Country Differences in the Burden of Patients with Hypereosinophilic Syndrome in Europe

Poster No. P1035

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Introduction

Hypereosinophilic syndrome (HES) is a group of rare blood disorders characterised by peripheral eosinophilia that can lead to tissue and organ damage.[1,2] HES can manifest in multiple organ systems, commonly affecting the skin, heart, nervous system, gastrointestinal tract and lungs.[1-3]

The diagnosis and management of HES can be challenging owing to differences in patient characteristics, disease characteristics and clinical manifestations.[1-3] At present, there is limited information available on the burden of HES in Europe.

The aim of this retrospective chart review study was to describe real-world patient demographics, disease characteristics, clinical manifestations, treatment patterns and clinical outcomes for patients with HES across Europe.

Methods

Study design (GSK ID: 214657)

Real world | Retrospective | Chart review

Patient eligibility criteria

- ≥6 years of age
- Confirmed HES diagnosis
- ≥ 1 year of follow-up data from index

N=280

Index period*

First physician encounter after HES diagnosis: Jan 2015 to Dec 2019

HES diagnosis date → Abbreviated patient history‡ → End of follow-up† → Detailed natural course of disease§

Chart review conducted by 121 physicians in 5 European countries: France, Germany, Italy, Spain, UK

Study outcomes

Overall and by country

Patient demographics | Disease characteristics | Clinical manifestations | Treatment patterns | Clinical outcomes

*Date of first physician encounter after HES diagnosis between January 2015 and December 2019; †earliest of death, loss to follow-up or date of chart abstraction; ‡as available in the patient's chart, from first HES diagnosis to the index date; §detailed data on the patient's disease course were collected from the index date until the end of follow-up.

Results

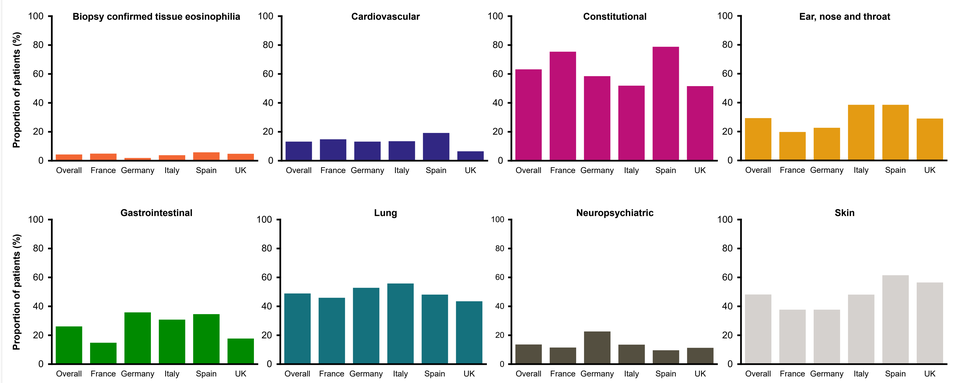
Table 1. Patient demographics and disease characteristics

	Overall N=280	France N=61	Germany N=53	Italy N=52	Spain N=52	UK N=62
Male, n (%)	182 (65)	46 (75)	28 (53)	30 (58)	38 (73)	40 (65)
Age at HES diagnosis mean (SD), years	42.4 (16.2)	47.5 (15.3)	42.0 (17.9)	40.2 (14.8)	42.3 (12.6)	39.7 (18.6)
Disease duration* mean (SD), years from diagnosis date	4.0 (4.5)	4.1 (4.4)	2.6 (1.6)	4.9 (5.9)	4.3 (4.2)	4.1 (4.9)
Disease subtype, n (%)						
Idiopathic	155 (55)	33 (54)	30 (57)	32 (62)	27 (52)	33 (53)
Lymphocytic variant	42 (15)	11 (18)	8 (15)	4 (8)	5 (10)	14 (23)
Myeloid variant	66 (24)	16 (26)	10 (19)	9 (17)	18 (35)	13 (21)
Other†	2 (1)	0	0	1 (2)	0	1 (2)
Unknown	15 (5)	1 (2)	5 (9)	6 (12)	2 (4)	1 (2)
HES diagnosis, n (%)						
Before study (≤2014)	32 (11)	7 (11)	1 (2)	9 (17)	7 (13)	8 (13)
During the study (2015–2019)	248 (89)	54 (89)	52 (98)	43 (82)	45 (87)	54 (87)

*Disease duration was calculated as the time between HES diagnosis and the end of follow-up (earliest of death, loss to follow-up or date of chart abstraction); †included overlapping subtypes (that the physician was to specify), a disease not otherwise specified and also included chronic eosinophilic leukaemia.

Figure 1. Overall, a high proportion of patients experienced constitutional, ENT, lung or skin clinical manifestations*

	Overall	France	Germany	Italy	Spain	UK
Number of distinct clinical manifestations, mean (SD)	3.7 (3.7)	3.3 (3.2)	3.3 (3.0)	4.6 (4.7)	4.7 (3.7)	3.0 (3.5)
Proportion of patients with ≥5 distinct clinical manifestations, n (%)	81 (29)	13 (21)	14 (26)	18 (35)	21 (40)	15 (24)

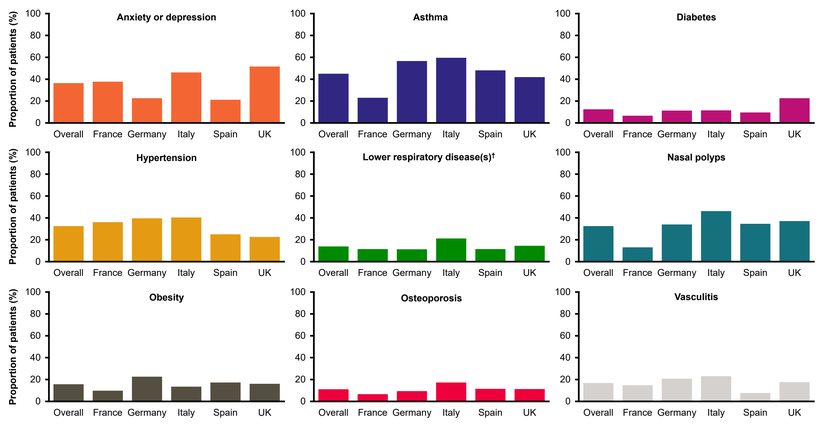


Clinical manifestations were assessed during the detailed natural course of disease period between index date and the end of follow-up (earliest of death, loss to follow-up or date of chart abstraction).

