



PHYSICIAN SENTIMENT SURVEY

EPILEPSY IN AGING PATIENTS

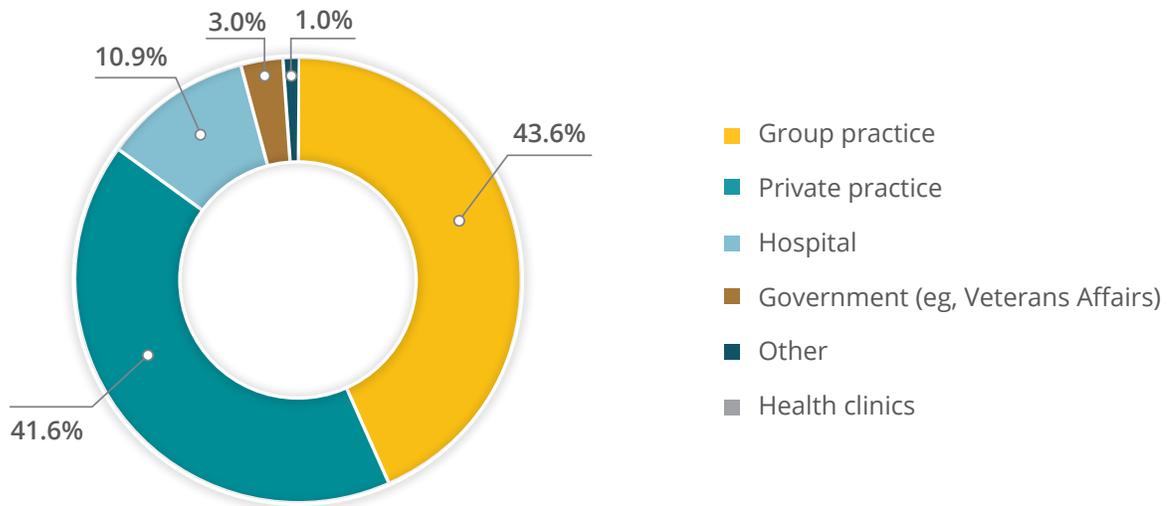


Fostering
Critical Dialog
on Epilepsy

The goal of this survey was to assess physicians' experiences with patients with epilepsy as they age, their biggest concerns when treating them, and the types of epilepsy they are encountering. Our hope was to gain a better understanding of physicians' challenges and concerns about treating aging (50 to 64 years old) and elderly (≥ 65 years old) patients with epilepsy. The survey was conducted in July 2012 and represented 101 board-certified neurologists in the United States. On average, the neurologists had been in practice for 14.8 years and saw approximately 60 epilepsy patients in a month. Our findings follow. The full survey is available for review at the end of this document.

