DRUG SURVIVAL RATES AND COST OF BIOLOGICAL AGENTS FOR THE TREATMENT OF MODERATE TO SEVERE PSORIASIS IN THE BALEARIC ISLANDS (SPAIN)

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INTRODUCTION:

There are few studies combining dose regimen, drug survival rates and costs of biological agents for the treatment of naïve patients with moderate-to-severe psoriasis in routine clinical practice. Drug survival rate (persistence rate) is a good indicator of the drug well functioning, as it depends on drug efficacy, side-effects and patients' satisfaction with the treatment[1,2]. Low drug survival is one of the main factors that increases treatment costs[3], for that reason this kind of analysis could provide relevant information for decision making process.

OBJECTIVES:

The aim of this study was to assess the dose regimen in routine clinical practice, drug survival rate (persistence rate) and to evaluate the efficiency in terms of cost per persistence for adalimumab (ADA), etanercept (ETN) and ustekinumab (UST) in a real practice clinical setting.

METHODS:

A retrospective study on psoriasis patients aged 18 years or more, screened according being naïve to a biological agent and a minimum of 6 months treatment, was performed in five public health system hospitals in the Balearic Islands (Spain) from January 1st 2010 to December 31st 2013. The recorded variables were: sex, weight, age, indication (psoriasis or psoriatic arthritis), reason for discontinuation and pharmacy dispensation records.

Reason for discontinuation was classified as: lack of efficacy, remission, adverse event, pregnancy or programmed surgical intervention, referred to other hospital or others. Patients with a discontinuation reason of remission were considered as maintaining the initial treatment and patient who discontinued due to pregnancy, surgical intervention or referred to other hospital were eliminated from the drug survival analysis (patients excluded were less than 5% of total sample).

This analysis was conducted from the perspective of the Spanish National Health System. Costs were estimated based on the purchase cost (average wholesale price), considering the pharmacological treatment with biologic agents at ex-factory price (as of May 2014) minus the mandatory reduction as per RDL 08/2010 plus VAT. Annual cost was estimated according to the first treatment received. Persistence rates were reckoned taking into account the current total days of therapy comparing posology with pharmacy supplied dose, and were estimated using the method of Kaplan-Meier.

RESULTS:

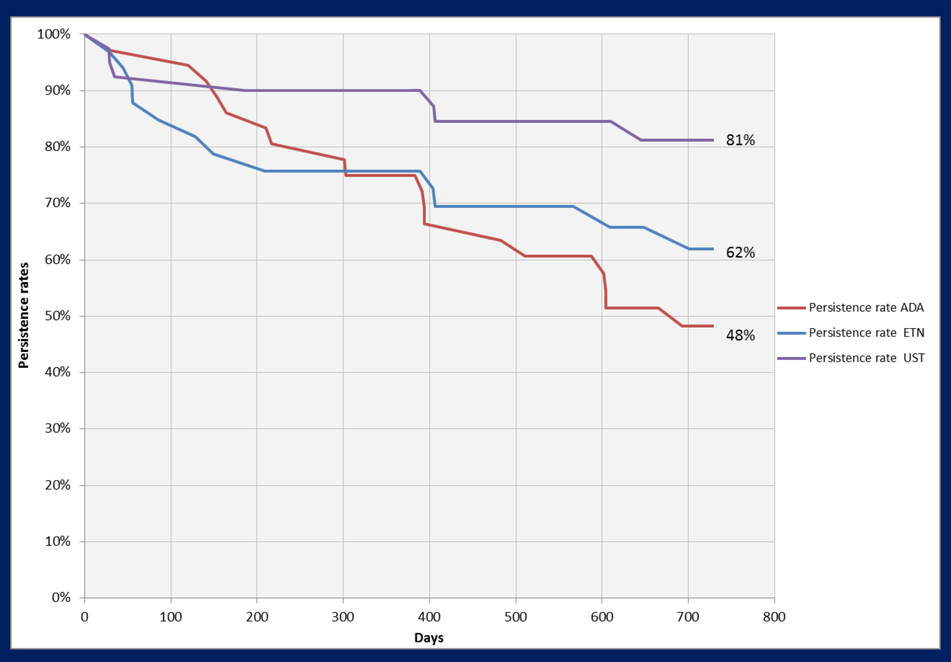
During the study period a cohort of 112 psoriatic patients were evaluated (57% men): 37 patients started treatment with adalimumab (ADA) , 34 with etanercept (ETN) and 41 with ustekinumab (UST) .