Conclusions

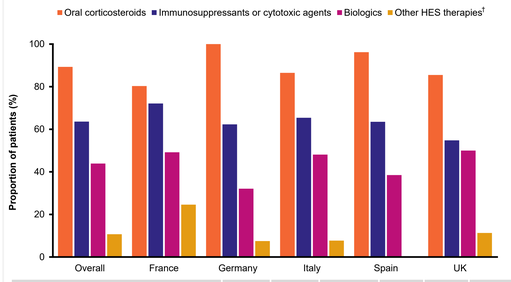
- The results of this retrospective chart review study demonstrate that patients with HES from five European countries have substantial burden of disease.
- In particular, there were considerable differences in patient characteristics, disease characteristics and treatment strategies across Europe.
  - Asthma was the most common comorbidity in Germany, Italy and Spain, compared with anxiety or depression in France and the UK; ear, nose and throat manifestations were more common in Italy and Spain than in other European countries; a greater proportion of patients experienced flares in Italy and Spain; and biologics use was less prevalent in Spain and Germany.
- These differences likely contribute to challenges in the diagnosis and management of HES and highlight the need for a common strategy to address these difficulties.

Figure 2. The most common comorbidity overall among patients with HES was asthma, whereas anxiety or depression were more prevalent specifically in France and the UK*



*Clinical manifestations, comorbidities and cancer diagnoses were assessed between HES diagnosis and the end of follow-up (earliest of death, loss to follow-up, or date of chart abstraction); †other than asthma and COPD.

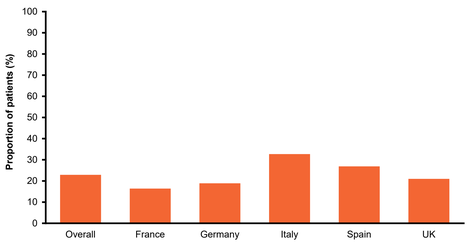
Figure 3. Oral corticosteroids were the most common treatment class for the overall population and per country*



	Overall	France	Germany	Italy	Spain	UK
Maximum daily dose for maintenance therapy, mean (SD), mg	31.7 (19.1)	31.6 (20.2)	28.0 (18.1)	24.8 (16.8)	42.4 (19.6)	32.0 (17.7)
Duration across all maintenance therapy, mean (SD), months	23.5 (27.8)	17.5 (19.0)	22.3 (18.7)	43.5 (54.3)	22.0 (18.3)	17.9 (12.0)
Number of distinct HES therapies used per patient, mean (SD)	2.5 (1.5)	2.6 (1.3)	2.6 (1.7)	2.6 (1.8)	2.3 (1.2)	2.3 (1.2)
Proportion of patients using ≥3 distinct HES therapies, n (%)	109 (39)	29 (48)	20 (38)	22 (42)	18 (35)	20 (32)

*Treatment patterns for HES therapies were assessed between HES diagnosis and the end of follow-up (earliest of death, loss to follow-up or date of chart abstraction); †other HES therapies included: immunoglobulin, ivermectin, warfarin, stem cell transplant, other steroids, and albendazole.

Figure 4. Overall, more than 20% of patients experienced flares during the detailed natural course of disease, with a larger proportion of patients affected in Spain and Italy*



	Overall	France	Germany	Italy	Spain	UK
Number of flares per year† mean (SD)	0.5 (0.3)	0.7 (0.6)	0.6 (0.3)	0.5 (0.2)	0.3 (0.2)	0.6 (0.3)
Duration of flare(s), cumulative mean (SD), months†	2.9 (3.2)	4.8 (6.3)	2.4 (1.6)	2.1 (1.8)	4.2 (2.9)	1.6 (1.2)

*A flare was defined as the worsening of HES-related clinical symptoms or AEC requiring therapy escalation (e.g. increase in current therapy dosage or addition of new therapy). Flares were assessed during the detailed natural course of disease period between index date and the end of follow-up (earliest of death, loss to follow-up or date of chart abstraction); †calculated from patients with ≥1 flare. Duration of flare was calculated as the sum of durations for all reported flares.

References

1. Curtis C, Ogbogu P. *Clin Rev Allergy Immunol* 2016;50(2):240–51.
2. Shomali W, Gotlib J. *Am J Hematol* 2019;94(10):1149–67.
3. Ogbogu PU, et al. *J Allergy Clin Immunol* 2009;124(6):1319–25.

Abbreviations

AEC, absolute eosinophil count; COPD, chronic obstructive pulmonary disease; HES, hypereosinophilic syndrome; SD, standard deviation; UK, United Kingdom.

Disclosures

- This study was funded by GSK (GSK ID: 214657).
- On behalf of all authors, an audio recording of this poster was prepared by Jeremiah Hwee, who did not receive any payment for this recording.
- **JH**, **NK**, **RA-C**, **LB**, **GR** and **RWJ** are employees of GSK and hold stocks in GSK. **SD**, **AK**, **LH** and **MSD** are employees of Analysis Group, Inc., which received funding from GSK for this study.
- Editorial support (in the form of writing assistance, including preparation of the draft poster under the direction and guidance of the authors, collating and incorporating authors' comments for each draft, assembling tables and figures, grammatical editing and referencing) was provided by Ben Usher, PhD and Ciara Keogh, PhD, at Fishawack Indicia Ltd, part of Fishawack Health, and was funded by GSK.

Presented at the European Hematology Association Hybrid Congress, Vienna, Austria, June 9–17, 2022

Healthcare Utilization of Patients with Hypereosinophilic Syndrome in Europe

Poster No. P1034

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Introduction

HES is a rare group of blood disorders characterised by prolonged eosinophilia that can lead to tissue and organ damage.[1,2] Clinical manifestations of HES occur in multiple organ systems, most commonly the heart, nervous system, gastrointestinal tract, skin and lungs, owing to eosinophilic infiltration.[1-3]

The current standard of care comprises high-dose oral corticosteroids, despite the risks associated with high doses or long exposure and antineoplastic agents for those with more severe disease or who are unresponsive to steroids.[1-3]

Healthcare resource utilization (HCRU) is not well characterised in patients with HES, and data from clinical trials may not be representative of the general disease population encountered in real-world settings.

The aim of this retrospective chart review study was to describe HES-related HCRU among a real-world cohort of patients with HES in Europe.

Methods

Study design (GSK ID: 214657)

Real world | Retrospective | Chart review

Patient eligibility criteria

- ≥6 years of age
- Confirmed HES diagnosis
- ≥ 1 year of follow-up data from index

N=280

Index period*

First physician encounter after HES diagnosis: Jan 2015 to Dec 2019

HES diagnosis date → End of follow-up†

Abbreviated patient history‡

Detailed natural course of disease§

Chart review conducted by 121 physicians in 5 European countries: France, Germany, Italy, Spain, UK

Study outcomes

- Length of stay
- HES-related hospitalisations and outpatient visits
- HES-related ER visits
- Monitoring of adverse effects of using IS medications

*Date of first physician encounter after HES diagnosis between January 2015 and December 2019; †earliest of death, loss to follow-up or date of chart abstraction; ‡as available in the patient's chart (e.g. demographics); §includes assessment of HCRU.