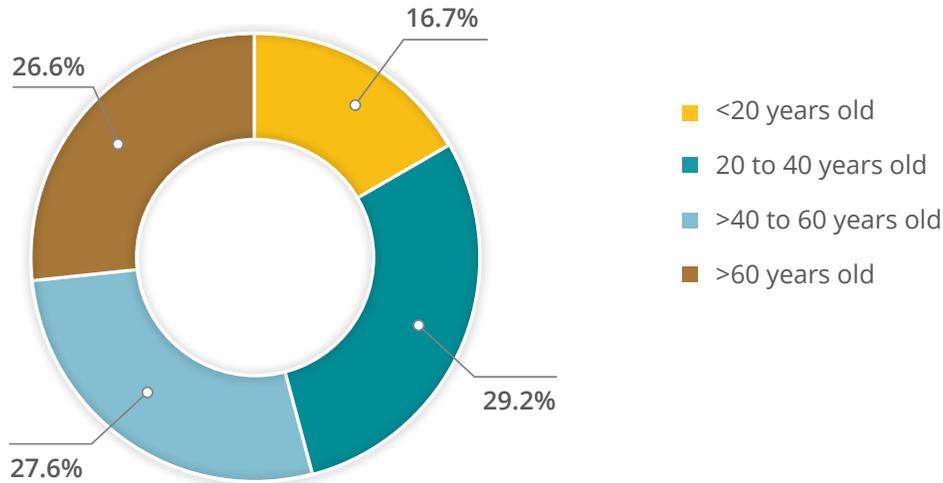
PRACTICE AND PATIENT BACKGROUNDER

NEUROLOGISTS' CHARACTERIZATION OF THEIR PRIMARY PRACTICE



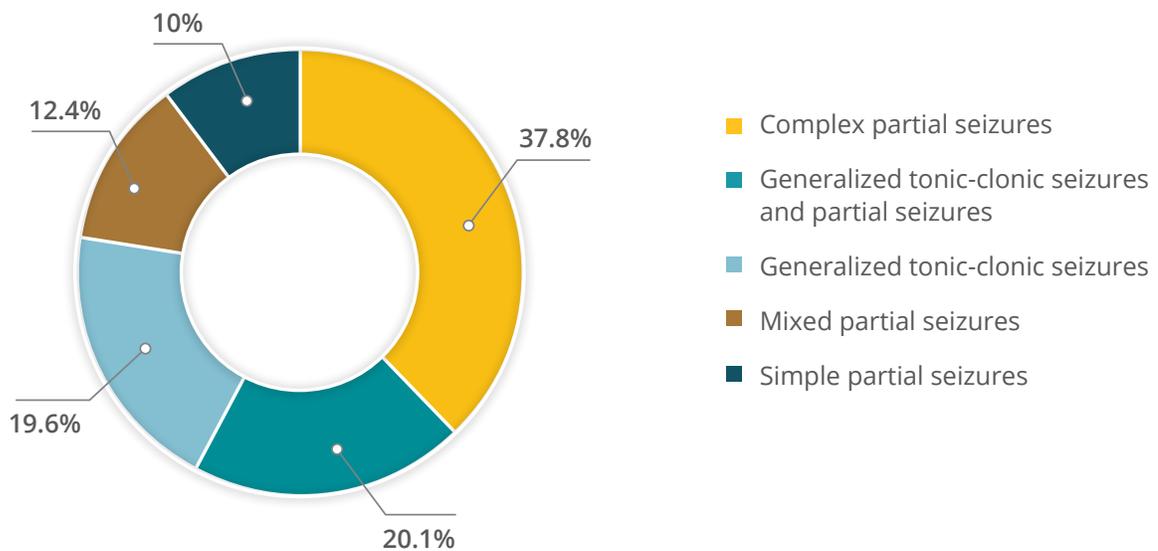
Eighty-five percent of neurologists characterized their primary practice as either a private or group practice, and responses were fairly evenly split between the two. Health clinics were not selected by physicians surveyed.

NEW-ONSET EPILEPSY DISTRIBUTION BY AGE



Physicians surveyed reported that the age distribution of patients with new-onset epilepsy was fairly even, with the lowest percentage of patients in the <20 years old group. This could be due to the fact that patients in this age group may be seen specifically by pediatric neurologists who may have opted not to participate in a survey on epilepsy in patients as they age.

