EE564

Treatment Patterns and Disease Burden of Patients with Hypereosinophilic Syndrome (HES) and Eosinophilic Granulomatosis with Polyangiitis (EGPA) Across Five European Countries

Digital poster

Digital handout

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Introduction

HES and EGPA are rare systemic inflammatory diseases with substantial overlap in clinical presentation:[1,2]

- Both HES and EGPA are characterised by sustained elevated blood eosinophil counts (≥1500 cells/µL in HES, ≥1000 cells/µL in EGPA) and eosinophilic tissue infiltration leading to tissue and end-organ damage[2–5]
- EGPA is distinguished from HES by vasculitis of small-to-medium vessels and asthma/respiratory tract involvement[1,4,5]
- Both diseases have a heterogeneous presentation and commonly involve multiple organs[1,3,6–8]

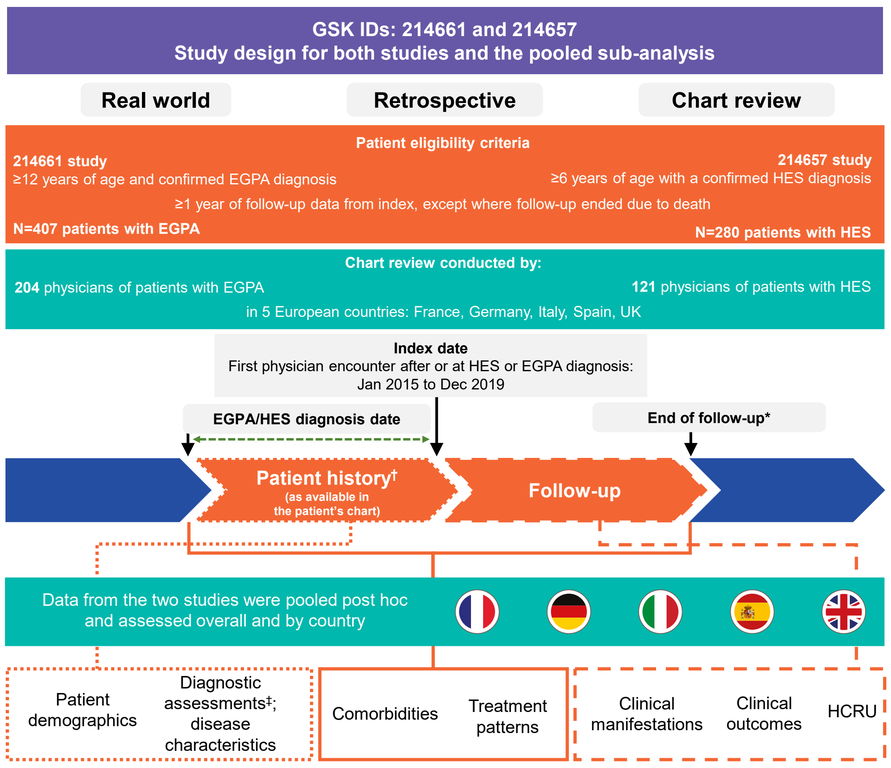
For both EGPA and HES, treatments rely heavily on OCS, with immunosuppressives or biologics as OCS sparing therapies:

- For HES, the current first-line therapy for most subtypes is OCS, with second-line agents including immunosuppressive/cytotoxic therapies, and more recently biologics[3]
- For EGPA, treatment guidelines recommend glucocorticoids with immunosuppressive/cytotoxic therapies or biologics depending on the severity of disease and activity state[9]
- Both OCS and immunosuppressive/cytotoxic therapies have been associated with considerable adverse effects.[3,9–11] Patients with EGPA and HES commonly require chronic OCS use or repeated OCS courses to treat relapse or flares,[3,9] increasing the risk of OCS adverse effects[11,12]

HES and EGPA have recently been investigated in two parallel retrospective, non-interventional, longitudinal chart review studies conducted in five countries in Europe: France, Germany, Italy, Spain and the UK[13–18]

This analysis of the pooled population from HES and EGPA studies aimed to describe country by country similarities and differences in the characteristics, management and HCRU of patients with HES or EGPA in a real-world European setting