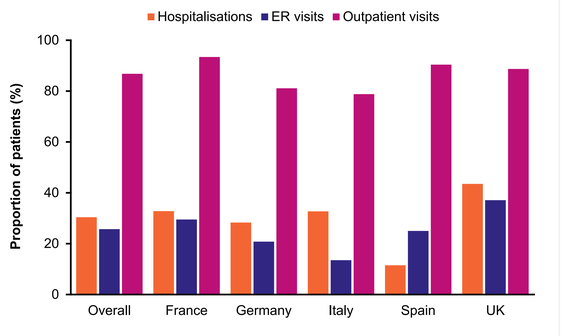
Results

Table 1. Patient demographics and clinical characteristics

	Overall (N=280)
Age at HES diagnosis, mean (SD), years	42.4 (16.2)
Male, n (%)	182 (65.0)
Country, n (%)	
France	61 (21.8)
Germany	53 (18.9)
Italy	52 (18.6)
Spain	52 (18.6)
UK	62 (22.1)
Disease subtype, n (%)	
Idiopathic	155 (55.4)
Lymphocytic	42 (15.0)
Myeloid	66 (23.6)
Other	2 (0.7)
Unknown	15 (5.4)
Disease duration*, mean (SD), years	4.0 (4.5)
Length of follow-up†, mean (SD), years	2.8 (1.4)
Comorbidities‡, n (%)	
Anxiety or depression	102 (36.4)
Asthma	126 (45.0)
Diabetes	35 (12.5)
Hypertension	91 (32.5)
Lower respiratory disease(s), other than asthma and COPD	39 (13.9)
Nasal polyps	91 (32.5)
Obesity	44 (15.7)
Osteoporosis	31 (11.1)
Vasculitis	47 (16.8)

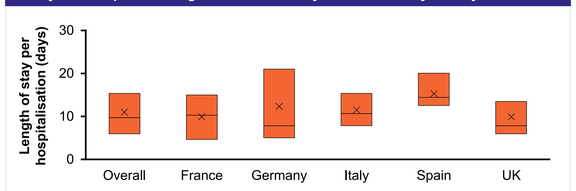
*Disease duration was calculated as the time between HES diagnosis and the end of follow-up; †length of follow-up was calculated as the time between index date and the end of follow-up; ‡comorbidities were assessed between HES diagnosis and the end of follow-up and are presented for those which represent ≥10% patients.

Figure 1. The proportion of patients with outpatient visits was consistently high across all countries, while the UK had the highest proportion of patients with hospital or ER visits*



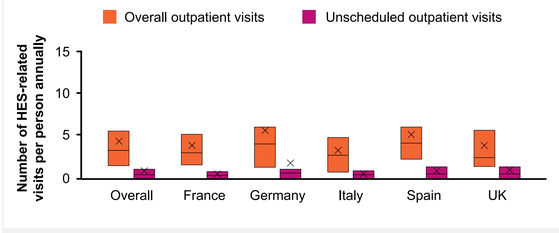
*HES-related visits were assessed during the detailed natural course of disease period between index date and the end of follow-up.

Figure 2. The mean length of stay per HES-related hospitalisation was 11 days with Spain having a mean of 15 days and Germany 12 days*



*HES-related visits were assessed during the detailed natural course of disease period between index date and the end of follow-up. Boxes represent median and interquartile range; X represent mean.

Figure 3. Overall, patients with HES attended >4 outpatient visits per year; German patients had a mean of almost 6 visits a year and Spanish patients had a mean of 5 visits a year*

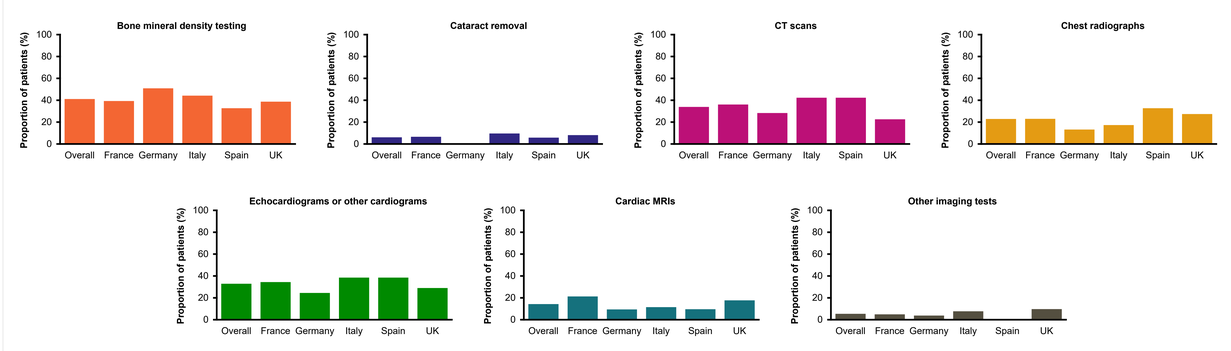


*HES-related visits were assessed during the detailed natural course of disease period between index date and the end of follow-up. Boxes represent median and interquartile range; X represent mean.

Conclusions

- These results demonstrate that in real-world clinical practice, patients with HES have substantial HCRU, including lengthy hospitalisations, ER visits and outpatient visits.
  - Almost 1 in 3 patients had a hospitalisation and the mean length of stay per hospitalisation was 11 days.
  - Over 86% of patients in the overall population required outpatient visits.
- There were also distinct differences in the HES-related healthcare burden across Europe; the UK had the highest proportion of patients needing hospitalisation (44%) or ER visits (37%). The differences observed in healthcare burden across Europe could be owing to country-specific guidelines, healthcare delivery and access to hospitals/emergency services.
- Monitoring of complications and adverse effects of immunosuppressive treatments was not consistently performed across all countries.
- These observations highlight the need for novel treatment strategies, to relieve the disease-related burden for patients with HES and to ameliorate the burden on healthcare systems.

Figure 4. Monitoring of complications or adverse effects when using immunosuppressive medications was not consistently performed in patients with HES, and varied by country



*HES-related tests were assessed during the detailed natural course of disease period between index date and the end of follow-up.

References

1. Curtis C, Ogbogu P. *Clin Rev Allergy Immunol* 2016;50(2):240–51.
2. Shomali W, Gotlib J. *Am J Hematol* 2019;94(10):1149–67.
3. Ogbogu PU, et al. *J Allergy Clin Immunol* 2009;124(6):1319–25.

Abbreviations

COPD, chronic obstructive pulmonary disease; CT, computed tomography; ER, emergency room; HCRU, healthcare resource utilization; HES, hypereosinophilic syndrome; MRI, magnetic resonance imaging; SD, standard deviation; UK, United Kingdom.

