Poster #367

Insights into Lennox-Gastaut Syndrome: A European Real-World Study on Patient Profiles and Unmet Needs

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Overview

QUESTION

We aimed to describe the Lennox-Gastaut Syndrome (LGS) population in Europe, delineated by patient age among European patients in real-world clinical practice.

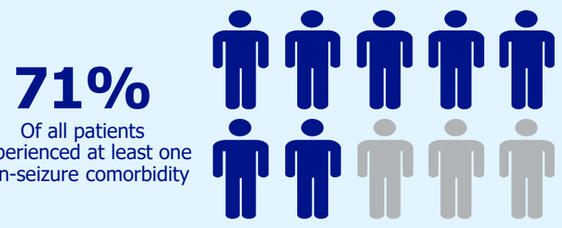
INVESTIGATION

Adelphi Real World LGS Disease Specific Programme™, a cross-sectional survey of physicians and their patients with LGS in France, Germany, Italy, Spain and the United Kingdom (UK) from June 2022 to August 2023.[3,4] Patients were split into age groups: <6 years, 6-18 years and >18 years.

RESULTS

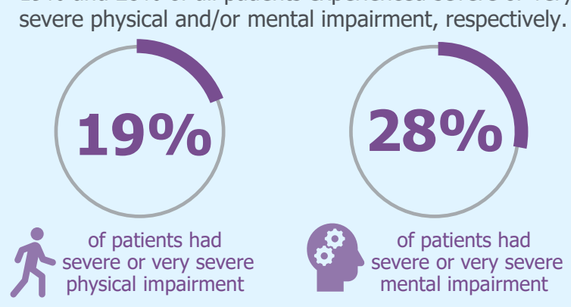
Non-seizure comorbidities

71% of all patients experienced at least one non-seizure comorbidity at the time of the study.



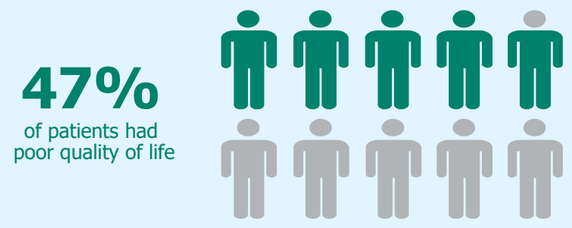
Disease burden

19% and 28% of all patients experienced severe or very severe physical and/or mental impairment, respectively.



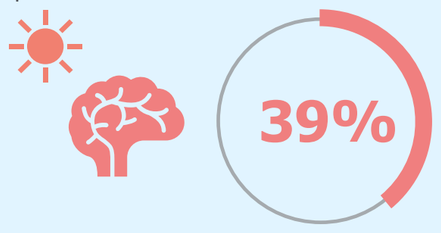
Quality of life

47% of all patients were reported to have at least somewhat poor quality of life.



Seizures experienced

Daytime seizures were reported to have the greatest impact on quality of life for 39% of all patients.



CONCLUSIONS

LGS patients experienced seizure and non-seizure impairments, especially among those in the >18 year group. These data suggest an unmet need for therapies to target both drug-resistant seizures and non-seizure outcomes, to mitigate the long-term poor prognosis of LGS.

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Background

- Lennox-Gastaut syndrome (LGS) is a childhood-onset developmental and epileptic encephalopathy.
- LGS comprises of several seizure types, including tonic seizures, atypical absence seizures and frequent status epilepticus. Electroencephalogram (EEG) shows generalized slow spike waves, and as the disease progresses, cognitive functions deteriorate.[1]
- Numerous approaches are currently used to treat LGS, including use of conventional antiepileptic drugs, other drug interventions and nonpharmacologic treatments.[2]
- Management of LGS is complex as both seizure and non-seizure symptoms progress overtime.

Objective

- To describe the LGS population in Europe, delineated by patient age.