Methods



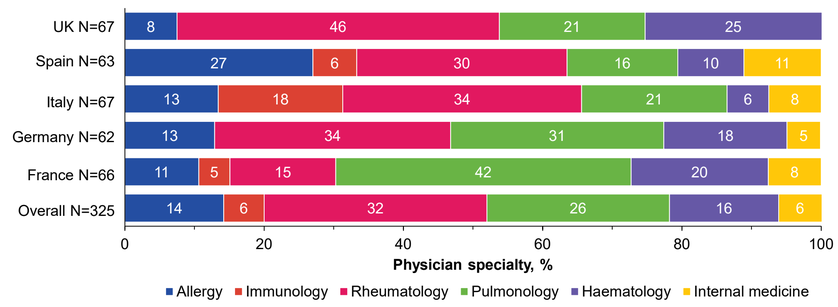
*Earliest of death, loss to follow-up or date of chart abstraction; †for patients diagnosed with EGPA/HES before the index date data from diagnosis to index were collected from the patient's chart. Patient demographics and baseline clinical characteristics were identified; ‡includes blood eosinophil counts.

Conclusion

- This analysis of data from two retrospective longitudinal chart reviews, involving a total of almost 700 patients with HES or EGPA, shows a consistently high burden of disease across the five European countries, with some differences in disease management and HCRU
  - There was notable variability in the managing physician specialty; however, differences in the management of the diseases were subtle. For example, over 90% of patients across all five countries were treated with OCS, with a median duration of 18 to 27 months
  - Large differences were seen in the use of biologics which ranged from 26% in Germany to 60% in Italy and use of the most common biologic, mepolizumab, varied from 7% in Germany to 36% in Italy. The variability in the use of these OCS sparing therapies,[19,20] suggests biologics may be underutilised
  - The most frequent clinical manifestations across all five countries were fatigue and manifestations of the lung, ENT and skin. Pain and cardiovascular manifestations were twice as common in Spain and Italy, respectively, compared with the UK
  - Across all the countries, over a quarter of patients were hospitalised, up to half had ED visits and over 70% made outpatient visits. These three measures of HCRU were all lowest for Germany
- The high use of OCS and the notable rates of hospitalisations and ED visits, observed across all the countries, highlight the need for further improvements in the management of patients with HES and EGPA

Results

Figure 1: The distribution of physician speciality varied by country and most physicians were based in an academic practice setting



Primary practice setting,* n (%)	Overall N=325	France N=66	Germany N=62	Italy N=67	Spain N=63	UK N=67
Academic-based	222 (68)	34 (52)	40 (65)	43 (64)	58 (92)	47 (70)
Community-based	108 (33)	33 (50)	22 (36)	27 (40)	5 (8)	21 (31)

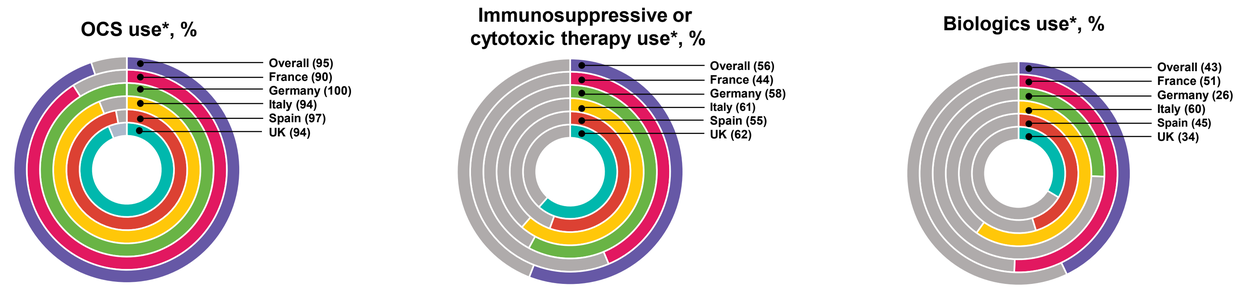
*The highest and lowest values (or proportions) in each row are highlighted in pink and green, respectively. *Physicians were allowed to select more than one practice setting.*