Disclosures

- This study was funded by GSK (GSK ID: 214657).
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Presented at the European Hematology Association Hybrid Congress, Vienna, Austria, June 9–17, 2022

Country Differences in the Clinical Manifestations and Treatment Patterns of Patients with Eosinophilic Granulomatosis with Polyangiitis (EGPA): A European Perspective

Poster No. HSD58

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*Affiliation at the time of this study

Introduction

EGPA is a rare heterogeneous chronic disease characterised by the combination of small to medium vessel vasculitis, hypereosinophilia, eosinophilic tissue inflammation and the presence of asthma and/or chronic rhinosinusitis with/without nasal polyposis.[1–3]

Clinical manifestations of EGPA can affect multiple organ systems and can cause significant and, in some cases, life-threatening organ damage if untreated.[4,5]

OCS, immunosuppressants and more recently biologics are all included in EGPA treatment guidelines, but level of evidence for their use is low in most cases and little is known about real-world treatment patterns.[6]

Owing to the rarity of EGPA, published literature on the burden of EGPA in Europe is limited.[7]

This chart review study, describes differences in the real-world EGPA-related clinical manifestations, clinical outcomes and treatment patterns between 5 countries, using the largest European multi-country cohort of patients with EGPA.

Methods

Study design (GSK ID: 214661)

Real world | Retrospective | Chart review

Patient eligibility criteria
- ≥12 years of age
- Confirmed EGPA diagnosis
- ≥1 year of follow-up data from index*

N=407

Chart review conducted by 204 physicians† in 5 European countries: France, Germany, Italy, Spain, UK

Index date
First physician encounter after or at EGPA diagnosis: Jan 2015 to Dec 2019

EGPA diagnosis date → Patient history§ → Follow-up → End of follow-up‡

- Patient history§: Patient demographics; Disease characteristics; Comorbidities; Treatment patterns
- Follow-up: Clinical manifestations; Clinical outcomes

All outcomes assessed overall and by country

*Except where follow-up ended due to death; †recruited from targeted specialties of rheumatology (44%), pulmonology (37%), allergy (13%), and immunology (6%); ‡earliest of death, loss to follow-up or date of chart abstraction; §as available in the patient's chart

Results

Table 1. Patient demographics and clinical characteristics

	Overall (N=407)	France (N=81)	Germany (N=80)	Italy (N=80)	Spain (N=85)	UK (N=81)
Male, n (%)	231 (56.8)	51 (63.0)	44 (55.0)	47 (58.8)	42 (49.4)	47 (58.0)
Age at EGPA diagnosis, median (IQR), years	45 (33, 54)	49 (37, 57)	45 (30, 56)	40 (28, 50)	45 (35, 53)	45 (37, 53)
≥18 years of age, n (%)	383 (94.1)	78 (96.3)	73 (91.3)	74 (92.5)	78 (91.8)	80 (98.8)
Disease duration, median (IQR), years*	2.5 (1.8, 4.1)	2.1 (1.8, 2.9)	2.2 (1.7, 3.1)	3.7 (2.0, 5.9)	2.8 (1.9, 4.4)	2.3 (1.7, 3.5)
Length of follow-up, median (IQR), years	2.2 (1.7, 3.5)	2.0 (1.6, 2.6)	2.2 (1.6, 2.9)	2.9 (1.8, 4.2)	2.3 (1.7, 3.8)	2.1 (1.6, 3.3)
Proportion of patients with asthma,† n (%)	299 (73.5)	66 (81.5)	45 (56.3)	60 (75.0)	64 (75.3)	64 (79.0)
Patients with an asthma diagnosis prior to EGPA diagnosis, n (%)‡	160 (78.0)	39 (78.0)	24 (100.0)	36 (80.0)	33 (64.7)	28 (80.0)
Time from asthma diagnosis to EGPA diagnosis, median (IQR), years	1.8 (0.2, 5.6)	1.2 (0.3, 3.2)	4.4 (2.2, 7.3)	0.1 (0.0, 2.0)	2.9 (0.5, 8.1)	3.6 (0.9, 9.2)
Blood eosinophil count, n (%)	364 (89.4)	77 (95.1)	73 (91.3)	66 (82.5)	75 (88.2)	73 (90.1)
Median BEC (IQR), cells/μL§	1500 (600, 3300)	1500 (875, 2800)	2800 (1200, 4500)	1800 (900, 3000)	1400 (600, 4000)	800 (45, 3200)
Comorbidities and associated conditions, n (%)						
Vasculitis	197 (48.4)	37 (45.7)	35 (43.8)	44 (55.0)	42 (49.4)	39 (48.1)
Hypertension	163 (40.0)	28 (34.6)	32 (40.0)	41 (51.3)	31 (36.5)	31 (38.3)
Anxiety or depression	140 (34.4)	37 (45.7)	16 (20.0)	40 (50.0)	23 (27.1)	24 (29.6)
Lower respiratory disease‖	77 (18.9)	24 (29.6)	8 (10.0)	12 (15.0)	19 (22.4)	14 (17.3)
Osteoporosis	72 (17.7)	8 (9.9)	9 (11.3)	22 (27.5)	21 (24.7)	12 (14.8)
Glomerulonephritis	69 (17.0)	17 (21.0)	15 (18.8)	15 (18.8)	9 (10.6)	13 (16.0)
Obesity	68 (16.7)	8 (9.9)	15 (18.8)	11 (13.8)	21 (24.7)	13 (16.0)
Diabetes	35 (8.6)	4 (4.9)	8 (10.0)	4 (5.0)	11 (12.9)	8 (9.9)
Rheumatoid arthritis	20 (4.9)	10 (12.3)	2 (2.5)	3 (3.8)	4 (4.7)	1 (1.2)
Liver disease	11 (2.7)	0 (0.0)	3 (3.8)	0 (0.0)	6 (7.1)	2 (2.5)
Cancer (any)	8 (2.0)	2 (2.5)	0 (0.0)	1 (1.3)	3 (3.5)	2 (2.5)

