

# Healthcare resource utilisation and associated costs in patients with eosinophilic granulomatosis with polyangiitis (EGPA) in England: a retrospective observational cohort study



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## Why did we perform this research?

- EGPA is a rare, inflammatory disorder characterised by asthma, eosinophilia and systemic necrotising vasculitis of small- to medium-sized blood vessels<sup>1,2</sup>
- Although the incidence of EGPA is low, the clinical burden associated with the disease and its management is high<sup>3,4</sup>
- More real-world data on patient characteristics, HCRU and health insurer payment costs in patients with EGPA are needed to help ascertain the full impact of the disease

### Objective

This retrospective observational cohort analysis aimed to quantify HCRU and associated costs using electronic health record databases in England

**E-poster**

**Supplementary material**

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## How did we perform this research?

### Inclusion criteria

First diagnosis of EGPA<sup>a</sup> between 1 January 2006 and 28 February 2019

≥1 year of data before diagnosis (ID)

### Outcomes

HCRU and associated costs<sup>b</sup> were assessed overall and by prognosis (FFS [1996 version] at ID)

### Data source

Primary care data from the (CPRD) Aurum database were linked to data from the HES, which contains diagnoses, inpatient admissions, outpatient visits and procedures

### Study schema

1 January 2006

28 February 2019

28 February 2020

Study selection window

Baseline period 12 months

Follow-up period<sup>c</sup> Variable length, depending on patient

Database start

1 year prior to ID

ID: First EGPA diagnosis

This study forms part of the CONSTELLATION real-world evidence programme in rare, eosinophil-associated diseases

<sup>a</sup>SCDID 82275008 or ICD-10 M30.1, identified from CPRD Aurum or hospital records; <sup>b</sup>Obtained from 2021/2022 national schedules of NHS costs; <sup>c</sup>Follow-up was from ID to death, deregistration, last GP data collection or study end

## What did we find?

>50 million patients in database

2349 patients with EGPA<sup>a</sup> diagnosis code

486 patients met criteria for incident EGPA cohort

See **Supplementary Table S1** for detailed patient selection process

### Baseline demographics and clinical characteristics in patients with incident EGPA (N=486)

50.2% Female

Mean (SD): 57.9 (15.2) years

Follow-up Mean (SD): 5.4 (3.7) years

See **Supplementary Table S2** for further demographics and clinical characteristics

### FFS (1996 version)<sup>5</sup> at ID, n (%)

0	1	2+
371 (76.3)	99 (20.4)	16 (3.3)

See **Supplementary Table S3** for FFS components<sup>b</sup>

### All-cause HCRU was generally greater post-ID than in the 12 months pre-ID, including outpatient visits (95.1%) and inpatient admissions (74.3%)

Annual all-cause HCRU

	12 months pre-ID (N=486)	12 months post-ID (N=486)
Outpatient visits	86.6	95.1
A&E visits	48.4	41.4
Inpatient admissions	59.3	74.3

Proportion of patients with a visit, %

See **Supplementary Table S4** for person-years of follow-up for each year

### Rates of outpatient visits and inpatient admissions were greater in the 12 months post-ID compared with pre-ID

HCRU usage rate per person-years

	12 months pre-ID (N=486)	12 months post-ID (N=486)
Outpatient visits	7.5	13.7
A&E visits	1.1	0.8
Inpatient admissions	2.0	3.4

Rate per person-years (all patients)

### All-cause HCRU was high for all patients, regardless of FFS at baseline

All-cause HCRU

	12 months pre-ID	12 months post-ID
Outpatient visits	84.4	93.9
A&E visits	46.1	55.7
Inpatient admissions	55.0	73.0

Patients with HCRU use, %

FFS=0 FFS ≥1

### Rates of HCRU usage in the 12 months pre- and post-ID were high for all patients, regardless of FFS at baseline

HCRU usage rate per person-years

	12 months pre-ID	12 months post-ID
Outpatient visits	6.9	9.5
A&E visits	1.0	1.5
Inpatient admissions	1.3	4.1

Rate per person-years (all patients)

FFS=0 FFS ≥1

### The median all-cause HCRU cost per person was greater during the 12 months post-ID compared with 12 months pre-ID

Annual all-cause HCRU per patient

	12 months pre-ID	12 months post-ID
Outpatient visits	£1145	£2290
A&E visits	£0	£0
Inpatient admissions	£1038	£4409

Median cost per patient (£)

Total costs<sup>a</sup> £4732 £8302

See **Supplementary Figure S1** for all-cause HCRU for each year of follow-up

### The median all-cause costs per person were higher in patients with FFS ≥1 compared with FFS=0 from baseline to Month 24, and costs converged from Month 24 onwards

All-cause HCRU costs

Months post-ID	FFS=0	FFS ≥1
12 months before ID	£4028	£6659
0–12	£7989	£9886
13–24	£3030	£4621
25–36	£2767	£3412
37–48	£2725	£2747
49–60	£2904	£3407

Median HCRU cost (£)

Total costs<sup>a</sup>, FFS=0 £5866 Total costs<sup>a</sup>, FFS ≥1 £8635

Patients with data, n=486 486 436 392 327 283

## Conclusions

- EGPA was associated with high HCRU and direct medical costs in the year before and after diagnosis; median costs were higher for patients with an FFS ≥1 (£8635) compared with an FFS=0 (£5866)
  - HCRU and the associated costs decreased 2 years after diagnosis and remained stable up to Year 5
- There is a high, unmet need for targeted treatments to improve the burden of EGPA and related HCRU and costs, which last for several years following EGPA diagnosis

**References**  
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**Abbreviations**  
A&E, Accident and Emergency; CC, critical care; CPRD, Clinical Practice Research Datalink; EGPA, eosinophilic granulomatosis with polyangiitis; FFS, Five Factor Score; GP, general practitioner; HCRU, healthcare resource utilisation; HES, Hospital Episode Statistics; ICD-10, International Classification of Diseases, Tenth Revision; ID, index date; NHS, National Health Service; SCDID, SNOMED CT [Systemized Nomenclature of Medicine Clinical Terms] identifier; SD, standard deviation

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