

# Healthcare Resource Utilization and Related Cost Among Patients Hospitalized for Prurigo Nodularis: A Retrospective Cohort Study Using Italian Health Claims Data

CLICON S.R.L. SOCIETÀ BENEFIT, HEALTH, ECONOMICS & OUTCOMES RESEARCH      ISPOR EU, 12-15 November 2023, Copenhagen, Denmark

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## BACKGROUND AND OBJECTIVES

- ✓ Prurigo nodularis (PN) is a chronic, inflammatory skin disease characterized by intense itch.<sup>1</sup>
- ✓ Besides the known repercussions on quality of life, PN is associated with several comorbidities including hypertension, dyslipidemia, metabolic disease, autoimmune conditions and psychiatric disorders.<sup>2,3</sup>
- ✓ To date, little evidence exists on PN clinical and economic burden in Italy.

**AIMS:** This real-world analysis aimed to investigate the comorbidity profile and the healthcare resource consumption with related direct costs of patients hospitalized for PN in Italy over a 1-year period of follow-up.

## METHODOLOGY

**DATA SOURCE:** The analysis utilized the administrative databases of healthcare units that cover approximately 12 million health-assisted inhabitants across Italy (nearly 20% of the country population).

**POPULATION AND STUDY COHORTS:** Adult patients with at least one hospital discharge diagnosis at any level with ICD-9-CM=698.3 were included and compared with patients without PN (non-PN cohort) matched for age, sex and year of index-date (ratio 1:2).

### TIMEPOINTS OF THE ANALYSIS (Figure 1)

**DATA AVAILABILITY:** from Jan-2009 to Sep-2022.

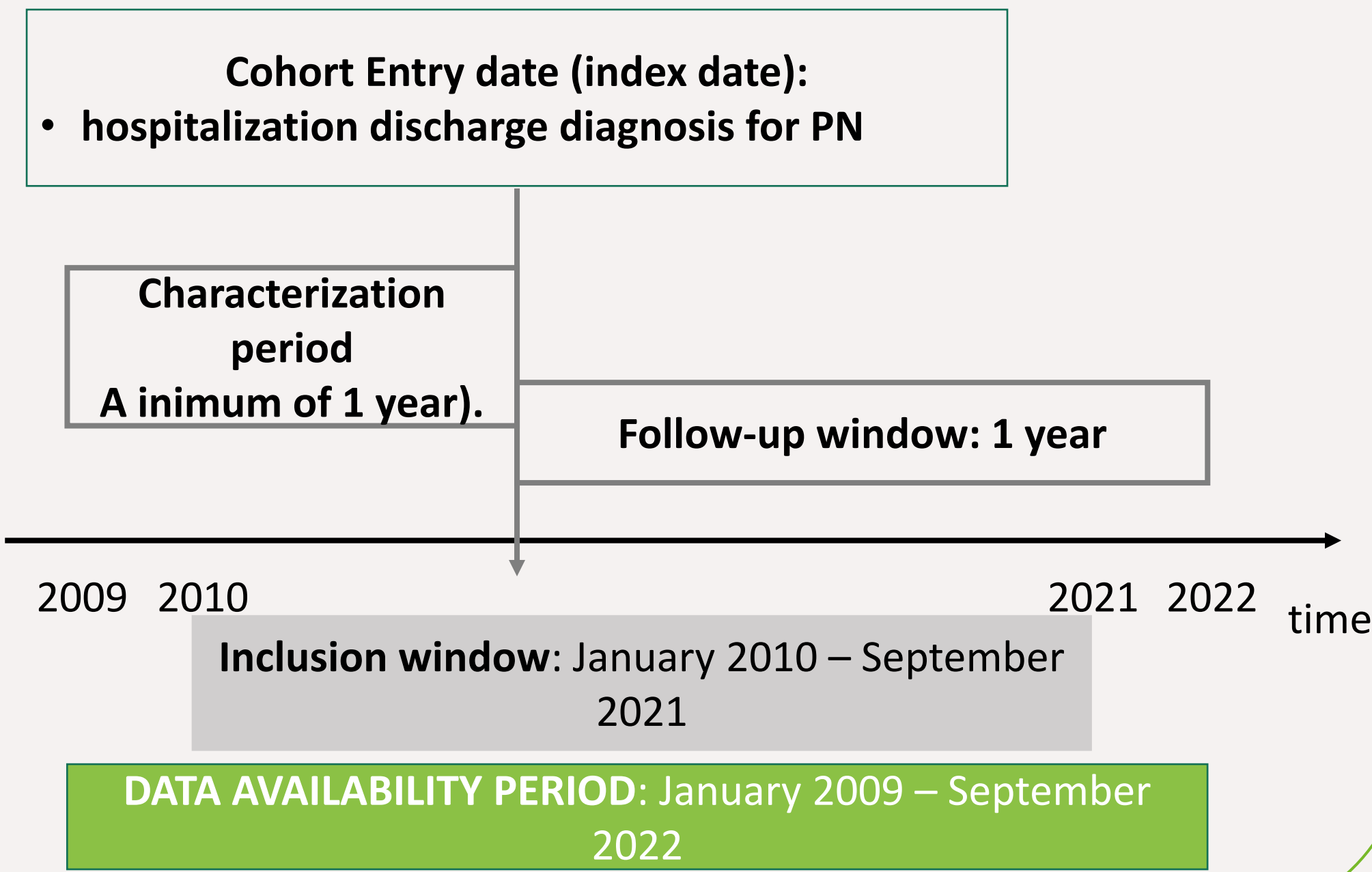
**INCLUSION PERIOD:** from Jan-2010 to Sep-2021.