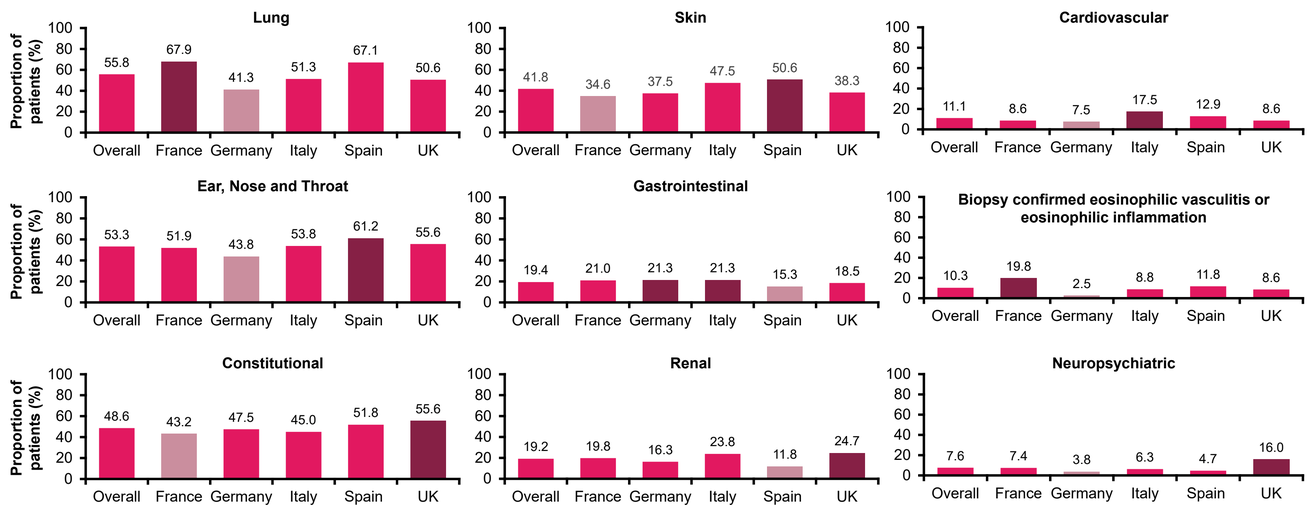
Highest and lowest values across the countries are indicated by the green and red shading, respectively. *Disease duration from diagnosis date to end of follow-up; †asthma assessed from birth to end of follow-up; ‡calculated from the total number of patients who had a reported diagnosis date for asthma: overall (n=205) France (n=50), Germany (n=24), Italy (n=45), Spain (n=51), and UK (n=35); §physicians reported the most recent value between diagnosis and index; ‖other than asthma and COPD

Conclusions

- While a high proportion of patients experienced multiple clinical manifestations across the 5 European countries, the organ systems most commonly affected varied by country, reinforcing the heterogeneity of this rare disease.
- There was also considerable country-by-country variation in clinical outcomes and treatments.
- In comparison to the other European countries, findings were most favourable in Germany with regards to manifestations and clinical outcomes.
  - Furthermore, Germany had the lowest number of distinct EGPA therapies used, potentially reflecting the benefit of consistency of care.
- Together, this study highlights the inconsistencies in treatment approach and outcomes for patients with EGPA across 5 large European countries and the need to optimise disease management to ensure that patients benefit from combined knowledge and consistent care in this rare and chronic disease.

Figure 1. Overall, 58.2% of patients had ≥3 distinct clinical manifestations. The most commonly affected organs varied by country including lungs in France (67.9%) and Spain (67.1%); ENT in the UK (55.6%) and Italy (53.8%); and constitutional in the UK (55.6%) and Germany (47.5%)

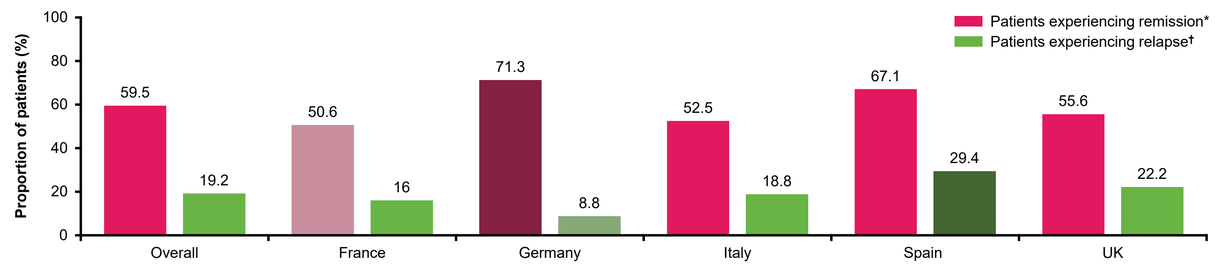
	Overall (n=407)	France (n=81)	Germany (n=80)	Italy (n=80)	Spain (n=85)	UK (n=81)
Number of distinct clinical manifestations						
Mean (SD)	4.0 (3.8)	4.0 (3.8)	3.1 (3.5)	4.1 (3.8)	4.3 (3.5)	4.4 (4.5)
Median (IQR)	3.0 (1.0, 6.0)	3.0 (1.0, 5.0)	2.0 (1.0, 4.0)	3.0 (1.0, 6.0)	3.0 (2.0, 6.0)	4.0 (1.0, 6.0)
Proportion of patients with ≥3 distinct clinical manifestations, n (%)	237 (58.2)	46 (56.8)	36 (45.0)	46 (57.5)	58 (68.2)	51 (63.0)



In the table, highest and lowest values across the countries are indicated by the green and red shading, respectively. In figure panels highest and lowest values across the countries are indicated by darker and lighter tones

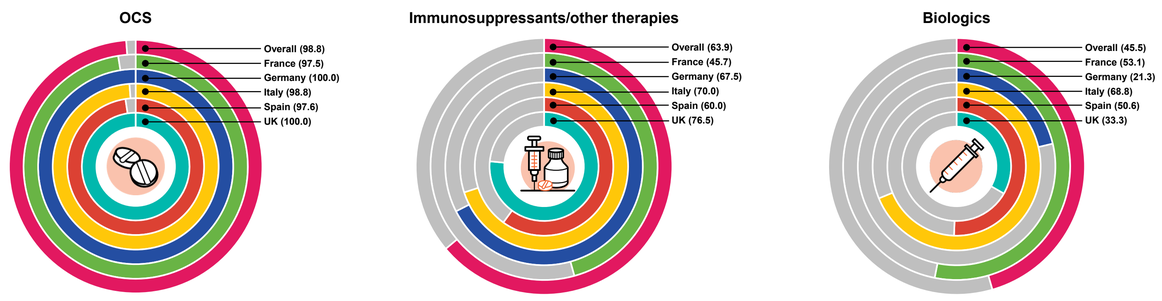
Figure 2. The proportion of patients who experienced remission was highest in Germany (71.3%) and lowest in France (50.6%); the proportion of patients who experienced relapse was lowest in Germany (8.8%) and highest in Spain (29.4%)

