Online Tool Guides Surgical Referral in Epilepsy

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BOSTON — An online decision-support tool may help to close the protracted gap between seizure onset and referral for surgery in patients with medically intractable epilepsy, based on results obtained by an expert panel.

The user-friendly tool is designed for use by all clinicians who treat epilepsy patients but who may not be epilepsy specialists, said Dr. Nathalie Jetté, who developed the tool with her colleagues at the University of Calgary (Alta.).

The tool rates the appropriateness and necessity of referring individual patients for a surgery evaluation based on factors such as age, epilepsy duration, seizure type, frequency and severity of seizures, the number of adequate epilepsy drug trials, and EEG and MRI findings, said Dr. Jetté of the department of neurology at the university.

"The goal is to help neurologists and other clinicians identify which patients should be referred for epilepsy surgery evaluation, and ultimately [to facilitate] earlier surgical treatment when appropriate," Dr. Jetté said at the annual meeting of the American Epilepsy Society.

Despite surgical success rates as high as 90% and 60%, respectively, for patients with medically intractable temporal lobe epilepsy and other partial epilepsies, the average time between seizure onset and surgery for these patients is 9 years for children and 19 years for adults, according to Dr. Jetté, who attributed the underutilization of surgery to misconceptions about the associated risks. "Epilepsy surgery is often perceived as a last resort, rather than a reasonable option early on."

VITALS

Major Finding: Based on a decision-support tool, nearly 21% of 2,646 clinical scenarios created from different combinations of patient-level factors were considered appropriate for evaluation for epilepsy surgery; 17% were considered uncertain for appropriateness.

Data Source: An expert panel's use of a decision-support tool.

Disclosures: Dr. Jetté reported no conflicts of interest relevant to her presentation.

To develop the rating tool, Dr. Jetté and her colleagues used the RAND/UCLA appropriateness method, in which they performed systematic literature reviews on the epidemiology and natural history of drug-resistant epilepsy, the cost and utilization of surgery, and outcomes of surgery for partial epilepsy.

Based on the literature review and on discussion during a face-to-face meeting, an expert panel comprising adult and pediatric neurologists, epileptologists, and epilepsy surgeons rated clinical scenarios (created from the possible combinations of the aforementioned patient factors) for their appropriateness for an epilepsy surgery evaluation, Dr. Jetté said.

"The scenarios were rated on a scale from 1 to 9, where 1 was the most inappropriate and 9 was the most appropriate. After extensive discussion, all of the scenarios were re-rated, and those that were appropriate for referral [rated a 7 or higher] were re-rated for necessity."

For the rating purposes, surgical referral was considered a necessity if the presumed benefits of referral exceeded the risks by a sufficient margin, if failing to refer the patient would be improper care, if there was a reasonable chance the referral would benefit the patient, and if the magnitude of the expected benefit "was not small," Dr. Jetté said.

Of 2,646 clinical scenarios, nearly 21% received a rating of at least 7 and as such were considered appropriate for a surgical evaluation. About 17% were considered uncertain for appropriateness because they were rated between 4 and 6, and nearly 62% were deemed inappropriate because they were rated between 1 and 3. Fewer than 1% of the scenarios could not be classified due to lack of consensus, she reported.

In practice, a patient who has failed one antiepileptic drug (AED) would be considered inappropriate for referral, whereas a patient who has failed two AEDs and has an abnormal MRI and EEG would typically be an appropriate candidate for surgical evaluation, Dr. Jetté explained.

With respect to necessity, "none of the appropriate cases were rated as unnecessary," although four cases were not rated due to lack of consensus. Of the remaining appropriate cases, 56% were rated as most necessary, 42% as moderately necessary, and 2% as minimally necessary, she said.

The decision support tool, which is currently being tested and refined in Canadian clinics, is expected to be available online in mid-2010. ■

Delays in Surgical Referrals for Epilepsy Remain Problematic

VITALS

Major Findings: After evidence-based recommendations were published, no significant trends were found suggesting earlier referral for epilepsy surgery evaluation.

Data Source: Retrospective, single-center comparison.

Disclosures: The investigators reported no relevant conflicts of interest.