Methods

- Data were drawn from the Adelphi real World LGS Disease Specific Programme™, a cross-sectional survey with elements of retrospective data collection of physicians and their patients with LGS in France, Germany, Italy, Spain and the UK from June 2022 to August 2023.[3,4]
- Paediatric and adult neurologists completed surveys for individual LGS patients as they presented for normal clinical consultations. The surveys collected data on patient demographics, clinical characteristics, including seizure characteristics, non-seizure impairments, use of antiseizure medications, and subjective physician-assessed patient quality of life.
- Severity of non-seizure impairments was assessed by a 5-point Likert scale comprising none, mild, moderate, severe, and very severe. Quality of life was assessed by physicians using a 7-point Likert scale from very poor to very good.
- Patient data was delineated into age groups: <6 years, 6-18 years and >18 years.

Results

DEMOGRAPHICS AND DISEASE CHARACTERISTICS

- Data was provided by 114 neurologists (paediatric and adult) on 454 LGS patients. Overall, 29% of patients were from Italy (Spain; 26%, France; 18%, Germany; 17% and UK; 10%).
- Patients' median (interquartile range, IQR) age was 16.0 (7.0-21.0) years and 65% were male (**Table 1**).
- Prior to development of LGS, 34% of patients had West syndrome (infantile spasms:<6y, 36%; 6-18y, 36%; >18y, 30%).

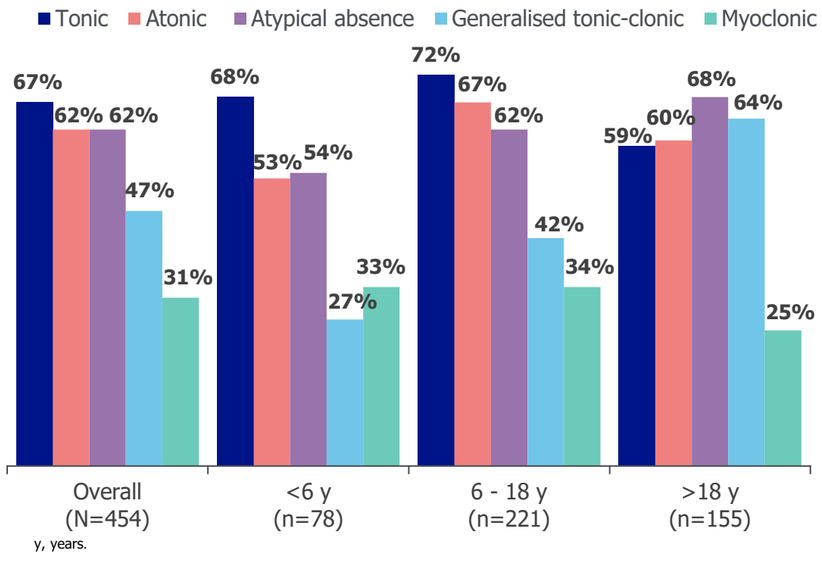
Table 1. Patient Demographics and Characteristics

	Overall (N=454)	<6 y (n=78)	6-18 y (n=221)	>18 y (n=155)
Age, median (IQR) years	16.0 (7.0-21.0)	4.0 (3.0-5.0)	14.0 (8.0-16.5)	24.0 (21.0-31.0)
Male, n (%)	297 (65%)	51 (65%)	150 (68%)	96 (62%)
n	**n=354**	**n=72**	**n=180**	**n=102**
Age at first seizure, median (IQR) years	4.0 (2.0-5.3)	2.8 (1.4-4.0)	4.8 (3.0-6.0)	3.3 (1.9-5.0)
n	**n=309**	**n=72**	**n=159**	**n=78**
Age at diagnosis, median (IQR) years	4.6 (2.8-6.5)	2.7 (1.9-4.0)	5.3 (4.1-6.9)	5.5 (3.1-9.0)
n	**n=160**	**n=31**	**n=80**	**n=49**
Time from first seizure to diagnosis, median (IQR) months	12.3 (4.9-33.1)	6.8 (2.9-21.3)	13.3 (5.7-33.1)	17.2 (5.0-58.8)
n	**n=216**	**n=57**	**n=112**	**n=47**
Time from first consultation to diagnosis, median (IQR) months	6.0 (2.0-13.0)	1.9 (0.0-5.9)	7.0 (2.0-12.0)	13.0 (7.0-24.0)
Number of consultations prior to diagnosis, median (IQR)	4.0 (2.0-6.0)	3.0 (2.0-6.0)	3.0 (2.0-5.0)	4.0 (3.0-6.0)
Number of non-seizure comorbidities, median (IQR)	1.0 (0.0-3.0)	1.0 (0.0-2.0)	1.0 (0.0-3.0)	2.0 (0.0-4.0)
≥1 concomitant comorbidity, n (%)	324 (71)	52 (67)	157 (71)	115 (74)
Top three most frequent non-seizure comorbidities, n(%)				
• Psychomotor or cognitive impairment	158 (35)	29 (37)	77 (35)	52 (34)
• Attention deficit hyperactivity disorder	114 (25)	11 (14)	61 (28)	42 (27)
• Sleep disorder or Insomnia	95 (21)	15 (19)	51 (23)	29 (19)