**INDEX DATE:** date of the first hospitalization for PN.

**CHARACTERIZATION PERIOD:** all available period before the index date (at least 1 year) (used for comorbidity profile)

**FOLLOW-UP PERIOD:** all available period after the index date (at least 1 year) (used for cost description analysis).

Figure 1. Study design.



### References

1. Mullins TB, Sharma P, Riley CA, et al. Prurigo Nodularis. [Updated 2022 Sep 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK459204/>
2. Augustin M, et al.. Prevalence, incidence and presence of comorbidities in patients with prurigo and pruritus in Germany: A population-based claims data analysis. J Eur Acad Dermatol Venereol. 2021;35(11):2270-6.
3. Lanza G, et al. Cognitive Impairment in Inpatients with Prurigo Nodularis and Psychiatric Comorbidities. Int J Environ Res Public Health. 2021;18(12):6265.

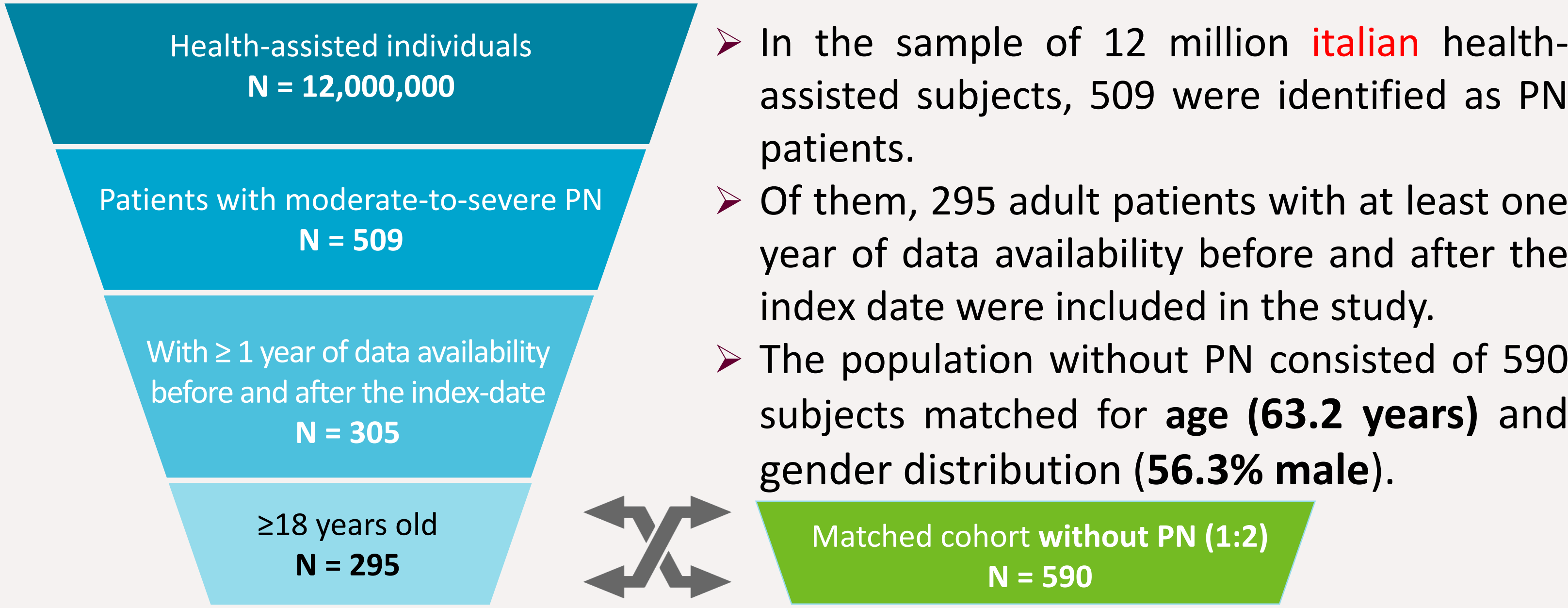
### Disclosure

Sanofi and Regeneron Pharmaceuticals, Inc. sponsored the study report that is the basis for this poster presentation.

CONFLICTS OF INTEREST: EG, CV and LDE are employees of CliCon. DB, GR, MPP and DLI are employees of Sanofi and may hold stock/stock options in Sanofi.

