

ECONOMIC EVALUATIONS OF ETANERCEPT IN PATIENTS WITH PSORIASIS AND PSORIATIC ARTHRITIS IN SPAIN: A SYSTEMATIC REVIEW

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BACKGROUND

The economic burden of Psoriasis (PsO) and Psoriatic Arthritis (PsA) have a substantial impact on Healthcare Systems core countries in Europe¹. Etanercept, a highly effective biological agent for the treatment of PsO and PsA is widely used in Spain, although limited evidence is currently available of its economic impact.

OBJECTIVES

To perform a systematic review on pharmacoeconomic studies associated with PsO and PsA treated with etanercept (ETN) in Spain.

RESULTS

- A total of 375 references were identified, of which 27 were selected; 78% analyzed PsO (9 full economic evaluations, 6 cost-analysis and 6 dose optimization studies) and 22% PsA (1 cost-analysis and 5 dose optimization studies) (figure 1).
- Out of 9 full economic evaluation studies in Psoriasis, 8 used the National Health System (NHS) perspective. Time horizons adopted in PsO economic evaluations range from 12 weeks to 2 years. Psoriasis Area Severity Index (PASI) percentage response rate of 50, 75 and 90 were presented. Total annual cost per patient ranged from €17,436 to €23,034/PASI75-year (table 1).
- A cost-utility analysis was found for PsO (NHS perspective), resulting in an incremental cost utility ratio (ICUR) of €29,430 and €52,367/QALY gained (for ETN, 2x25 mg and 50 mg, respectively) (table 1).
- Only one cost-study in psoriasis was performed using the societal perspective, including productivity losses. Annual cost per responder PASI75-year varied from €4,986 (maintenance period) to €18,908 (escalation of ETN twice weekly during 31 weeks in induction period) (table 2).
- No full economic evaluation in PsA was found. The only cost analysis study identified for PsA (1-year follow-up observation study) adopted the NHS perspective, resulting in ETN annual cost of €8,585/patient-year (table 2).
- Cost-optimization studies in PsO included observational studies with different type of interventions (biological therapy protocol implementation, dose escalation, dose reduction). The time horizon adopted was 1 year, with exception of 1 study, and all of them used the NHS perspective (only pharmacological costs). Average annual cost after dose optimization programs at hospital setting varied from €10,252 to €11,028/patient-year. 2 studies reported cost-saving ranging from €2,012/pac-2 years to €15,216/year.
- PsA dose optimization studies were in line to PsO, one regarding the perspective used and type of interventions carried out. Time horizons adopted were 6 months and 1,2 and 7 years. Results were reported as total annual cost savings (ETN 25mg/w: €3,937/year, ETN 50mg/w: €2,503/year and €81,949 for switching ETN50mg to 25mg/w along 7 years) and real annual cost per patient (€10,389-€11,028/patient-year).

METHODS

- A systematic review was carried out in PubMed, Embase, Cochrane Library, conference abstracts, Health Technology Assessment reports and grey literature from January 2004 to January 2017.
- Inclusion criteria were: economic evaluations (full or partial), and dose optimization studies published in English or Spanish language, on PsO and PsA for ETN in Spain.

Figure 1. Flow Diagram (based on PRISMA criteria²)