Table 1: Patient characteristics were mostly consistent across the five European countries, with some variation; disease duration was longest in Italy and shortest in Germany and a higher proportion of patients from Italy had comorbidities

Patient characteristics	Overall (N=687)*	France (N=142)	Germany (N=133)	Italy (N=132)	Spain (N=137)	UK (N=143)
Male, n (%)	413 (60)	97 (68)	72 (54)	77 (58)	80 (58)	87 (61)
Age at EGPA/HES diagnosis, mean (SD), years	42.9 (15.4)	46.4 (14.5)	42.1 (16.5)	40.0 (15.1)	42.6 (13.9)	43.0 (16.5)
≥18 years, n (%)	643 (94)	139 (98)	120 (90)	122 (92)	128 (94)	134 (94)
Disease duration†, median (IQR), years	2.6 (1.8, 4.1)	2.4 (1.8, 4.0)	2.3 (1.8, 2.9)	3.2 (2.0, 5.7)	2.8 (1.8, 4.4)	2.4 (1.7, 3.8)
Diagnostic assessments,‡ n (%)						
Blood eosinophilia	642 (93)	132 (93)	127 (95)	119 (90)	129 (94)	135 (94)
Blood tests to screen for autoimmunity (e.g. ANCA)	573 (83)	124 (87)	107 (80)	102 (77)	123 (90)	117 (82)
Imaging scans of affected organs§	539 (78)	114 (80)	102 (77)	93 (70)	119 (87)	111 (78)
Skin or other tissue biopsy¶	203 (30)	37 (26)	41 (31)	39 (30)	57 (42)	29 (20)
Blood eosinophil count‖						
n (%)**	605 (88)	133 (94)	117 (88)	111 (84)	120 (88)	124 (87)
Median (IQR), cells/ µL	1,650.0 (600.0, 3,500.0)	1,800.0 (900.0, 4,580.0)	2,100.0 (1,200.0, 3,700.0)	1,500.0 (500.0, 2,500.0)	1,722.5 (900.0, 3,315.0)	875.0 (79.0, 3,350.0)
Select comorbidities††						
Asthma	425 (62)	80 (56)	75 (56)	91 (69)	89 (65)	90 (63)
Hypertension	254 (37)	50 (35)	53 (40)	62 (47)	44 (32)	45 (31)
Vasculitis	244 (36)	46 (32)	46 (35)	56 (42)	46 (34)	50 (35)
Anxiety or depression	242 (35)	60 (42)	28 (21)	64 (48)	34 (25)	56 (39)
Lower respiratory disease, other than asthma and COPD	116 (17)	31 (22)	14 (11)	23 (17)	25 (18)	23 (16)
Obesity	112 (16)	14 (10)	27 (20)	18 (14)	30 (22)	23 (16)
Osteoporosis	103 (15)	12 (8)	14 (11)	31 (23)	27 (20)	19 (13)
Glomerulonephritis	90 (13)	21 (15)	21 (16)	19 (14)	11 (8)	18 (13)
Diabetes	70 (10)	8 (6)	14 (11)	10 (8)	16 (12)	22 (15)

*Highest and lowest values (or proportions) in each row are highlighted in pink and green, respectively; *includes 407 patients with EGPA and 280 patients with HES; †disease duration was calculated as the time between diagnosis and the end of follow-up; ‡diagnostic assessments were not mutually exclusive categories. Assessments performed in >5% of the overall population are shown. Other diagnostic assessments included 'other test of affected organs' (numbers represent number of patients from overall population): electromyography (2), renal biopsy (2), rhinoscopy (2), biopsy of bronchopulmonary (1), bronchoscopy (1), capillary microscopy (1), cardiology (1), endoscopy (1), next-generation sequencing (1), karyotyping (1), and T-cell clonality testing (1), other tests associated with eye, kidney, skin, lung and urinary systems (7); and 'unknown assessment' (3); §Imaging scans included: chest CT (431), echocardiogram (313), chest radiograph (255), abdominal CT (310), sinus CT (220), cardiac MRI (100), PET (4), complete abdomen scan (1) and scan associated with ENT (1); ¶includes biopsies to detect extravascular eosinophils in patients with EGPA and skin or other tissue biopsies in patients with HES; ‖physicians reported the most recent documented blood eosinophil count values for the patient between the diagnosis date and index date; **patients with BEC data available; ††comorbidities were assessed between HES/EGPA diagnosis and EOF. Select comorbidities present in >10% of the overall population are shown.*