BOSTON — The 2003 publication of evidence-based recommendations for referring patients with temporal lobe epilepsy for surgical evaluation has not led to an increase in timely referrals for appropriate candidates, according to a study of referral patterns.

Researchers at the Seizure Disorder Center of the David Geffen School of Medicine at the University of California, Los Angeles, compared data for patients seen in the center's epilepsy monitoring unit (EMU) before and after the American Academy of Neurology issued a practice parameter recommending referral for epilepsy surgery evaluation for patients who failed appropriate trials of first-line antiepileptic drugs (Neurology 2003;60:538-47).

Among 435 patients seen at the center during 1995-1998 and 712 patients seen during 2005-2008, those with brain tumors, previous EMU evaluations, or previous neurosurgery were excluded. This left 83 patients in the earlier period and 102 in the later period, Dr. Jerome Engel Jr. said at the annual meeting of the American Epilepsy Society.

No significant differences were found between the groups with respect to age at diagnosis, duration of epilepsy, or age at EMU evaluation, Dr. Engel reported. The mean age of onset was 17 years for the earlier group and 18.4 years for the latter group, the mean duration of epilepsy was 17.1 vs. 18.6 years, and the mean age at EMU evaluation was 34.1 vs. 37 years.

The findings confirm that the failure to refer patients with drug-resistant epilepsy continues to be a major problem, despite the availability of class I evidence for the effectiveness of surgery and evidence-based recommendations. As a result, patients who are surgical candidates—those whose seizures persist after appropriate trials of two antiepileptic drug regimens—continue to suffer debilitating seizures long after they might have if they had been referred to a surgical center according to the evidence-based guidelines, said Dr. Engel, director of the Seizure Disorder Center.

The UCLA investigators are conducting a critical review of factors that prevent the translation of recommendations for surgical referral in epilepsy to clinical practice. ■

Epilepsy Linked to Comorbidities Related to Central Nervous System

BOSTON — Certain central nervous system-related comorbidities occur more often among people with self-reported epilepsy than in the general population, according to a large survey of U.S. households.

Individuals who reported ever having had epilepsy or a seizure disorder were more likely than those without a self-reported epilepsy diagnosis to have ever had depression, anxiety, bipolar disorder, attention-deficit/hyperactivity disorder, sleep disorder, or migraine, Ruth Ottman, Ph.D., reported at the annual meeting of the American Epilepsy Society.

Dr. Ottman, professor of epidemiology and neurology at Columbia University, New York, and her colleagues developed an 11-item screening survey that was mailed in 2008 to 340,000 households from two national panels selected to be representative of the U.S. population.

Of the 3,488 people who reported having ever had epilepsy or a seizure disorder, 61% were female, the mean age was 48 years, 35% had a seizure or convulsion within the previous 12 months, and 27% reported having had a febrile seizure or convulsion as a child. In the epilepsy cohort, 33% reported ever having depression, compared with 26% of controls without epilepsy. The epilepsy cohort was more likely to report a history of anxiety disorder (22% vs. 14%), bipolar disorder (14% vs. 7%), and ADHD (13% vs. 6%). The epilepsy cohort also was more likely to report sleep disorder (20% vs. 14%) and migraine (28% vs. 21%).

The survey did not collect information on specific medications, but "it is possible that some of the comorbidity in our study could be related to medications," Dr. Ottman said in an interview. "However, for several of the comorbid disorders we described, other studies have found significantly increased occurrences even before the first seizure, suggesting that medications do not explain all of the comorbidity." For example, "the prevalence of depression is higher in people with epilepsy than in people without it, even before the first seizure occurs, and this is also true for migraine."

A possible explanation for the increased prevalence of certain CNS comorbidities might be a "shared pathogenic mechanism underlying epilepsy and the other disorders, possibly due to shared genetic susceptibilities or to common environmental risk factors," Dr. Ottman said.

Clinicians should be aware of the potential for CNS-related comorbidities so they can consider medications effective in treating both epilepsy and certain comorbid disorders, she said. Comorbidities have been highlighted by the National Institute of Neurological Disorders and Stroke as a priority for epilepsy research, "and we hope our research will increase awareness of comorbidities." ■

Disclosures: *Study sponsored by Ortho-McNeil Janssen Scientific Affairs. Dr. Ottman reported no conflicts of interest.*