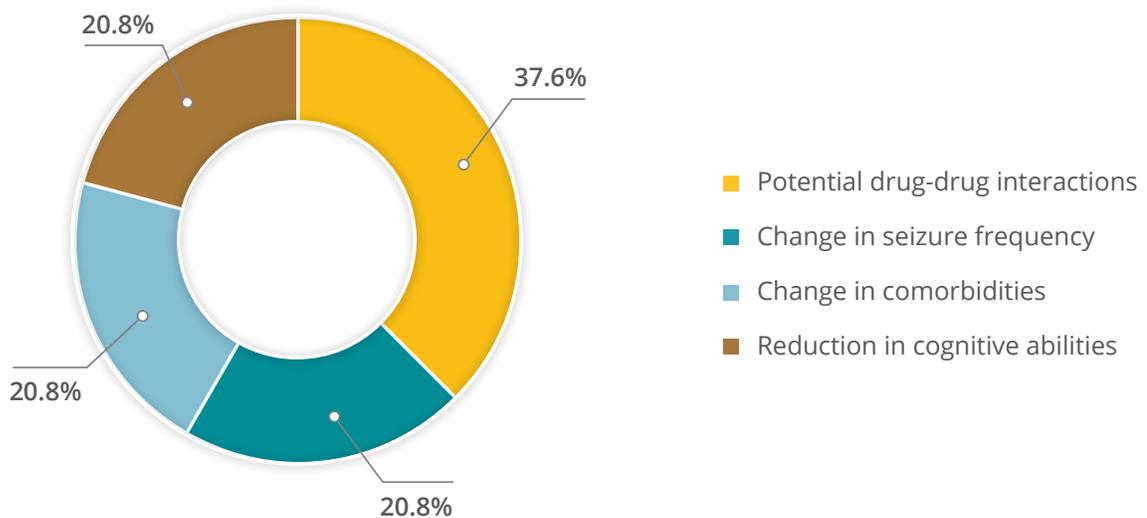
BREAKDOWN OF SEIZURE TYPE IN ELDERLY PATIENTS (≥65 YEARS OLD)



The distribution of seizure types seen by the neurologists surveyed was not unexpected, with the most common seizure type being complex partial seizures (37.8% of elderly patients).

Q&A: AGING PATIENTS WITH EPILEPSY

GREATEST CONCERN REGARDING AGING PATIENTS (50 TO 64 YEARS OLD) WITH EPILEPSY

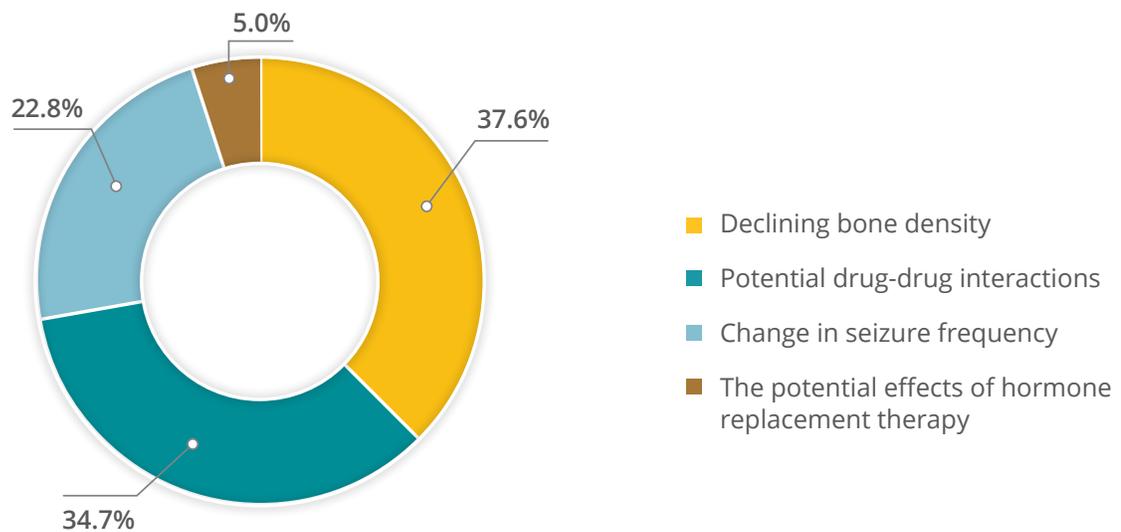


The neurologists surveyed most commonly selected drug-drug interactions as their greatest concern in their aging patients. The balance of the concerns noted was evenly divided between changes in seizure frequency, changes in comorbidities, and reduction in cognitive abilities.