## RESULTS

### ✓ IDENTIFICATION OF STUDY POPULATION



### ✓ COMORBIDITIES PROFILE

At baseline, PN patients had a greater comorbidity burden than no-PN controls (**Table 1**), including higher prevalence of hypertension (56.6% vs 36.6%, respectively), dyslipidemia (26.4% vs 18.0%), diabetes (24.4% vs 12.5%) and mental health conditions (14.9% vs 7.8%).

Table 1. Comorbidity profile in the two cohorts	PN cohort (N=295)	No-PN cohort (N=590)	SMD
<b>Systemic comorbidities, n (%)</b>	<b>202 (68.5%)</b>	<b>272 (46.1%)</b>	0.464
Diabetes	72 (24.4%)	74 (12.5%)	0.309
Dyslipidemia	78 (26.4%)	106 (18.0%)	0.205
Hypertension	167 (56.6%)	216 (36.6%)	0.409
Cardiovascular diseases	59 (20.0%)	47 (8.0%)	0.352
Chronic kidney disease (CKD)	17 (5.8%)	11 (1.9%)	0.204
Malignancies	31 (10.5%)	30 (5.1%)	0.203
<b>Mental health, n (%)</b>	<b>44 (14.9%)</b>	<b>46 (7.8%)</b>	0.225
Antidepressants	43 (14.6%)	46 (7.8%)	0.216
<b>Type 2 inflammatory diseases</b>	<b>39 (13.2%)</b>	<b>22 (3.7%)</b>	0.345
Asthma	9 (3.1%)	5 (0.8%)	0.160
Chronic obstructive pulmonary disease (COPD)	21 (7.1%)	16 (2.7%)	0.205
<b>Dermatological comorbidities</b>			
Psoriasis (PSO)	14 (4.7%)	NR	-
Atopic dermatitis	35 (11.9%)	6 (1%)	0.452

Note: standardized mean difference (SMD) was calculated to evaluate how the cohorts were balanced for the analysed variables. SMD values greater than 0.1 is a threshold to check imbalance between the groups.