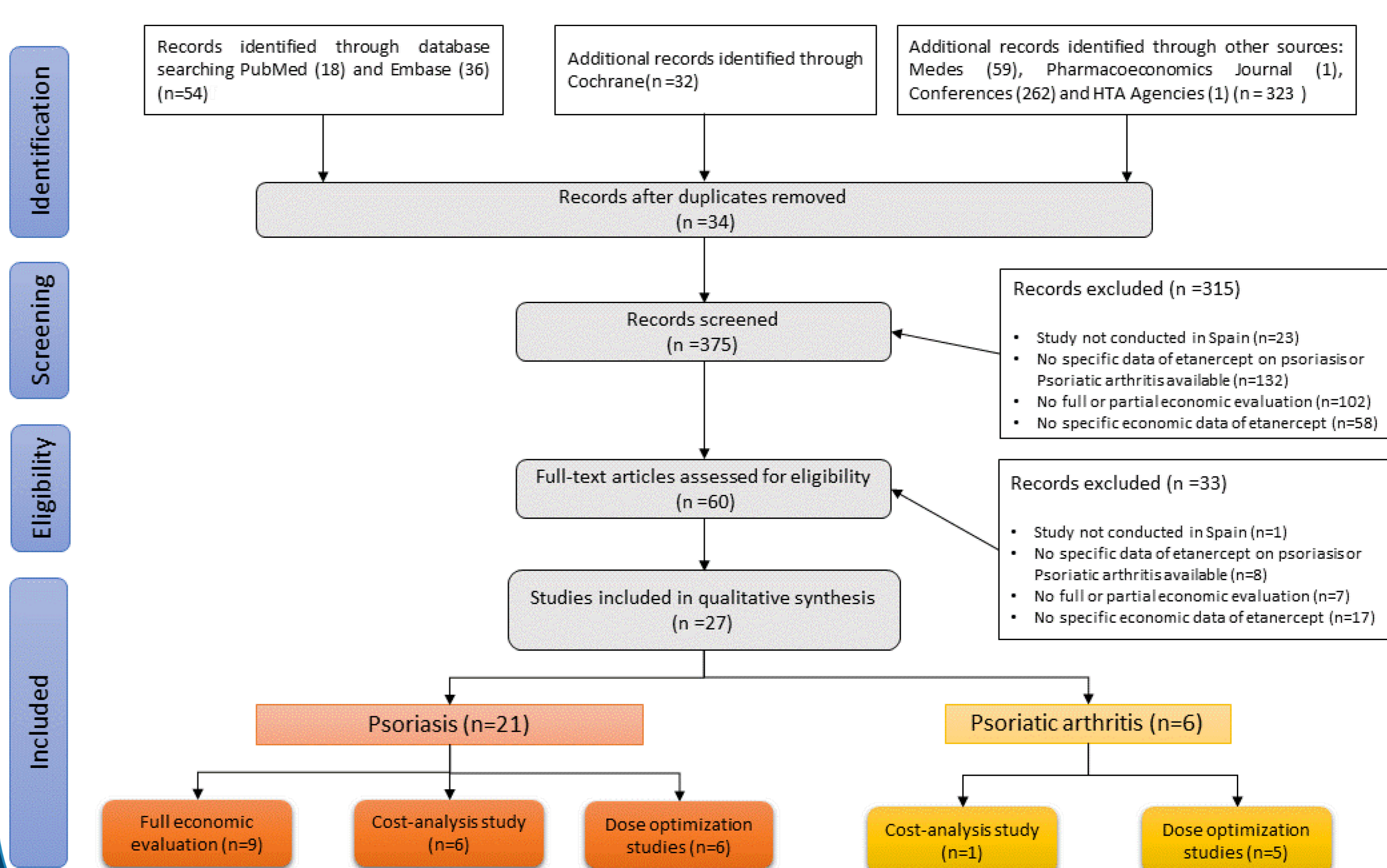


Table 1. Description and results of full economic evaluations of PsO in Spain

Author-year (reference type)	Perspective/Horizon	Type of costs/year of cost	Effectiveness	Result (incremental cost)
Psoriasis				
Full economic evaluations				
Alfageme 2016 (Paper)	Societal /12 w	Direct medical costs (pharmacological, healthcare professional visits, tests), direct non-medical cost (transportation) and indirect costs (productivity loss) / NR	PASI75 (12 w)	€143/PASI75-12w
Ferrandiz 2012 (Paper)	NHS /12-24 w	Direct medical cost (pharmacological cost)/€2010	PASI75 (12-24 w)	€9,110/PASI75-12w (ETN 2x25mg/w o 50mg/w) €11,213/PASI75-24w (ETN 2x25 mg/w) €12,797/PASI75-12w (ETN 2x50 mg/w) €9,370/PASI75-12w (2x25mg/w o 50mg/w)
Blasco 2009 (Paper)	NHS /12-24 w	Direct medical cost (pharmacological cost)/€2008	PASI75 (12-24 w)	€11,213/PASI75-24w (2x25 mg/w) €12,797/PASI75-12w (2x50 mg/w)
Puig 2016 (Paper)	NHS /52 w	Direct medical costs (pharmacological and administration costs)/€2015	Number of patients successfully treated (maintenance period)	€20,178/patient-year
Puig 2014A (Case-research letter)	NHS /24 w	Direct medical costs (pharmacological cost)/€2014	PASI50 (12-24w) and PASI75 (24w)	€8,818 (8,271- 9,459)/PASI50-12w €12,735 (11,699-13,900)/PASI50-24w €16,080 (14,043-18,810)/PASI75-24w
Carretero 2009 (Abstract)	NHS /12 w	Direct medical costs (NR)/NR	Quality Adjust life-year (QALY)	€29,430/QALY (ETN 2x25mg) €52,367/QALY (ETN 50mg)
Martinez-Sesmero 2016 (Abstract)	NHS /1 year/	Direct medical costs (pharmacological, administration and monitoring costs)/€2016	PASI75 (52w)	€17,436/PASI75-year
Comellas 2016(Abtract)	NHS /2 years	Direct medical costs (pharmacological cost)/NR	PASI90 (2 years)	ETN+ADA: €77,359/PASI90-2 years ETN+INF: €66,945/PASI90-2 years ETN+SEC: €49,375 /PASI90-2 years ETN+UST: €70,674/PASI90-2 years
Galvan-Banqueri 2013 (HTA report)	NHS /1 year	Direct medical cost (pharmacological cost)/NR	PASI75 (maintenance period)	€23,034/PASI75-year

ADA: adalimumab; CI: confidence interval; ETN: etanercept; HTA: Health Technology Assessment; INF: infliximab; NHS: National Health System; NR: not reported; PASI: Psoriasis Area Severity Index; SEC: secukinumab; UST: ustekinumab; w: weeks