Baseline characteristics between treatment groups were comparable. Main difference was the lowest prevalence of psoriatic arthritis among ustekinumab treated patients.

Characteristics of patients

treatment	Patients N (%)	Age x (SD)	Weight x (SD)	Psoriatic arthritis (%)
adalimumab	37 (33%)	51 (14)	81 (17)	27%
etanercept	34 (30%)	52 (12)	82 (12)	25%
ustekinumab	41 (37%)	43 (16)	76 (16)	19%

The persistence rate observed at 365 days (one year) was higher for ustekinumab (90%), followed by etanercept (76%) and adalimumab (75%). This trend was maintained at 720 days (two years) being ustekinumab the drug with the highest drug survival rate (81%), followed by etanercept (62%) and adalimumab (48%); However during the second year there is an important increment in the difference among ustekinumab and anti-TNF drugs which reaches 33% when comparing ustekinumab vs adalimumab.

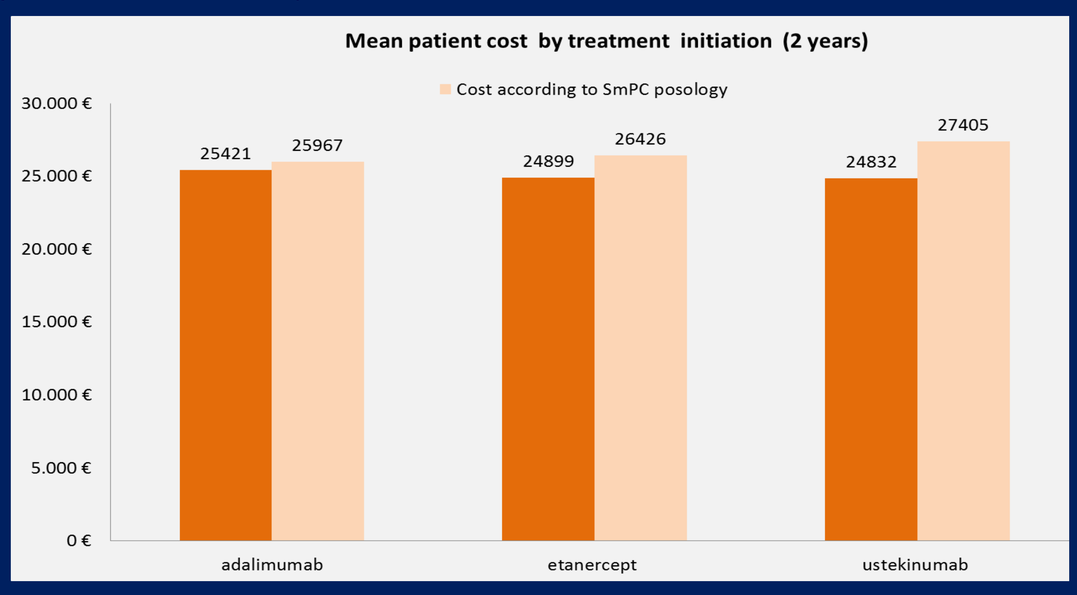


Most common reason for discontinuation was lack of efficacy for adalimumab (52% of discontinued patients) and etanercept (33%), while for ustekinumab was psoriasis remission (39%). Discontinuation due to adverse event was very similar among patient groups.