When asked whether the statement, *I believe there is a significant association between epilepsy and dementia*, was true or false, more neurologists answered true (56.4%) than false (43.6%), but the percentages were close enough to suggest that the opinion on whether there is an association between dementia and epilepsy is divided.

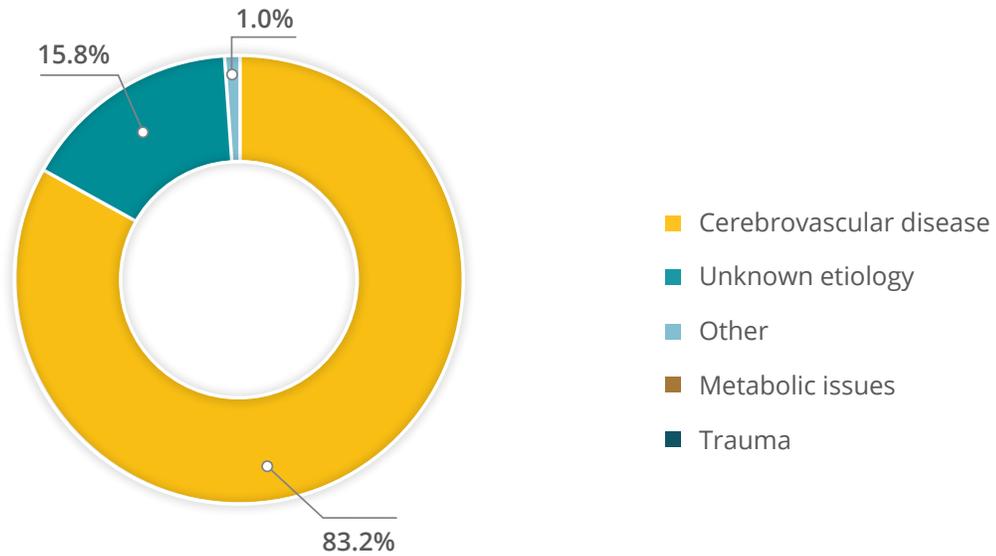
When asked whether the statement, *I feel that as my patients with epilepsy age, depression becomes more of an issue*, was true or false, the neurologists overwhelmingly answered true (81.2%), suggesting a general consensus that as patients with epilepsy age, depression becomes more of an issue.

THE GREATEST CONCERNS REGARDING AGING FEMALE PATIENTS WITH EPILEPSY



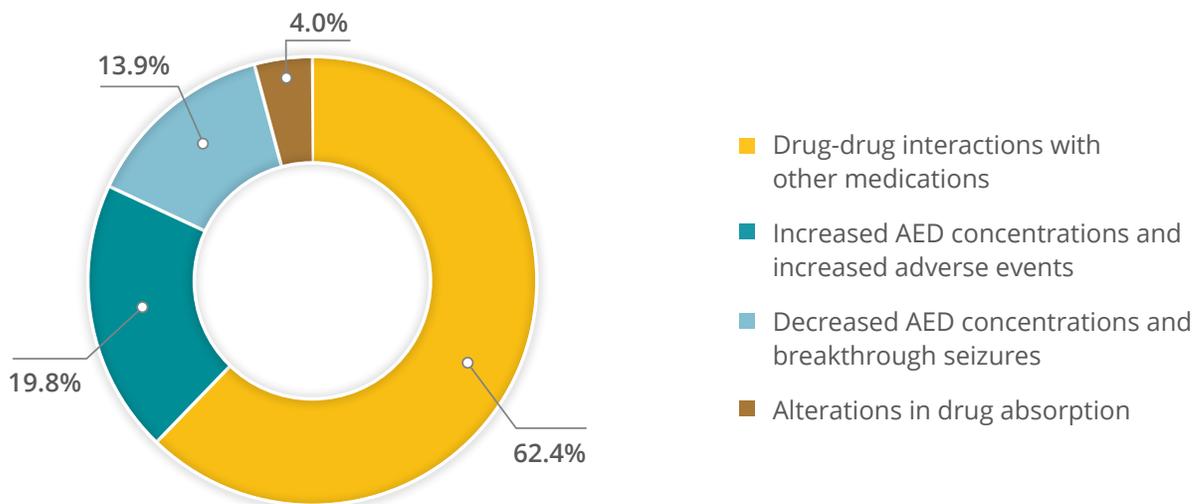
When the neurologists were asked specifically about their aging female patients, they often still selected the potential for drug-drug interactions as a leading concern (34.7%); however, declining bone density was selected slightly more often (37.6%).