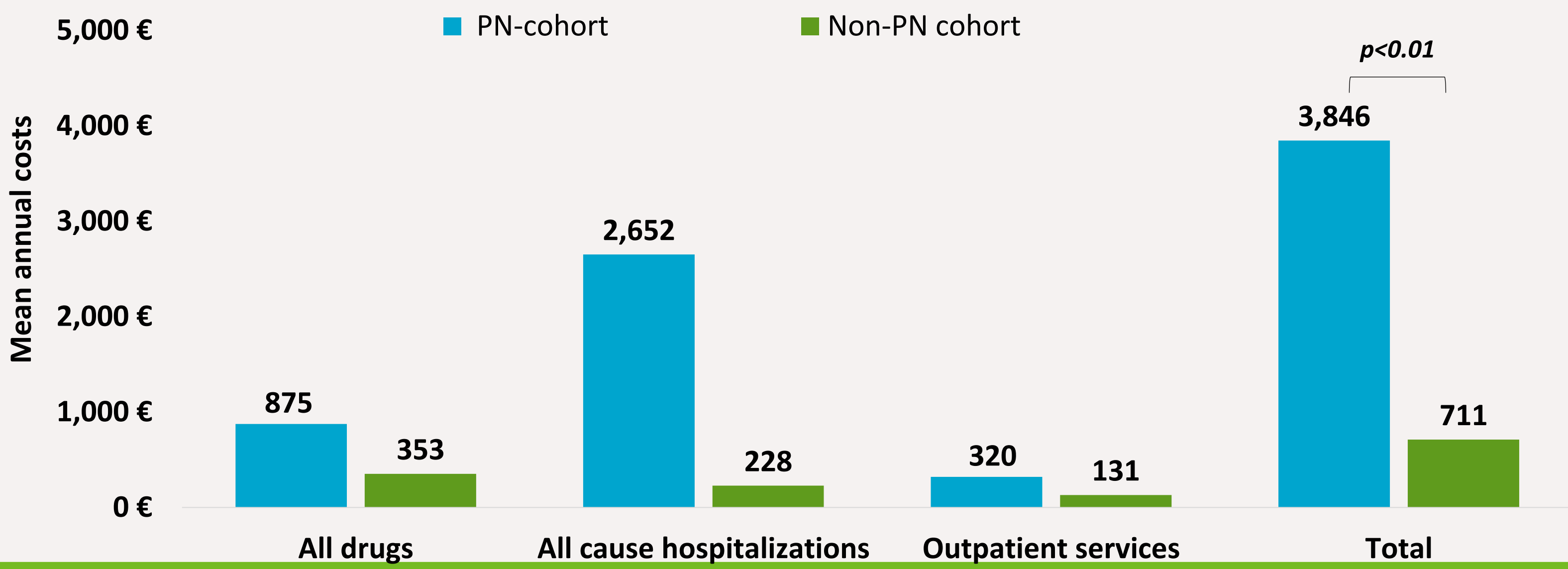
These results are consistent with literature reporting that adults with PN suffered most frequently from hypertension, hyperlipidemia and depression compared with the general population.<sup>2</sup>

### ✓ ANALYSIS OF HEALTHCARE CONSUMPTIONS AND COSTS

At 1-year follow-up, PN patients showed significantly **higher resource consumption** than no-PN, in terms of mean number of prescriptions for PN-related drugs (5.1 vs 1.9, p<0.001), other drugs (11.7 vs 6.5, p<0.001), all-cause hospitalizations (1.4 vs 0.1, p<0.001) and outpatient services (5.4 vs 2.5, p<0.001).

The mean annual total costs were 5.5-times higher in patients with PN compared to the non-PN matched controls (mean annual total costs of €3,846 vs €711, p<0.001).

Figure 2. Healthcare costs per patient at 1-year follow-up in PN and no-PN cohorts.



## CONCLUSIONS

- ✓ In the context of a lack of data in Italy on PN management of care, this real-world study provided a scenario on the burden of PN patients in the real clinical practice.
- ✓ A selection bias may have occurred since the ICD-9-CM code 698.3 it also identifies lichen simplex chronicus and neurodermatitis circumscripta, and there is no other validated proxy to discriminate between the two conditions.
- ✓ Patients hospitalized for PN had a higher comorbidity burden at baseline and greater healthcare resource consumption at 1-year follow-up compared to matched controls without PN, with a 6-fold increase in all-cause healthcare costs.
- ✓ Taken together, these results indicated a substantial clinical burden and remaining unmet need in PN patients.