable scenario yields the lowest cost, with a range from 10,800 € to 11,000 €, while the least favorable scenario yields the highest cost, with a range from 14,000 € to 15,000 €. The cost per suppressed patient ranges from 11,000 € to 11,200 € for the most favorable scenario and from 13,000 € to 15,000 € for the least favorable scenario.

Conclusion
In line with the results obtained in the Spanish cost-efficacy analysis of Grupo de Estudio Nacional de Sida (GESIDA) recommended regimens [1] and in the Italian cost-efficacy analysis of Italian guidelines recommended regimens [5], the present analysis indicates that a regimen containing TDF/FTC and EFV (also available as a single tablet regimen) is the initial ART regimen with the lowest cost per suppressed patient at 48 weeks in Portugal.

Limitations
The present study is based on efficacy data from clinical trials and that may not reflect regimen effectiveness obtained in clinical practice during routine care. Clinical trial data are drawn from different trials with no meta-analysis adjustment. Antiretroviral drug costs are average prices at the national level, and as such the results are not necessarily valid of every single hospital where differential discounts may occur. This analysis does not consider patients preferences or the impact on their quality of life.

References

Figure 2: % with HIV RNA<50 cps/mL at 48 weeks

Figure 3: % switching off the initial regimen (any reason)

Figure 4: 48 weeks cost per initial regimen

Figure 5: Regimen grading according to initial regimen cost, total 48 weeks cost and cost-efficacy, at 48 weeks

Figure 6: Cost per suppressed patient at 48 weeks, by initial ART regimen

Figure 7: Cost per suppressed patient at 48 weeks in the base, most favorable and least favorable scenarios

Disclaimer: This analysis was financed by Gilead Sciences.
Budget impact analysis of introducing a new single tablet regimen rilpivirine/emtricitabine/tenofovir for the treatment of HIV in Portugal

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P094

Purpose

A new single tablet regimen (STR) with rilpivirine/emtricitabine/tenofovir (RPV/FTC/TDF), Eviplera®, has been approved for the initial treatment of HIV-1 infection. The aim of this study was to estimate the impact on the State Budget of the introduction in the Portuguese Health System (PHS) of this new STR using secondary data from official statistics and observational studies.

Data

- The stock and flow data of total HIV-1 patients comes from official statistics of the National Committee for HIV/AIDS. Estimates from an observational study also provide 1) the probability that a patient on a regimen of a given third agent class switches ART and 2) the probability distribution for the new third agent class choices given that the patient has switched (Table 2).

Methodology

- The analysis considers a time frame of three years, does not include mortality, assumes a constant flow of new patients, and deals only with antiretroviral therapy (ART) costs. Values are not discounted. The study is done from State’s perspective.

Model

- An Excel® Model, initially developed by Gilead Sciences, was adapted for use in Portugal. The model starts with recent historical data on market shares of different ART drugs used for the treatment of naive patients (Table 1). Two scenarios are considered, 1) RPV/FTC/TDF not available in the market (current), and 2) RPV/FTC/TDF is available in the market (alternative). The market shares, together with price information, allow us to estimate the weighted average costs per ART class and from there, the weighted average annual cost of treatment per patient per year (Table 1).

Results

- The penetration of the new STR is quantified based on the percentage of naive patients who currently can’t but may, once RPV/FTC/TDF is available, avoid initiation with PI-based regimens. In particular, it is estimated that 4% of naive patients avoid NNRTI based regimens due to teratogenic effects, 8% due to central nervous systems effects and 8.8% due to possible interactions with methadone. Using these data, and considering that events are not mutually exclusive, we estimate that 19% of the patients can be treated with Eviplera®.

Conclusions

- The introduction of the new STR RPV/FTC/TDF into the PHS will lead to cost savings in the resources spent on the anti-retroviral therapy of HIV-1. Savings equal €0.42 million in the first year. Eviplera® represents €2.31 million savings for the PHS, in the three year time horizon of this analysis.

Acknowledgements

We thank the support of Gilead Sciences.