MOST COMMON CAUSE OF NEW-ONSET EPILEPSY IN ELDERLY PATIENTS



The neurologists surveyed overwhelmingly selected cerebrovascular diseases as the most common cause of new-onset epilepsy in their elderly patients (83.2%). Metabolic issues and trauma were not selected by physicians surveyed.

MEDICATION CONCERNS AS PATIENTS WITH EPILEPSY AGE



Not surprisingly, the majority (62.4%) of the neurologists surveyed selected drug-drug interactions as their greatest medication concern. Approximately one-fifth of neurologists selected increased AED concentrations leading to increased adverse events.

The survey gathered responses to the following open-ended statement: ***When treating my aging patients with epilepsy, I feel the greatest challenge is ____.*** The majority of neurologists surveyed noted that drug-drug interactions and/or drug-related adverse events were their greatest concerns when treating elderly patients with epilepsy.

“Finding a medication that will not interact with all their other meds”

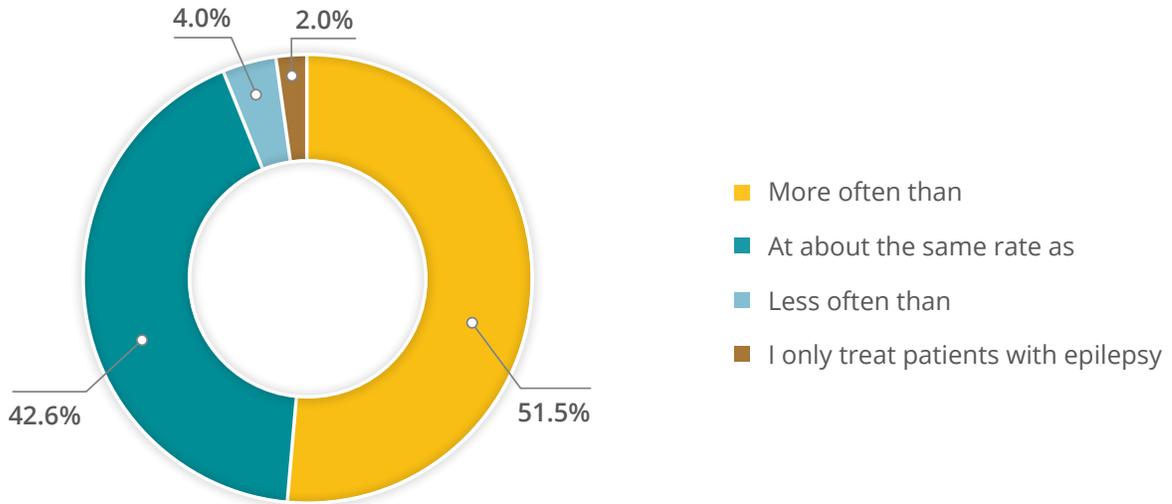
“Dealing with side effects – the older patients tend to have much more difficulty tolerating medications”

Other concerns centered on patient compliance and medication costs.