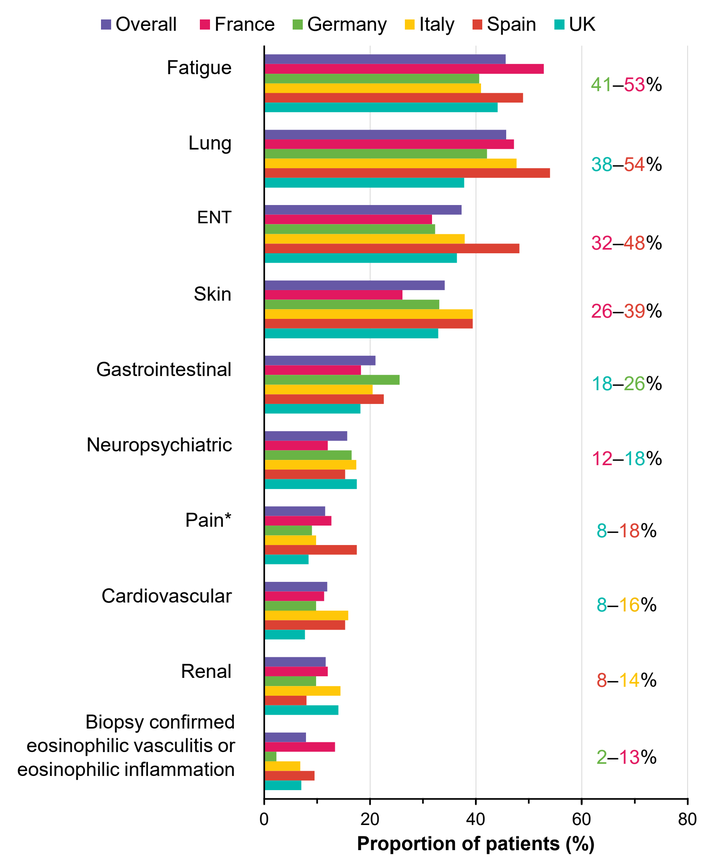
Figure 2: OCS use was consistently high in all countries, use of immunosuppressive or cytotoxic agents varied from 44% in France to 62% in the UK, use of biologics ranged from 26% in Germany to 60% in Italy



Treatment patterns*	Overall (N=687)	France (N=142)	Germany (N=133)	Italy (N=132)	Spain (N=137)	UK (N=143)
Maximum daily dose of maintenance OCS, median (IQR), mg†	30.0 (12.0, 50.0)	32.5 (15.0, 60.0)	25.0 (10.0, 50.0)	15.5 (10.0, 30.0)	35.0 (15.0, 60.0)	30.0 (15.0, 50.0)
Duration of OCS treatment (across all OCS used), median (IQR), months‡	20.7 (9.0, 33.8)	17.6 (7.9, 27.0)	21.3 (9.1, 29.4)	27.3 (16.5, 49.1)	18.6 (5.9, 34.1)	20.2 (11.4, 34.0)
Most common biologics (≥10% of patients), n (%)§						
Mepolizumab	117 (17)	27 (19)	9 (7)	47 (36)	21 (15)	13 (9)
Rituximab	108 (16)	37 (26)	13 (10)	15 (11)	24 (18)	19 (13)