References

In virologically suppressed patients with no history of virological failure, switching to DRV/r monotherapy maintains HIV RNA suppression, and could also lower treatment costs. There is strong pressure to lower the costs of antiretroviral treatment in Greece, for three main reasons:

1. Annual budgets for the National Health Service are restricted
2. The number of people living with HIV in Greece is rising each year
3. International treatment guidelines are recommending the initiation of treatment, which then increases the number of people on long-term therapy

The cost of DRV/r monotherapy in Greece is low (see Figure below):

**Annual Greek Costs of Antiretroviral Combinations**

### Methods

#### Design of the MONET trial

In the MONET trial, 256 patients with HIV RNA <50 copies/mL on current HAART for over 24 weeks and no prior virological failure, switched to DRV/r 800/100 mg once daily, either as monotherapy (n=127) or with 2NRTIs (n=129). The duration of randomised treatment was 144 weeks.

Patients who showed elevations in HIV RNA in either treatment arm could intensify with NRTIs or re-start their previous treatment. The cost of DRV/r monotherapy in Greece is low (see Figure below):

**Background**

The Week 144 safety and efficacy results of the MONET Trial have been published (Arribas et al. HIV Medicine 2012, 13: 398-405).

The two figures below show summary efficacy, based on the primary ITT Switch Equals Failure endpoint, and the Switch Included endpoint, where intensifications with NRTIs were not counted as treatment failure.

In the ITT switch included analysis, HIV RNA <50 copies/mL by Week 144 was 83.5% in the DRV/r monotherapy arm versus 82.2% in the triple therapy arm. No patients in either arm developed phenotypic resistance to DRV.

Before the trial, the mean annual cost of antiretrovirals was €5,625 for patients on NNRTI based HAART, and €6,935 for patients on PI based HAART.

During the trial, the mean per-patient cost in the monotherapy arm would be €4,514 in the MONET trial (including the cost of intensification with NRTIs where needed): this annual cost of antiretrovirals was €1,111 (20%) lower than NNRTI based treatment, and €2,421 (35%) lower than PI based treatment taken before the trial, respectively.

According to the local expert panel feedback 5,230 people are treated with antiretrovirals in Greece (40% NNRTI based, 60% PI based) and 20% of patients (n=1,046) are eligible for PI monotherapy.

Based on the MONET results, a switch to DRV/r monotherapy in 20% of patients could reduce the three-year cost of antiretroviral treatment for these patients, from €20.11 million to €14.26 million.

**Results**

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In the MONET trial, the percentage of patients with HIV RNA suppression <50 copies/mL was similar in the DRV/r monotherapy arm (86%) and the DRV/r + 2NRTIs arm (84%) (ITT switch included analysis).

Based on the MONET trial results, if the 1,046 eligible patients were to switch to PI monotherapy the lower cost of DRV/r monotherapy versus triple therapy in Greece would allow a potential saving of up to 6 million Euros over three years, while maintaining HIV RNA suppression below 50 copies/mL.

Ongoing randomised trials (PROTEA, PIVOT) are evaluating the long-term efficacy of PI monotherapy.

**Conclusions**

Background

Methods

Results

Conclusions

**Background**

In virologically suppressed patients with no history of virological failure, switching to DRV/r monotherapy maintains HIV RNA suppression, and could also lower treatment costs.

There is strong pressure to lower the costs of antiretroviral treatment in Greece, for three main reasons:

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Patients who showed elevations in HIV RNA in either treatment arm could intensify with NRTIs or re-start their previous treatment.

**Economic analysis**

We first calculated the cost of antiretrovirals taken before the trial (either NNRTI based or PI based HAART).

Then the costs of antiretrovirals in the two arms of the MONET trial were calculated, using a "switch included" analysis at Week 144, to account for additional antiretrovirals taken after initial loss of undetectability.

Published Greek hospital prices of antiretrovirals were used in this analysis.

**Budget impact analysis**

Data from a local expert panel were used to estimate the number of patients currently receiving NNRTI versus PI based treatment in Greece, and the number of patients eligible for DRV/r monotherapy.

In the budget impact analysis, we assumed that 20% of the 5,230 patients on antiretrovirals in Greece would have HIV RNA <50 copies/mL, and no history of virological failure (i.e. similar to the inclusion criteria for the MONET trial). We then calculated the cost of keeping these patients on current HAART, versus a switch to DRV/r monotherapy.