“Compliance with treatment plan”

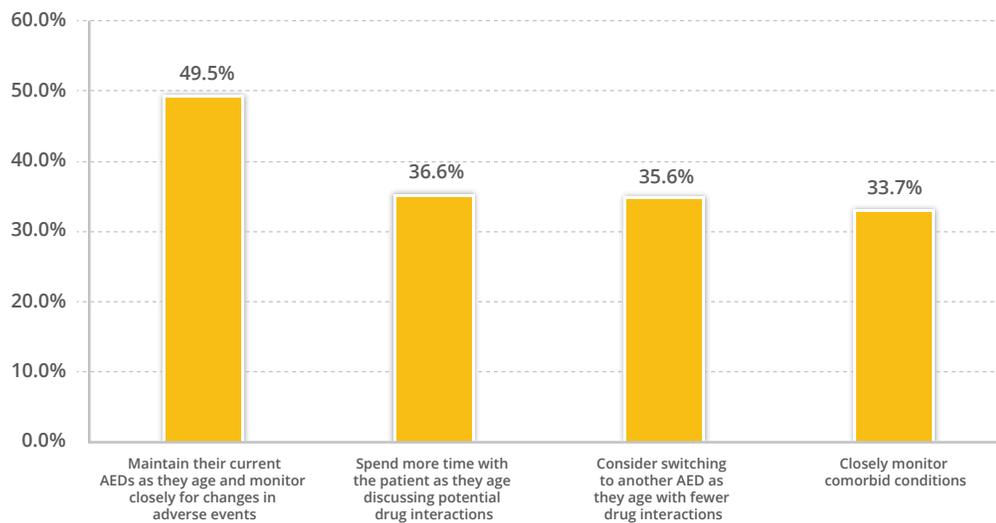
“Cost of medications”

SLEEP DISORDERS IN OLDER PATIENTS WITH OR WITHOUT EPILEPSY



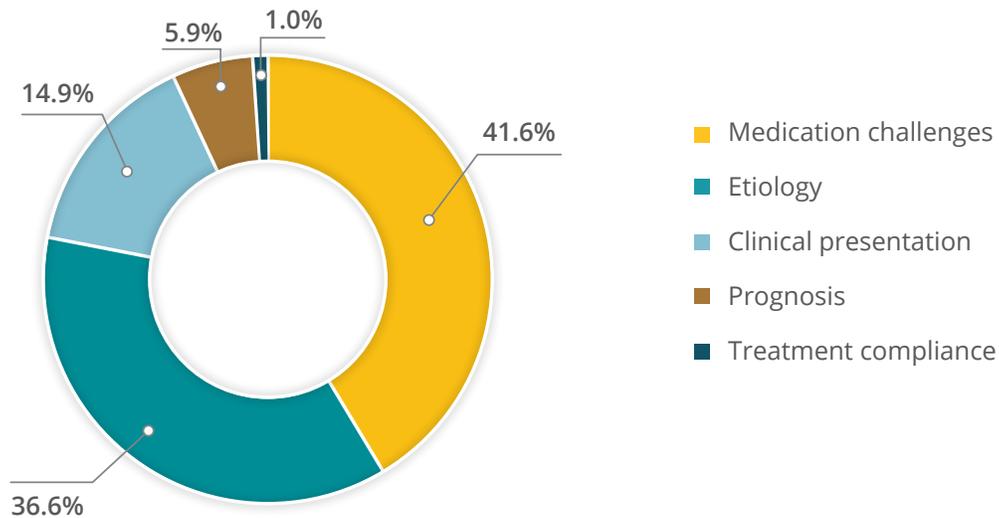
Greater than half of the neurologists surveyed said that their older patients with epilepsy experienced sleep disorders more often than their older patients without epilepsy, with 42.6% saying patients experience sleep disorders at a similar rate.