IQR, interquartile range; y, years.

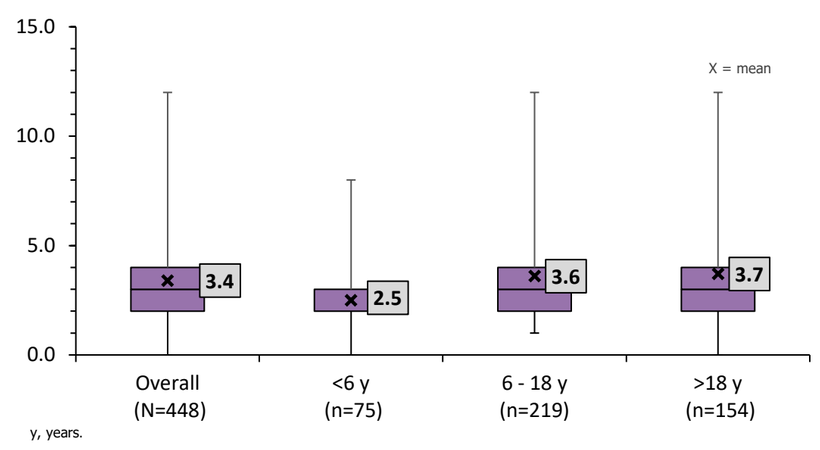
- The use of aids (i.e., wheelchair, feeding tube) was reported in 46% of all patients (<6y: 45%; 6-18y: 44%; >18y: 49%).
- The most commonly reported seizure types ever to have been experienced by patients were: tonic (67%), followed by atonic (drop attacks, 62%) and atypical absence (62%; **Chart 1**).

Chart 1. Top five seizures ever experienced by patients across age groups.



- Overall, patients took a median (IQR) 3.0 (2.0-4.0) treatments for their LGS per day (**Chart 2**).
- The most frequently prescribed treatments for patients with LGS were valproate for 62% of patients (<6y: 64%; 6-18y: 65%; >18y: 57%), followed by clobazam for 38% (<6y: 41%; 6-18y: 37%; >18y: 37%) and lamotrigine for 29% of patients (<6y: 23%; 6-18y: 36%; >18y: 23%).

Chart 2. Number of treatments taken for LGS each day at time of data collection across age groups.



SEVERITY OF IMPAIRMENTS

- Severe or very severe physical impairment to/in mobility, verbal and non-verbal communication was reported in 19% of all patients. In patients aged <6, this was 13%, however, in patients aged >18, this was 25% (**Chart 3**).
- Severe or very severe overall mental impairment (defined as intellectual disability, depression or anxiety) was reported in 28% of all patients. In patients aged <6, this was 15%, however, in patients aged >18, this was 38% (**Chart 3**).