**In the MONET trial, the percentage of patients with HIV RNA suppression <50 copies/mL was similar in the DRV/r monotherapy arm (86%) and the DRV/r + 2NRTIs arm (84%) (ITT switch included analysis).**

Based on the MONET trial results, if the 1,046 eligible patients were to switch to PI monotherapy the lower cost of DRV/r monotherapy versus triple therapy in Greece would allow a potential saving of up to 6 million Euros over three years, while maintaining HIV RNA suppression below 50 copies/mL.

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Based on the MONET results, a switch to DRV/r monotherapy in 20% of patients could reduce the three-year cost of antiretroviral treatment for these patients, from €20.11 million to €14.26 million.
Cost Effectiveness of Atazanavir + Ritonavir (ATV+RTV) vs. Lopinavir/ritonavir (LPV/r) in Women of Childbearing age in the United Kingdom

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BACKGROUND
In the UK, an increasing proportion of individuals infected with HIV are women of childbearing age (WOCBA).

OBJECTIVE
To perform a lifetime cost-effectiveness analysis of second-line protease inhibitor based regimens for HIV-infected, ARV-naive WOCBA in the UK, LPV/r versus ATV+RTV.

METHODS: MARKOV MODEL STRUCTURE
A modified version of a previously published Markov model was adapted for this comparison (Figure 1, Table 1).

METHODS: POPULATION MODEL
Model parameters regarding disease baseline severity, treatment efficacy, and change in TC levels after 48 weeks of therapy were derived from the CASTLE study.

RESULTS
These results illustrate the importance of considering gender differences as well as the interaction between HIV-related and cardiovascular risk factors in the choice of antiretroviral drugs.

CONCLUSIONS
These results warrant consideration as selecting LPV/r over ATV+RTV may provide an opportunity for improving access to ARV for WOCBA living with HIV in the UK.

REFERENCES
Cost-effectiveness evaluation of initial HAART regimens for managing HIV-infected patients according to real clinical practice

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AIM OF THE STUDY

We evaluated the single tablet regimen (STR) vs Multi-Pills Regimen (MPR) strategies through an incremental cost-effectiveness analysis in a large cohort of patients starting their first HAART.

MODEL STRUCTURE

METHODS

Adult HIV-1 naive patients, followed at the S. Raffaele Scientific Institute, starting their first line regimen from June 2008 to April 2012 were included in the study.

First line HAART regimens more frequently used (>10%) were grouped into two classes as follows:

- a) Single Tablet Regimen (STR) of TDF/FTC/EFV,
- b) Multi-Pills Regimen (MPR) including: TDF/FTC/ATV/r, TDF/FTC/DRV/r, TDF/FTC/LPV/r

As “persistent” we considered the patient doesn’t change the initially assigned therapy.

Costs were being considered independently from treatment change. The incremental cost-effectiveness analysis was carried out by means of a Markov model calculating Quality of Life and costs for each patient, according to the given regimen (including any subsequent switch if occurred), through 1 year cycles.

The outcome measure was Quality Adjusted Life Years (QALY’s). Data were analyzed from the point of view of the Lombardy Regional Health Service (RHS): HAART, hospitalizations, visits, examinations and other concomitant non HAART drugs costs were evaluated, price variations included.

At multivariable analysis, the generalized linear model was used to identify the predictive factors of the overall cost/effectiveness of the first line HAART regimens.

RESULTS

We included in this study 474 patients whose characteristics at the start of their first-line regimen are described in Table 1. Immunological and virological trends after the start of the antiretroviral therapy and independently from switch, are shown in Figure 2: after 12and 24 months since the start of HAART, 93%, 94% of MPR patients and 89%, 91% of STR patients had an HIV-RNA<50 copies/mL. Similar CD4+ recovery in the first-line regimen are described in Table 1. Baseline characteristics of the 474 antiretroviral naïve HIV-1 infected patients analyzed from the point of view of the Lombardy Regional Health Service (RHS): HAART, hospitalizations, visits, examinations and other concomitant

CONCLUSIONS

Starting with a first line Single Tablet Regimen compared to Multi-Pills Regimen resulted cost-effective showing lower costs and better efficacy as measured by QALY’s.

