Supplementary material

Supplementary Table 1. ICD-9-CM Codes for selected comorbidities

Description	ICD-9 Code	
arterial hypertension	401	
diabetes mellitus	250	
dyslipidemia	272	
obesity	278.0	
ischemic heart disease	410 - 414	
cerebrovascular accident	430 - 434	
COPD	415.0, 416.8, 416.9, 490 – 496, 500 – 505, 506.4	
heart failure	402.11, 402.91, 402.01, 404.01, 404.03, 404.11, 404.93, 425, 428	
kidney failure	584, 585	
depression	311	
general anxiety	300	
malignant neoplasm	140 - 209	
asthma	493	
allergic rhinitis	477.9	
nasal polyps	471	
psoriasis	696.1	
rheumatoid arthritis	714.0	
other autoimmune pathologies	279.4	

Supplementary Table 2. ATC Codes for treatments

Description	ATC Code	
Systemic Treatments		
Oral corticosteroids	H02A	
Immunosuppressants	cyclosporine (L04AD01), azathioprine (L04AX01), methotrexate (L04AX03), mycophenolate mofetil (L04AA06), biological drugs: dupilumab (D11AH05), omalizumab (R03DX05), rituximab (L01XC02)	
Other systemic drugs	immunoglobulins (J06B*), interferon gamma (L03AB*) and hydroxychloroquine (P01BA02)	
Non-systemic and concomitant treatments		
Topical corticosteroids	D07AB, D07AC, D07AD	
Topical immunomodulators	tacrolimus (D11AH01); pimecrolimus (D11AH02)	
Antihistamines	R06	
Antibiotics	J01	
Antidepressants	N06A	

Supplementary Table 3. Unit costs (2019)

Healthcare and non-healthcare	Unit costs (€)
resources	Offic Costs (e)
Medical visits	
Primary Care Medical Visit	23.2
Hospital A&E Medical Visit	117.5
Hospitalization (one day)	480.9
Specialized Care Medical Visit*	92.5
Pain Clinic Visit	185.0
Complementary tests	
Laboratory Tests	32.3
Conventional radiology	28.5
Computerized axial tomography	96.0
Nuclear magnetic resonance	177.0
Other diagnostic tests	47.1
Pharmaceutical prescription	PVPiva
Work productivity losses - Indirect costs	
Cost per non-worked day	101.21

2019 Unit Costs

Source of healthcare resources: own analytical accounting and INE.

Values expressed in Euros.

RRP: Recommended Retail Price.

^{*:} Only in dermatology, internal medicine and allergy departments.

Supplementary Figure 1: Flowchart of patient disposition

Population in database 2012-2016 N=1,357,5771

Patients with ICD-9 codes for **AD**² **2012-2016**N=203,269³

Patients with prior AD who start phototherapy/systemic treatment 2012-2016⁴ N= 41,887

Patients with prior AD who start phototherapy/systemic treatment 2012-2016, and no record of any of them in 2 years pre-index N=22,255

Patients with prior AD ≥ 18 years at index who start phototherapy/
systemic 2012-2016, and no record of any of them in 2 years pre-index
N=12,769

Primary Analysis Population
Patients with an AD-related ICD-9
code documented for at least one
prescription of phototherapy/systemic

treatment during the inclusion period N=1,995

Exclusions:

- Patients with no record of phototherapy/systemic, 2012-2016 (N=140,521)
- Patients with AD diagnosis after phototherapy or systemic treatment initiation (N=20,861)

Exclusions:

Patients with a record of phototherapy/systemic in the 2 years pre-index (N=19,632)

Exclusions:

• Patients <18 years at the index date (N=9,486)

Evolusions

- Patients with <2 prescriptions during study period (N=31)
- Patients with <2 records in the computer system (N=5)
- Patients not continuously registered in the database for at least 3 years from the index date (N=1,303)
- Patients permanently institutionalised (N=6)
- Patients with terminal illness (N=3)
- Patients without AD related ICD-9 code recorded in phototherapy/systemic Rx within inclusion period (N=10,774)

 $^{^1\,202,\!753\,{&}lt;}18$ years and 1,154,824 \geq 18 years

² AD-related ICD-9 Codes: 691.8 ('Other atopic dermatitis and related conditions') and 692.9 ('Contact dermatitis and other eczema, unspecified cause' with 'allergic' or 'atopic' in the 'description' field of diagnosis in the database)

³ 68,987 <18 years and 130,282 ≥ 18 years

⁴ the date of first systemic treatment initiation or phototherapy between 01/01/2012 and 31/12/2016 is defined as the index date