	Overall (n=407)	France (n=81)	Germany (n=80)	Italy (n=80)	Spain (n=85)	UK (n=81)
Duration of remission,‡ cumulative months, median (IQR)	12.0 (5.2, 22.2)	11.7 (3.9, 20.6)	15.7 (10.0, 27.8)	6.9 (2.3, 16.2)	8.3 (4.0, 20.0)	12.0 (7.4, 22.2)
Time from EGPA diagnosis to first remission, months, median (IQR)	14.5 (7.5, 26.9)	14.8 (6.9, 23.8)	8.1 (3.8, 14.0)	27.0 (17.9, 36.8)	19.1 (12.9, 37.0)	9.7 (6.9, 17.0)
Number of relapses,§ PPPY, mean (SD)	0.8 (1.0)	0.6 (0.3)	0.5 (0.4)	0.9 (0.4)	0.9 (0.8)	1.1 (1.9)



Remission or relapse occurring between index and the end of follow-up. In the table, highest and lowest values across the countries are indicated by the green and red shading, respectively. *Remissions (physician defined) reported for those patients who had ≥1 remission(s); †relapse was defined as a recurrence or worsening of EGPA symptoms requiring an increasing OCS dose, an increase/change in dose of immunosuppressive therapy, hospitalisation, or other definitions of relapse; ‡for patients who had >1 remission, the duration of remission was calculated as the sum of durations of remission for all reported remissions; §annualised relapse count calculated as relapses PPPY for those patients who experienced ≥1 relapse

Figure 3. OCS use was high in all countries, ranging between 97.5% in France to 100.0% in Germany and the UK; conversely, immunosuppressant and biologic use varied by country with immunosuppressants/other therapies ranging from 45.7% in France to 76.5% in the UK and biologic use ranging from 21.3% in Germany to 68.8% in Italy



	Overall	France	Germany	Italy	Spain	UK
Number of distinct EGPA therapies used						
Mean (SD)	3.9 (1.8)	3.9 (2.1)	3.3 (1.7)	4.4 (1.7)	4.2 (1.6)	3.8 (1.7)
Median (IQR)	4.0 (2.0, 5.0)	4.0 (2.0, 5.0)	3.0 (2.0, 4.0)	4.0 (3.0, 5.0)	4.0 (3.0, 5.0)	4.0 (3.0, 5.0)
Maximum daily OCS dose, mg, mean (SD)*	30.2 (19.8)	35.8 (18.9)	28.8 (19.9)	19.9 (16.2)	34.0 (19.8)	31.6 (20.4)
Other treatments for EGPA-related clinical manifestations, n (%)†	302 (74.2)	54 (66.7)	50 (62.5)	73 (91.3)	69 (81.2)	56 (69.1)
Treatments related to the management of clinical conditions, n (%)‡	238 (58.5)	43 (53.1)	43 (53.8)	55 (68.8)	50 (58.8)	47 (58.0)

In the table, highest and lowest values across the countries are indicated by the green and red shading, respectively. *Receipt of ≥1 type of OCS was counted as a single therapy; †includes albuterol, analgesics, budesonide – formoterol, doxazosin, ipratropium bromide, levalbuterol, montelukast, ramipril, theophylline, tiotropium, valsartan, zafirlukast; ‡treatments related to the management of clinical conditions were assessed during the follow-up period. Included treatments: to improve bone mineral density and for: infections related to EGPA therapies; recovering cytopenia; haemorrhagic cystitis; hepatotoxicity; gastrointestinal toxicity, and thyroid hormone replacement therapy; insulin and folic acid supplements

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6. Chung SA, et al. *Arthritis Rheumatol* 2021;73:1366–83
7. Jakes RW, et al. *Clin Rheumatol* 2021;40:4829–36

Abbreviations

BEC, blood eosinophil count; COPD, chronic obstructive pulmonary disease; EGPA, eosinophilic granulomatosis with polyangiitis; ENT, ear, nose and throat; IQR, interquartile range; OCS, oral corticosteroid; PPPY, per person per year; SD, standard deviation; UK, United Kingdom

Disclosures

- This study was funded by GSK (Study 214661).
- On behalf of all authors, an audio recording of this poster was prepared by Rupert W. Jakes, who did not receive any payment for this recording.
- **RWJ**, **JH**, **LB**, **RA-C** are employees of GSK and hold stocks/shares in GSK. **NK** was an employee of GSK at the time of the study and holds stocks/shares in GSK. **LH**, **AK** and **MSD** are employees of the Analysis Group, Inc., which received funding from GSK to conduct the study. **SD** was an employee of Analysis Group, Inc., at the time of the study, which received funding from GSK to conduct the study.
- Editorial support (in the form of writing assistance, including preparation of the draft poster under the direction and guidance of the authors, collating and incorporating authors' comments for each draft, assembling tables and figures, grammatical editing and referencing) was provided by Laura Murch, PhD and Alice Rees, PhD, at Fishawack Indicia Ltd, UK, part of Fishawack Health, and was funded by GSK.

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Poster presented at International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Europe, 6–9 November 2022, Vienna, Austria

Healthcare Utilisation of Patients with Eosinophilic Granulomatosis with Polyangiitis (EGPA): A European Perspective

Poster No. EE607

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Introduction

EGPA is a rare disease characterised by the combination of vasculitis, elevated blood eosinophil count ≥1000 cells/μL and asthma.[1–3]

EGPA manifestations can affect a variety of organ systems and can be serious and even life threatening if left untreated.[1,4] Treatment relies heavily on the use of OCS in combination with immunosuppressive treatments; however, serious adverse effects are associated with long-term use.[5,6]

A US claims database study found greater HCRU for patients with EGPA compared with patients with asthma.[7] There have been few European studies of EGPA-related HCRU and to our knowledge, comparisons between European countries have not previously been studied.[8]

This chart review study describes real-world the EGPA-related HCRU across 5 countries, using the largest multi-country European cohort of patients with EGPA.

Methods

Study design (GSK ID: 214661)

Real world | Retrospective | Chart review

Patient eligibility criteria

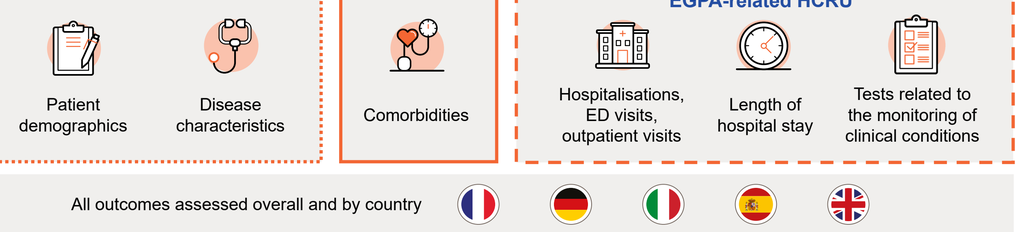
- ≥12 years of age
- Confirmed EGPA diagnosis
- ≥1 year of follow-up data from index*

N=407

Chart review conducted by 204 physicians† in 5 European countries: France, Germany, Italy, Spain, UK