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A MULTIFACTORIAL RISK SCORE TO WEIGH TOXICITIES AND CO-MORBIDITIES RELATIVE TO COSTS OF ANTIRETROVIRALS IN A COHORT OF HIV-INFECTED PATIENTS

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Purpose of the study

HIV suppression on plasma is now obtained in the vast majority of treated patients at our sites; a major problem is therefore represented by the appropriate management of overall toxicities of HAART regimens, possibly limiting their tolerability in the long run. Furthermore, taking into consideration costs of antiretrovirals (ARV) for HIV patients is increasingly mandatory. A simple and comprehensive tool weighing comorbidities and ARV-related toxicities could be useful to compare different ARV regimens and to evaluate toxicity not included in the calculation of the MFRS. In the revised final models of linear logistic regression for the present cross-sectional analysis (Table 5), costs of ARVs in naive patients were independently predicted by most of the variables related with ARV toxicity not included in the calculation of the MFRS. In the revised final models of linear logistic regression for the present cross-sectional analysis (Table 5), costs of ARVs in the individual patients were not predictive of higher toxicity scores, being tightly and independently related with line of antiretrovirals and gains of CD4 T-cells (not shown).

Methods

HIV patients were consecutively enrolled in 2010-2011. We considered socio-demographic characteristics, HIV history, cardiovascular risk factors, low energy fractures, bone density. Psychological factors were assessed by BDI, DS14 and TAS-20. The MFRS was calculated as the sum of single partial scores assigned to each patient according to his specific comorbidities and toxicities, as shown in Table 1 and Table 2. The maximum possible score was 100. Annual costs of individual ARV regimens were calculated based on pharmacy records as of December, 2011. MFRS was evaluated in univariate and multivariate models. All statistical analyses were carried out using Stata 10.1.

Results

We enrolled 241 HIV patients, 74.3% males; mean age was 44.5±9.9 years; 19 patients (7.8%) were untreated, 74.8% of treated patients had undetectable HIV RNA at the time of enrollment. Mean Nadir CD4 counts were 218±168 cells/mm^3; 38.5% of patients had an AIDS diagnosis. Mean individual ARV annual cost was €10,976±5,360. Mean MFRS was 28.5±13.9 (4-64) (see Table 3). MFRS was significantly higher (p<0.001) in patients with older age, longer duration of HIV infection, lower CD4 Nadir, AIDS diagnosis, lipodystrophy, HCV, smoking, lower education, alcohol/drug abuse, hypertension, carotid plaques, higher Framingham scores, diabetes, bone fractures or disorders, depression, alexithymia, and higher ARV costs (see Figure 1 and Table 4). Higher scores of MFRS were independently predicted by most of the variables related with ARV toxicity not included in the calculation of the MFRS. In the revised final models of linear logistic regression for the present cross-sectional analysis (Table 5), costs of ARVs in the individual patients were not predictive of higher toxicity scores, being tightly and independently related with line of antiretrovirals and gains of CD4 T-cells (not shown).
A survey of patients’ willingness to switch from a single tablet regimen (STR) to 2 pills once a day as a cost-saving strategy

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Introduction

With the patent on efavirenz due to expire a potential cost saving strategy is to switch HIV-infected patients who are stable on Atripla® (tenofovir, emtricitabine & efavirenz) to a regimen of 2 pills once a day of generic efavirenz and co-formulated tenofovir & emtricitabine (Truvada®). We assessed patients’ willingness to switch from an STR to 2 pills once a day and whether it would be perceived to affect adherence to their antiretroviral (ARV) regimen and quality of life (QOL).

Method

Patients who had been taking Atripla® for at least 3 months were asked to anonymously complete a questionnaire detailing if they were taking other medicines, the total number of pills they took daily and how many times a day they took them. They were asked about their willingness to switch for cost saving reasons and whether they perceived their adherence and QOL would change if they were to switch to 2 pills once a day. The questions were assessed using visual analogue scales measuring 100mm. Univariate and multivariable logistic regression models were employed to determine statistical difference.