Reasons for discontinuation

Treatment	Lack of efficacy	Adverse Event	Remission	Pregnancy or surgical intervention	Referred to other hospital	Others	Total
adalimumab	52%	22%	17%	0%	9%	0%	100%
etanercept	33%	20%	27%	0%	7%	13%	100%
ustekinumab	17%	22%	39%	11%	6%	6%	100%

Mean patient cost for two years was lower for patients who initiated treatment with ustekinumab (24.832 €), followed by ones starting with etanercept (24.889 €) and adalimumab (25.421 €). In all scenarios mean patient costs were lower than the one estimated according to the posology established in the SmPC (Summary of product Characteristics) .



When analyzing the efficiency of the different treatment strategies in the initiation of therapy, by evaluating the cost per persistence rate at two years ("cost per responder"), ustekinumab was the most efficient alternative. Cost per persistence was lower for ustekinumab (30.657), followed by etanercept (40.160) and adalimumab (52.960).

Cost-effectiveness analysis at 2 years

Treatment	Cost	Persistence Rate	Cost per persistence	Incremental cost	Incremental effectiveness	ICER
ustekinumab	24.832 €	81%	30.657 €	-	-	-
etanercept	24.899 €	62%	40.160 €	67 €	-19%	-352 €
adalimumab	25.421 €	48%	52.960 €	589 €	-33%	-1.785 €

To confirm the efficiency of ustekinumab, ICER (incremental cost effectiveness ratio) has been calculated in relation to this drug. The analysis shows that both etanercept and adalimumab are dominated by ustekinumab, as starting patients with ustekinumab provided the highest effectiveness with the lowest cost at 2 years.

DISCUSSION:

- In our cohort ustekinumab showed better overall drug persistence rate compared to anti-TNFs (adalimumab and etanercept). Similar results have been reported in preceding studies[4-6]. Major reason for discontinuation therapy was lack of efficacy or remission; lack of efficacy has been reported previously as the main reason for discontinuation in the Dermbio Database[6,7].
- Our results confirm that initiating a therapy with a drug that eventually will lose its efficacy increases the overall cost of therapy[7]. Mean patient cost for two years is higher for patients who initiated treatment with etanercept or adalimumab. Both drugs presented lower persistence rates.
- Ustekinumab has been the most efficient alternative for the treatment of naïve patients and it has shown the least budget-impact per persistent-patient at 2 years and therefore ustekinumab dominates the other therapeutic alternatives. This study confirms that long term persistence rate is not only important from the clinical perspective but also from the health-economic standpoint and it should be included in decision making process.

REFERENCES:

1. McDonald HP, Garg AX, Haynes RB. Interventions to enhance patient adherence to medication prescriptions: scientific review. JAMA 2002; 288:2868–79.
2. Storm A, Andersen SE, Benfeldt E et al. One in 3 prescriptions are never redeemed: primary nonadherence in an outpatient clinic. J Am Acad Dermatol 2008; 59:27–33.
3. Elliott RA, Barber N, Horne R. Cost-effectiveness of adherence enhancing interventions: a quality assessment of the evidence. Ann Pharmacother 2005; 39:508–15
4. Clemmensen Am Spon M, Skov L et al. Responses to ustekinumab in the anti-TNF agent-naïve vs anti-TNF agent-exposed patients with psoriasis vulgaris. JEADV 2011; 25:1037-1040.
5. Martinez Nieto C. Evaluación de la eficiencia del tratamiento de pacientes con psoriasis de moderada a grave con fármacos biológicos en 8 hospitales públicos de la Comunidad de Madrid. 43rd Congreso Nacional de Dermatología y Venereología 2014. Poster 925-243
6. Gniadecki R, Bang B, Bryld LE, et al. Comparison of long-term drug survival and safety of biologic agents in patients with psoriasis vulgaris. BJD 2014. doi: 10.1111/bjd.13343.
7. Gniadecki R, Kragballe K, Dam Tn & Skov L. Comparison of drug survival rates for adalimumab, etanercept and infliximab in patients with psoriasis vulgaris. BJd 2011; 164: 1091-1096.

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