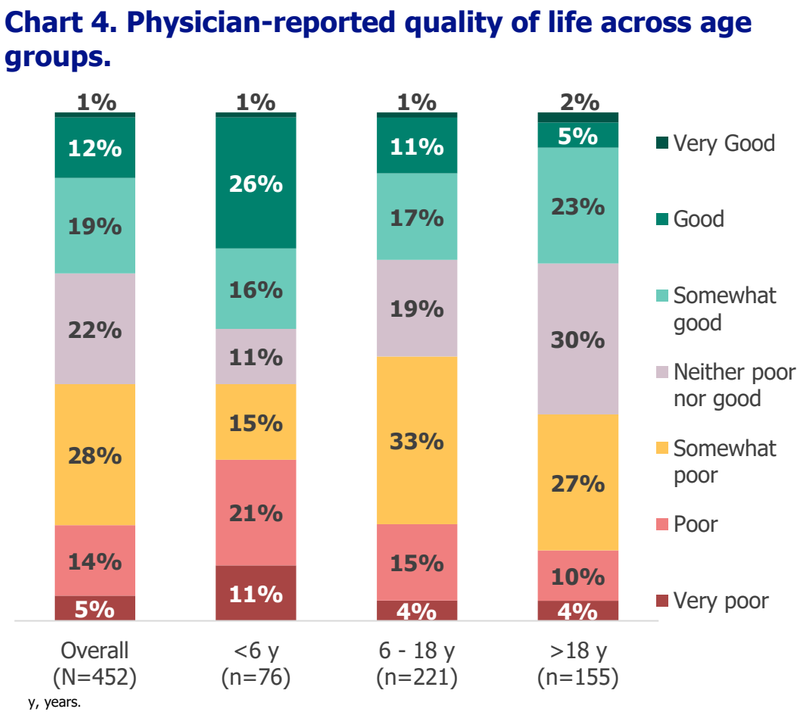
Chart 3. Severity of impairment of non-seizure symptoms across age groups.

Physical impairment was defined as mobility, verbal and non-verbal communication. Mental impairment was defined as intellectual disability, depression, or anxiety.

QUALITY OF LIFE

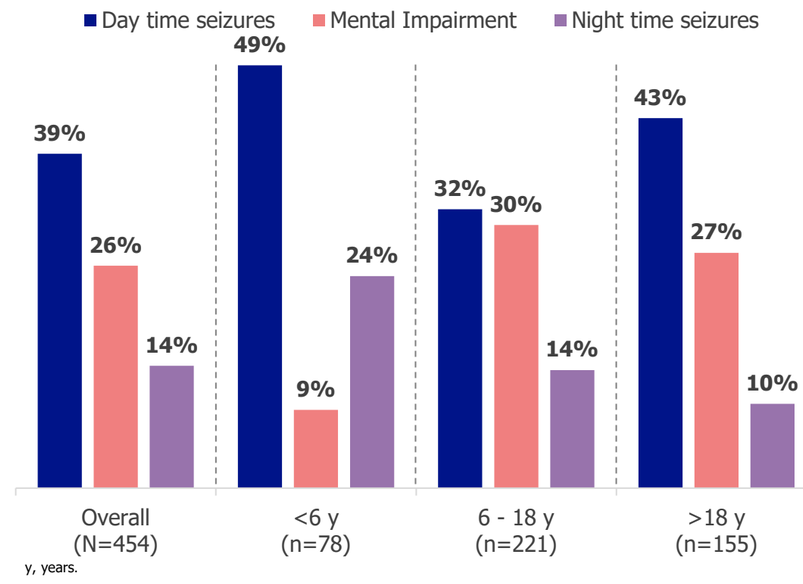
- Almost half of all patients were reported to have somewhat poor, poor or very poor quality of life (**Chart 4**).

Chart 4. Physician-reported quality of life across age groups.



- Daytime seizures were reported to have the greatest impact on overall patient quality of life (39% of patients) followed by mental impairment (26%; **Chart 5**).

Chart 5. Top three greatest impact on patients' quality of life across age groups.



Conclusions

- Polypharmacy was common for patients with LGS, especially among patients aged >18 who received an average of 3.7 treatments per day.
- Despite multiple treatment options for LGS, many patients continue to have seizure and non-seizure burdens such as physical and mental impairments, many of which persist with age.
- These findings suggest that there is a need for more effective therapies to target seizures and manage non-seizure symptoms to improve the long-term prognosis for patients with LGS.

Limitations

- The DSP is based on a pseudo-random sample of physicians. Participation was influenced by their willingness to complete the survey and may not be representative of prescribing practices of all physicians across the different regions.
- Confounding variables which could affect the types of treatment received are the time periods prior to and since LGS diagnosis, which vary depending on patient age as well as the region patients were located.

References

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