*Highest and lowest values (or proportions) in each row are highlighted in pink and green, respectively. Includes 407 patients with EGPA and 280 patients with HES.*Treatment patterns were assessed between diagnosis and end of follow-up (i.e. last physician encounter or death); †for patients with a reported maximum daily dose for maintenance therapy: overall n=504; France n=98; Germany n=87; Italy n=100; Spain n=104; UK n=115. Patients with reported maximum daily dose for maintenance therapy over 60 mg were removed from the summary of maximum daily dose as these seemed most likely to reflect OCS bursts; ‡for patients who received ≥1 prescriptions for OCS, the duration of therapy was calculated as the sum of durations of therapy across all prescriptions; §other biologics used in the overall population included: benralizumab (n=60), omalizumab (n=31), reslizumab (n=29) and dupilumab (n=23).*

Figure 3: The most common clinical manifestations were fatigue (41–53%) and manifestations of the lung (38–54%), ENT (32–48%) and skin (26–39%)



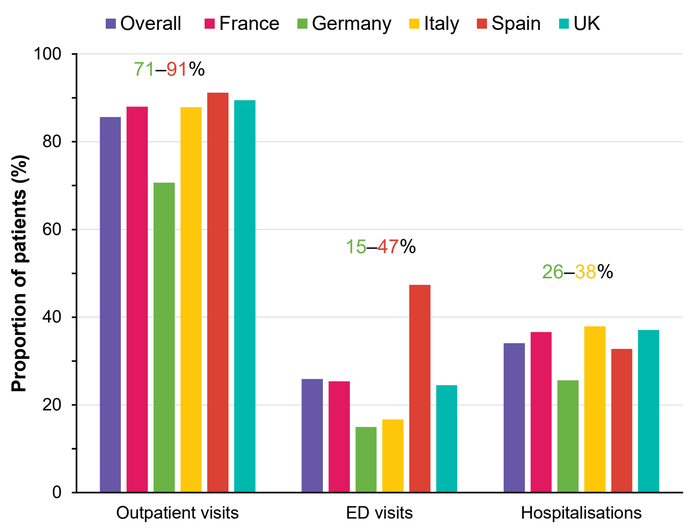
*Ranges indicate highest and lowest values (or proportions) in each category and coloured by country. Includes 407 patients with EGPA and 280 patients with HES. Manifestations occurring between index date to EOF are reported. *Includes myalgia/arthralgia manifestation in patients with EGPA and pain manifestation in patients with HES.*

Table 2: Overall, 2.5% of patients died within the 6-year RMST* period, with the rate varying from 0.7% in France to 4.2% in the UK

Overall survival	Overall (N=687)	France (N=142)	Germany (N=133)	Italy (N=132)	Spain (N=137)	UK (N=143)
Died within 6-year RMST period, n (%)	17 (2.5)	1 (0.7)	3 (2.3)	2 (1.5)	5 (3.6)	6 (4.2)
6-year RMST, years	5.79	5.96	5.83	5.90	5.71	5.58

*Includes 407 patients with EGPA and 280 patients with HES. *RMST is a measure of the average event-free survival time and is estimated by the area under the Kaplan–Meier curve during a specified period of time. It can be interpreted as the average survival time (or life expectancy) within 6 years of follow-up.*

Figure 4: Across the five countries, 71–91% of patients had disease-related outpatient visits, 15–47% had ED visits and 26–38% had hospitalisations; HCRU was consistently lowest in Germany



Ranges indicate highest and lowest values (or proportions) in each category and coloured by country. Includes 407 patients with EGPA and 280 patients with HES. EGPA- and HES-related visits were assessed between index date and EOF. The number of hospitalisations, ED visits and outpatient visits were annualised.

Abbreviations

ANCA, anti-neutrophil, cytoplasmic antibody; BEC, blood eosinophil count; COPD, chronic obstructive pulmonary disease; CT, computed tomography; EGPA, eosinophilic granulomatosis with polyangiitis; ED, emergency department; ENT, ear, nose and throat; EOF, end of follow-up; HES, hypereosinophilic syndrome; HCRU, healthcare resource utilisation; IQR, interquartile range; MRI, magnetic resonance imaging; OCS, oral corticosteroids; PET, positron emission tomography; RMST, restricted mean survival time; SD, standard deviation

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On behalf of all authors, this poster is presented by Waseem Ahmed, an employee of GSK

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