Results

143 patients completed the questionnaires. Mean age was 42.3 years and 121 (85%) were male. 57 (40%) were taking other regular medicines and 125 (88%) took their pills once a day. Patients’ willingness to switch scored a median of 2 (0=not willing at all, 5=neutral, 10=very willing). Perceived change in adherence and QOL both scored a median of 5 (0=considerably worse, 5=stay the same, 10=better). No significant associations were found between patients’ willingness to switch and age, gender, in those taking other regular medicines and in those taking their pills twice or more times a day [See Figure 1].

Willingness to switch was significantly less likely in those who perceived poorer adherence (RR 0.20, p<0.001) and reduced QOL (RR 0.16, p<0.001) [see Figure 2]. This association, when adjusted for age and gender, remained significant in our multivariable analysis.

Figure 1: Plot of univariate logistic regression model showing patients’ willingness to switch from 1 pill once a day to 2 pills once a day

In those already taking other regular medications (in addition to Atripla®, N=57) a significant association was found between increased willingness to switch and increasing number of pills taken daily (p=0.037) [see Figure 3].

Figure 2: Plot of multivariable logistic regression models showing significant independent predictors of patients’ willingness to switch to 2 pills once a day

Conclusion

Adherence is key to viral load suppression and hence treatment success. What is essentially a lifelong treatment should maintain or even improve QOL. These are critical factors to consider if switching strategies are to be implemented to reduce drug expenditure as strategies which would potentially lead to poorer adherence could result in treatment failure and counteractively increase drug costs by necessitating the use of more expensive 2nd or 3rd line ARVs. It is therefore important to ensure patient involvement and address patient concerns in such strategies.

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Loss To Follow Up Within A HIV Cohort
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**BACKGROUND**
BHIVA guidelines recommend that all ARV naive and stable on treatment patients are monitored at least 6 monthly. Studies have shown that loss to follow up (LFU) not only worsens outcomes but has increased potential for onward transmission.

**AIMS**
To evaluate LFU within the HIV patient cohort in our centre.
To characterise those at increased risk of LFU.
To encourage reengagement of patients with HIV services.

**METHOD**
Case notes of 1275 HIV patients registered under our care up to January 2012 were reviewed for attendance within the previous 6 months. Reasons for non attendance were identified. Those with a local GP and registered current address were sent recall letters. Failure to respond led to subsequent letters inviting them to clinic and finally a GP letter informing them of LFU.
The following details: sex, age, ethnicity, number of years under care for HIV, ARV use and occupation of those LFU were recorded.

**CONCLUSION**
Our data demonstrates a particularly mobile group of patients, 36% transferring care to another unit. In our HIV cohort, 17% of patients were LFU.
LFU patients were more likely to be Black African (76%) and recently diagnosed (53%).
A positive outcome was achieved in that a small number of patients reengaged with care and this led to new diagnoses as a result of partner notification. This highlights the ongoing problem of retention of care in this group.
A new recall system was implemented in September 2011 using Lillie Electronic Patient Records to promptly recognise when a patient has not attended.
In view of the disproportionate number of patients disengaging with care, HIV units should provide additional support and vigilance with robust recall systems, which may be easier to implement with increasing use of EPR.
Further exploration is needed to identify additional issues besides housing and immigration that lead to LFU.

**RESULTS**

**Reasons for non attendance**
- Deceased
- Transferred care to another HIV clinic
- Moved out of the UK
- Lost to follow up: no means to contact
- Lost to follow up: eligible for recall

**Demographics of LFU group n=129**
- **Sex**
  - 46% Male
  - 54% Female
- **Average age at LFU**
  - 34 (range 20 – 65)
- **Ethnicity**
  - 76% Black African
- **Marital Status**
  - 51% Single
  - 23% Married
- **Occupation**
  - 32% Semi skilled/unskilled
  - 26% Unemployed
- **ARV use at time of LFU**
  - 48% on ARV
  - 45% not on ARV

**Number of Years in Care Prior to LFU**

**REFERENCES**