Table 2. Description and results of cost-analysis studies in PsO and PsA in Spain

Author-year (reference type)	Perspective/Horizon	Type of costs/year of cost	Effectiveness	Result (cost/effectiveness ratio)
Psoriasis				
Fernández-Torres 2015(Paper)	NHS /1 year	Direct medical cost (pharmacological cost)/NR	PASI75 (52w)	€12,719 ± 2,350/PASI75-year (ETN 50mg/w o ETN 2x50mg) €11,299 (95%CI 10,551-12,046€) / PASI75-year
Ruiz-Villaverde 2016(Paper)	NHS /2 years	Direct medical costs (pharmacological cost)/NR	PASI75 (12w, 24w, 36w, 48w,60w,72w)	Continuous regimen -Induction period (year 1): €12,294/PASI75-year -Maintenance period (year 2): €12,327/PASI75-year Intermittent regimen -Induction period (year 1): €10,302/PASI75-year -Maintenance period (year 2): €4,986 /PASI75-year
Ruano 2013 (Paper)	Societal /1 year	Direct medical costs (pharmacological, healthcare professional visit and hospitalization costs), non-medical costs (transportation) and indirect costs (productivity loss) / €2012	PASI75 (52w)	€14,844±6,179/PASI75-year
Puig 2014 (Paper)	NHS /1 year	Direct medical costs (pharmacological cost)/€2013	NR	Escalation from 50 mg/w to 2x50 mg/w during o 12 w: €14,580/patient-year o 17 w: €15,719/patient-year o 26 w: €17,769 /patient-year o 31 w: €18,908/patient-year
Ventayol 2014 (Abstract)	NHS /2 years	Direct medical costs (pharmacological cost)/NR	Persistence at year 2 ^W	€40,160/ persistence - 2 years
Dominguez 2011(Abtract)	NHS /2 years	Direct medical costs (pharmacological cost)/NR	NR	€15,268/patient-year (year 1) €14,420 /patient-year (year 2)
Psoriatic Arthritis				
Acosta 2012 (Abstract)	NHS/1 year	NR/NR	NR	€8,585 patient-year

ETN: etanercept; NHS: National Health System; NR: not reported; PASI: Psoriasis Area Severity Index; w: weeks

CONCLUSIONS

Economic evaluations of ETN undertaken in Spain were highly heterogeneous in the study design (ie; dose regime, time horizon) with very broad interval costs.

REFERENCES

1.Burgos-Pol et al.Actas Dermosifiliogr.2016;107(7):577-90. 2.Moher D et al.PLoS Med. 2009;6:e1000097.18.