Index date

First physician encounter after or at EGPA diagnosis: Jan 2015 to Dec 2019



All outcomes assessed overall and by country

*Except where follow-up ended due to death; †recruited from targeted specialties of rheumatology (44%), pulmonology (37%), allergy (13%), and immunology (6%); ‡earliest of death, loss to follow-up or date of chart abstraction; §as available in the patient's chart

Results

Table 1. Patient demographics and clinical characteristics

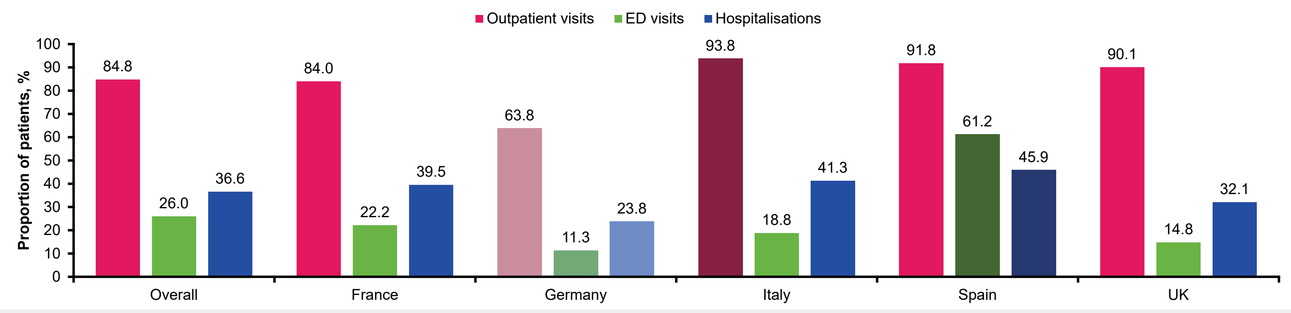
	Overall (N=407)	France (N=81)	Germany (N=80)	Italy (N=80)	Spain (N=85)	UK (N=81)
Male, n (%)	231 (56.8)	51 (63.0)	44 (55.0)	47 (58.8)	42 (49.4)	47 (58.0)
Age at EGPA diagnosis, median (IQR), years	45 (33, 54)	49 (37, 57)	45 (30, 56)	40 (28, 50)	45 (35, 53)	45 (37, 53)
≥18 years of age, n (%)	383 (94.1)	78 (96.3)	73 (91.3)	74 (92.5)	78 (91.8)	80 (98.8)
Disease duration, median (IQR), years*	2.5 (1.8, 4.1)	2.1 (1.8, 2.9)	2.2 (1.7, 3.1)	3.7 (2.0, 5.9)	2.8 (1.9, 4.4)	2.3 (1.7, 3.5)
Length of follow-up, median (IQR), years	2.2 (1.7, 3.5)	2.0 (1.6, 2.6)	2.2 (1.6, 2.9)	2.9 (1.8, 4.2)	2.3 (1.7, 3.8)	2.1 (1.6, 3.3)
Proportion of patients with asthma, n (%)†	299 (73.5)	66 (81.5)	45 (56.3)	60 (75.0)	64 (75.3)	64 (79.0)
Patients with an asthma diagnosis prior to EGPA diagnosis, n (%)‡	160 (78.0)	39 (78.0)	24 (100.0)	36 (80.0)	33 (64.7)	28 (80.0)
Time from asthma diagnosis to EGPA diagnosis, median (IQR), years	1.8 (0.2, 5.6)	1.2 (0.3, 3.2)	4.4 (2.2, 7.3)	0.1 (0.0, 2.0)	2.9 (0.5, 8.1)	3.6 (0.9, 9.2)
Blood eosinophil count, n (%)	364 (89.4)	77 (95.1)	73 (91.3)	66 (82.5)	75 (88.2)	73 (90.1)
Median BEC (IQR), cells/μL§	1500 (600, 3300)	1500 (875, 2800)	2800 (1200, 4500)	1800 (900, 3000)	1400 (600, 4000)	800 (45, 3200)
Comorbidities and associated conditions, n (%)						
Vasculitis	197 (48.4)	37 (45.7)	35 (43.8)	44 (55.0)	42 (49.4)	39 (48.1)
Hypertension	163 (40.0)	28 (34.6)	32 (40.0)	41 (51.3)	31 (36.5)	31 (38.3)
Anxiety or depression	140 (34.4)	37 (45.7)	16 (20.0)	40 (50.0)	23 (27.1)	24 (29.6)
Lower respiratory disease¶	77 (18.9)	24 (29.6)	8 (10.0)	12 (15.0)	19 (22.4)	14 (17.3)
Osteoporosis	72 (17.7)	8 (9.9)	9 (11.3)	22 (27.5)	21 (24.7)	12 (14.8)
Glomerulonephritis	69 (17.0)	17 (21.0)	15 (18.8)	15 (18.8)	9 (10.6)	13 (16.0)
Obesity	68 (16.7)	8 (9.9)	15 (18.8)	11 (13.8)	21 (24.7)	13 (16.0)
Diabetes	35 (8.6)	4 (4.9)	8 (10.0)	4 (5.0)	11 (12.9)	8 (9.9)
Rheumatoid arthritis	20 (4.9)	10 (12.3)	2 (2.5)	3 (3.8)	4 (4.7)	1 (1.2)
Liver disease	11 (2.7)	0 (0.0)	3 (3.8)	0 (0.0)	6 (7.1)	2 (2.5)
Cancer (any)	8 (2.0)	2 (2.5)	0 (0.0)	1 (1.3)	3 (3.5)	2 (2.5)

Highest and lowest values across the countries are indicated by the green and red shading, respectively. *Disease duration was calculated from diagnosis date to end of follow-up; †asthma assessed from birth to end of follow-up; ‡ calculated from the total number of patients who had a reported diagnosis date for asthma: overall (n=205), France (n=50), Germany (n=24), Italy (n=45), Spain (n=51), and UK (n=35); §physicians reported the most recent value between diagnosis and index; ¶other than asthma and COPD