CHANGES CONSIDERED WHEN TREATING ELDERLY PATIENTS WITH EPILEPSY



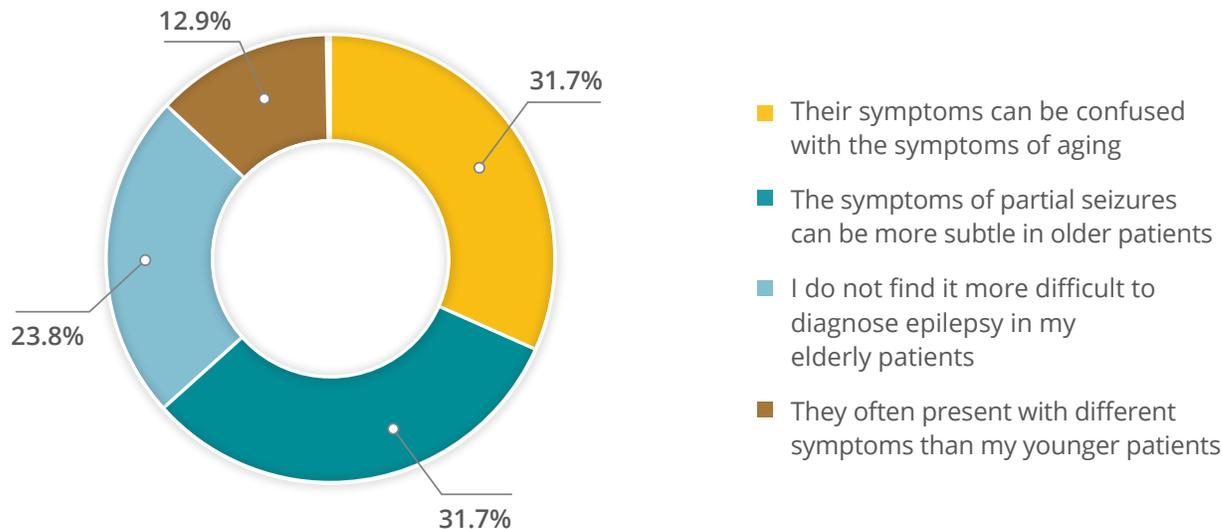
When treating their elderly patients with epilepsy, these neurologists maintain their patients' current AEDs and monitor patients closely for changes in adverse events most often. They also spend more time with the patient discussing potential drug interactions. Additionally, they switch to another AED with fewer drug interactions and closely monitor comorbid conditions in a fairly even distribution.

GREATEST DIFFERENCE IN ELDERLY PATIENTS VERSUS YOUNGER PATIENTS



The greatest differences these neurologists noted in their elderly patients with epilepsy versus their younger patients with epilepsy were medication challenges (41.6%) and etiology (36.6%).

DIAGNOSING EPILEPSY IN ELDERLY PATIENTS VERSUS YOUNGER PATIENTS



While about a quarter of the neurologists surveyed did not find diagnosing epilepsy in elderly patients more difficult, about a third of neurologists said diagnosing was more difficult because the symptoms can be more subtle and a third said it was difficult because the symptoms of epilepsy can be confused with the symptoms of aging.

The survey gathered responses to the following open-ended statement: *I feel the greatest challenge when diagnosing epilepsy in aging patients is _____*. Most often, these neurologists were concerned with differentiating the diagnosis of epilepsy from other conditions; the most commonly mentioned were cerebrovascular disease and cognitive issues as patients age.

“Diagnosing epilepsy in the face of other serious diseases, like stroke or tumor”

“Distinguishing symptoms from TIA”

Neurologists noted that obtaining an accurate medical history was difficult, especially when patients lived alone.

“Sometimes they live alone and there is no witness to tell whether they have seizures at night or at other times during the day”

Many neurologists noted concerns about either drug-drug interactions or adverse events from other medications, which could be causing symptoms that look like epilepsy. Additionally some neurologists noted that elderly patients present differently; their symptoms can be subtler, or their symptoms could be confused with aging.

