



EMTRICITABINE AND TENOFOVIR DISOPROXIL FUMARATE IN HIV-NAIVE PATIENT: A PHARMACOECONOMIC STUDY



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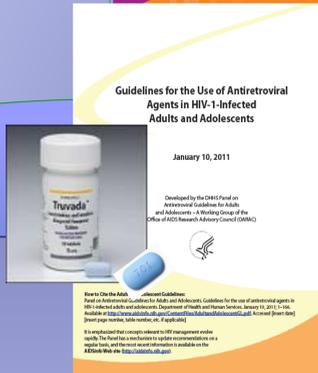
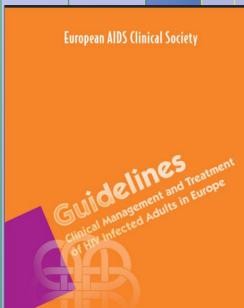
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BACKGROUND AND PURPOSE

Truvada[®], an antiretroviral (emtricitabine and tenofovir disoproxil fumarate) indicated for HIV-1, was the 12th most expensive drug prescribed in Piedmont during 2009-2010, with a growth of 12%. Since July 2011 the Hospital Pharmacy School of Turin has developed a two-year pharmacoeconomic project regarding high cost drugs. This study aimed to provide to the decision maker a management tools for the evaluation of HIV treated patients costs.

MATERIALS AND METHODS

Legislation, epidemiology and pharmacoeconomy journal articles were reviewed. For the evaluation of the pharmacoeconomic articles it has been followed the Weighted Drummond's Checklist method. A Budget Impact model, based only on the drug costs, has been built. The naive population (290) has been extrapolated from the incidence data in Piedmont in 2010. The treatment options were relied on the U.S.DHHS guidelines and on the pharmacoeconomic studies.



La Torre Method with score applied at Drummond's checklist

Table 1: Drummond's checklist weighting - random score for each item by different experts

Item	Checklist Item	Checklist Weight	Random Score	Final Score
1	The research question is stated	4	4	16
2	The economic importance of the research question is stated	3	3.5	10.5
3	The objectives of the analysis are clearly stated and justified	4	4	16
4	The rationale for choosing the alternative programs or interventions compared is stated	4	4	16
5	The alternatives being compared are clearly described	4	3.5	14
6	The form of economic evaluation used is stated	4	3.5	14
7	The choice of form of economic evaluation is justified in relation to the question addressed	3	3	9
Total 100				

Table 2: Quality assessment results, according to Drummond's checklist

STUDY	STUDY DESIGN	DATA COLLECTION	ANALYSIS AND INTERPRETATION OF RESULTS	FINAL SCORE	TOTAL RELATIVE SCORE *
STUDIO 1 De la Rosa 2008	22	30	38	90	75,6
STUDIO 2 Pavesi et al 2009	26	28	41	95	79,8
STUDIO 3 Brognini et al 2010	26	28	40	94	79,0
STUDIO 4 Pavesi et al 2010	26	31	45	102	85,7
STUDIO 5 Anzuino et al 2011	24	29	36	89	74,8
STUDIO 6 Calzavara 2011	24	34	39	97	81,5



RESULTS

The model provides an association of Truvada[®] with:

- 1) efavirenz (NNRTI, Sustiva[®])
- 2) atazanavir (PI, Reyataz[®]) + ritonavir (booster PI, Norvir[®])
- 3) darunavir (PI, Prezista[®]) + ritonavir (booster PI, Norvir[®])

Association	Drug A	Drug B	Drug C	Hospital price with IVA (€)	Cost of 1 year therapy/patient	For 290 patients
1	Truvada [®]	Sustiva [®]		21.78	7 949.17	2 305 258.14
2	Reyataz [®] 300mg	Truvada [®]	Norvir [®]	27.15	9 908.08	2 873 344,51
3	Prezista [®]	Truvada [®]	Norvir [®]	30.64	11 184.45	3 243 491.37

The daily therapy cost for naive patient varies from 21.78€ to 30.64€.

The annual expenditure for naive patient varies from 7 949.17€ to 11 184.45€.

	scenario 1	scenario 2	scenario 3
	Truvada/ Sustiva	Reyataz 300mg /Truvada / Norvir	Prezista/ Truvada/ Norvir
Overall Budget Impact	2 305 258.14	2 873 344.51	3 243 491.37
Increase compared with scenario 1		568 086.37	938 233.23
% increase		24,64%	40,70%
Increase compared with scenario 2			370 146.86
% increase			12,88%

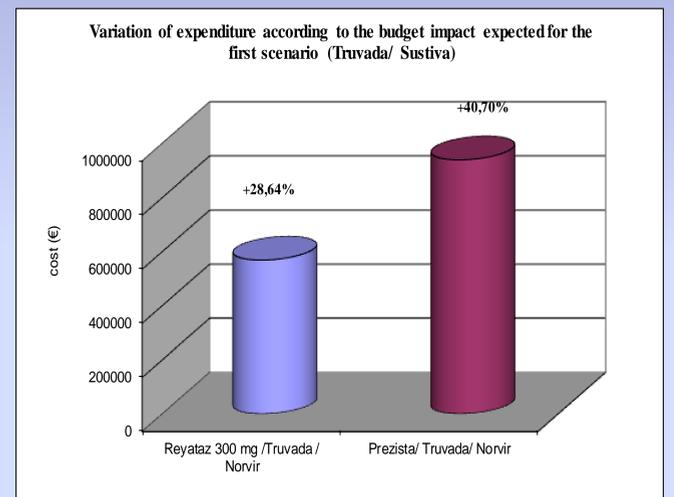
The Budget Impact was calculated considering that the 290 new HIV cases had been treated for one year with one of the therapeutic strategies provided.

CONCLUSIONS

The Budget Impact analysis will be used to carry out the pre-assessments of expenditure in order to set up health care programmes for the allocation of the economic resources. A pharmacoeconomic analysis of cost-effectiveness will be performed between the associations Truvada+Reyataz and Truvada+Sustiva.

The variation of expenditure in comparison with Truvada + Sustiva association is:

- +24,64% for association 2) atazanavir (PI, Reyataz[®]) + ritonavir (booster PI, Norvir[®])
- +40,70% for association 3) darunavir (PI, Prezista[®]) + ritonavir (booster PI, Norvir[®])



The third therapy is the most expensive (3 243 491.37€) and produce an increase in the annual expenditure of a 40.70% (938 233.23€) as compared with the first therapy (2 305 258.14€).