Conclusions

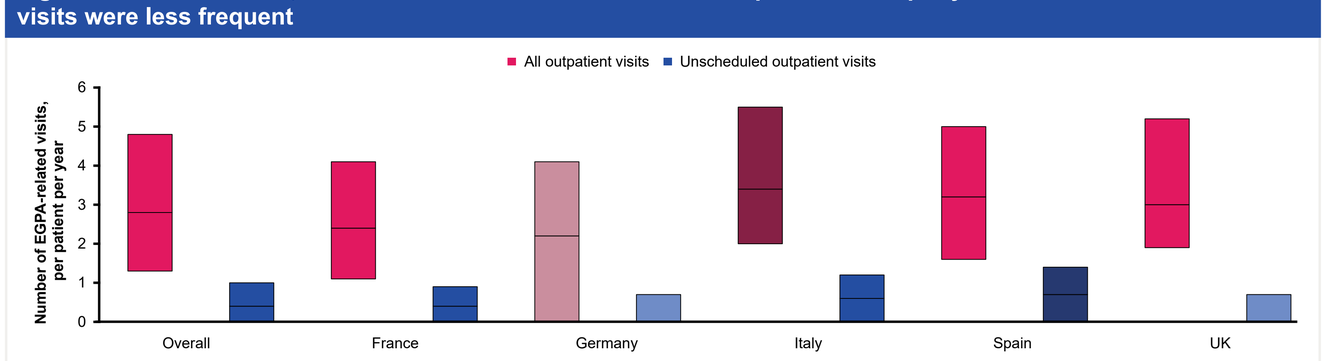
- Together, results highlight a considerable burden of HCRU for patients with EGPA as well as variation across the 5 European countries studied.
- Overall, 85% of patients required EGPA-related outpatient visits; this was lowest in Germany and highest in Italy.
  - Despite most patients having multiple outpatient visits per year, 26% required ED visits and 37% required hospitalisation overall.
  - The proportion of patients who required EGPA-related ED visits and hospitalisations as well as the mean length of hospital stay were all the lowest in Germany and highest in Spain.
- The delivery of EGPA-related medical procedures and the monitoring of clinical conditions were applied inconsistently across countries.
- Country variations in EGPA-related HCRU suggests differences in disease management, potentially due to differences in healthcare systems between these countries.
- Future studies are needed to understand the reasons for the variation in HCRU between these European countries to identify strategies to reduce the burden of disease for patients with EGPA.

Figure 1. Overall, 84.8% of patients had outpatient visits, 36.6% required hospitalisation and 26.0% had ED visits, all of which were lowest in Germany



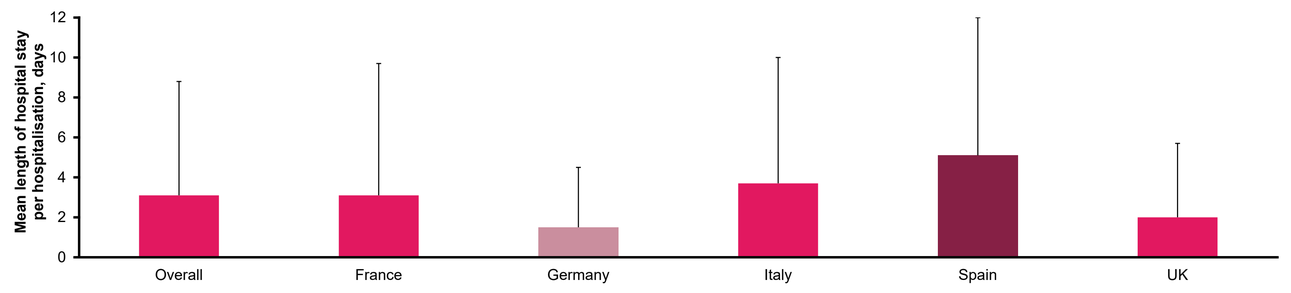
Data were analysed between the index date and the end of the follow-up; median follow-up time per country varied as shown in Table 1. Darker and lighter tones represent highest and lowest reported values in each category

Figure 2. In all countries, the median number of EGPA-related outpatient visits per year was >2 but unscheduled visits were less frequent



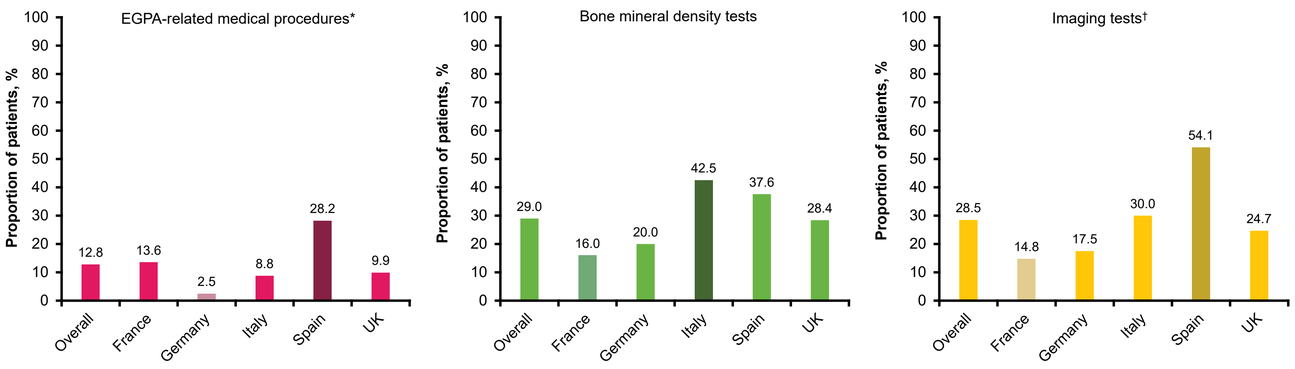
Data were analysed between index and the end of follow-up; EGPA-related visits were reported on a per patient per year basis to account for differences in the length of follow-up. Box plots represent median and IQR. Darker and lighter tones represent highest and lowest reported values in each category

Figure 3. The mean length of EGPA-related hospital stays per hospitalisation was 3.1 days which varied from 1.5 days in Germany to 5.1 days in Spain



Data were analysed between the index date and the end of the follow up; median follow-up time per country varied as shown in Table 1. Error bars represent +SD. Darker and lighter tones represent highest and lowest reported values in each category

Figure 4. Tests and procedures related to the monitoring of clinical conditions included almost a third of patients having bone mineral density and imaging tests while EGPA-related medical procedures were less frequent



- Overall, 1.2% of patients required cataract removal during follow-up (France: 2.5%; Germany: 0.0%; Italy: 2.5%; Spain: 1.2%; UK: 0.0%)

Data were analysed between the index date and the end of the follow-up; median follow-up time per country varied as shown in Table 1. Darker and lighter tones represent highest and lowest reported values in each category. *e.g. plasma exchange; †e.g. CT scans, chest radiographs

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Abbreviations

BEC, blood eosinophil count; COPD, chronic obstructive pulmonary disease; CT, computed tomography; EGPA, eosinophilic granulomatosis with polyangiitis; ED, emergency department; HCRU, healthcare resource utilisation; IQR, interquartile range; OCS, oral corticosteroid; SD, standard deviation; UK, United Kingdom; US, United States

Disclosures

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- Editorial support (in the form of writing assistance, including preparation of the draft poster under the direction and guidance of the authors, collating and incorporating authors' comments for each draft, assembling tables and figures, grammatical editing and referencing) was provided by Alice Rees, PhD, at Fishawack Indicia Ltd, UK, part of Fishawack Health, and was funded by GSK.

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