“Identification and correct diagnosis of subtle or relatively nonspecific symptoms”

THE SURVEY

The goal of this survey is to assess physicians' experiences with patients with epilepsy as they age, their biggest concerns when treating them, and the types of epilepsy they are seeing. Our goal is to understand physicians' challenges and concerns about treating aging (50 to 64 years old) and elderly (≥ 65 years old) patients with epilepsy. The results will be summarized and presented on EPILOG.us. EPILOG is an epilepsy-focused disease awareness program offering the latest in evidence-based scientific data, current therapy issues, and expert insights, developed to help physicians manage patients with epilepsy and optimize outcomes.

- 1 Are you a board-certified neurologist?**
 - a) Yes
 - b) No

- 2 How many years have you been in practice? _____**

- 3 How many epilepsy patients do you see in a month? _____**

- 4 Which of the following descriptions would best characterize your primary practice? (choose one)**
 - a) Private practice
 - b) Group practice
 - c) Hospital
 - d) Health clinic
 - e) Government (eg, Veterans Administration)
 - f) Other

5 What percentage of your elderly patients (≥ 65 years old) with epilepsy have the seizure types below?

Complex partial seizures _____

Simple partial seizures _____

Mixed partial seizures _____

Generalized tonic-clonic seizures _____

Generalized tonic-clonic seizures and partial seizures _____

6 Of the following, my greatest concern in my aging (50 to 64 years old) patients with epilepsy is: *(choose one)*

- a) Change in seizure frequency
- b) Change in comorbidities
- c) Reduction in cognitive abilities
- d) Potential drug-drug interactions

7 In my aging (50 to 64 years old) female patients with epilepsy, of the following my greatest concern is: *(choose one)*

- a) Change in seizure frequency
- b) Declining bone density
- c) The potential effects of hormone replacement therapy on epilepsy
- d) Potential drug-drug interactions

8 I believe there is a significant association between epilepsy and dementia. *(choose one)*

- a) True
- b) False

9 In my practice, the percentages of my new-onset epilepsy patients by age are: *(enter percentage)*

<20 years old _____

20 to 40 years old _____

>40 to 60 years old _____

>60 years old _____

10 In my elderly patients with new-onset epilepsy, the most common cause is: *(choose one)*

- a) Unknown etiology
- b) Cerebrovascular disease
- c) Metabolic issues
- d) Trauma
- e) Other

11 Of the following, my greatest medication concerns as my epilepsy patients age are: *(choose one)*

- a) Decreased AED concentrations and breakthrough seizures
- b) Increased AED concentrations and increased adverse events
- c) Drug-drug interactions with other medications
- d) Alterations in drug absorption

12 I feel that as my patients with epilepsy age, depression becomes more of an issue. *(choose one)*

- a) True
- b) False

13 My elderly patients with epilepsy experience sleep disorders _____ my elderly patients without epilepsy. *(choose one)*

- a) More often than
- b) Less often than
- c) At about the same rate as
- d) I only treat patients with epilepsy

14 Compared to diagnosing epilepsy in my younger patients, diagnosing epilepsy in my elderly patients is more difficult, because: *(choose one)*

- a) They often present with different symptoms than my younger patients
- b) Their symptoms can be confused with the symptoms of aging
- c) The symptoms of partial seizures can be more subtle in older patients
- d) I do not find it more difficult to diagnose epilepsy in my elderly patients

15 When treating my elderly patients with epilepsy, I often: *(choose all that apply)*

- a) Maintain their current AEDs as they age and monitor closely for changes in adverse events
- b) Spend more time with the patient as they age, discussing potential drug interactions
- c) Consider switching to another AED as they age, with fewer drug interactions
- d) Closely monitor comorbid conditions

- 16** Of the following, the greatest difference in epilepsy in my elderly patients versus my younger patients is: *(choose one)*
- a) Etiology
 - b) Clinical presentation
 - c) Prognosis
 - d) Medication challenges
 - e) Treatment compliance
- 17** The greatest challenge when diagnosing epilepsy in aging patients is _____.
- 18** When treating my aging patients with epilepsy, the greatest challenge is _____.