

# Many Epileptic Women Face Sexual Issues

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**S**exual dysfunction is quite common in women with epilepsy, just as ignoring the problem is quite common among their physicians, experts say.

Naturally, said Dr. Romila Mushtaq, an epileptologist at the Medical College of Wisconsin, Milwaukee, the first concern of the neurologist in epilepsy is controlling seizures. The issue of sexual well-being can become a low priority. But studies repeatedly show that 30% or more of women with epilepsy—even well-controlled epilepsy—experience troubles with libido, arousal, orgasm, genital lubrication, and dyspareunia.

Often, just a few simple questions can uncover a cascade of troublesome issues. “It’s humbling how many women will spend most of their appointment time questioning me about their sexual health, because no one has ever talked to them before, and they were shy or never even thought to bring it up,” Dr. Mushtaq said in an interview.

Her own recent study, presented at the annual meeting of the American Academy of Neurology, clearly illustrated the scope of the problem. Dr. Mushtaq reported on 105 women with epilepsy who completed a comprehensive health questionnaire. The assessment included questions about decreased libido, pain during intercourse, difficulty becoming aroused, and difficulty or inability reaching orgasm. Women with diagnosed depression were excluded.

Almost 40% of the respondents reported at least one symptom of sexual dysfunction, Dr. Mushtaq said. The most commonly reported problems were decreased libido and difficulty obtaining orgasm.

Some antiepileptic drugs—particularly the older medications—interfere with sexual response because they affect the hypothalamic-pituitary-adrenal axis and induce hepatic enzymes (Psychiatry 2007;6:111-4). But Dr. Mushtaq’s study found no association between sexual problems and the type of antiepileptic medication, although patients on polytherapy were more likely to express symptoms than were those on monotherapy.

It might be easy to conclude that some sexual problems are psychological, she said: The depression and anxiety of having a chronic disease can manifest as sexual dysfunction. But multiple studies show a complex link between epilepsy (a disorder of the brain) and sexual response (a function of the brain). The reasons for epilepsy-related sexual problems are varied and complicated. Antiepileptic drugs, disruption of the hypothalamic-pituitary-ovarian axis, hormonal fluctuations, and even seizure locus can all affect the way women experience their sexuality.

Arousal issues may be related to de-

crease in blood flow to the genitals, Dr. Mushtaq said. A 1994 study explored this area with a group of 36 subjects: nine women and eight men with temporal lobe epilepsy and 19 controls (Neurology 1994;44:243-7).

The subjects watched both sexually neutral and erotic videotapes while undergoing digital pulse and genital blood flow readings. Despite similar pulse rates, both male and female patients experienced significantly less genital blood flow response than did controls (184% vs.



Close to 40% of women with epilepsy reported at least one symptom of sexual dysfunction, Dr. Romila Mushtaq says.

660% for males, and 117% vs. 161% for females).

The effect of epilepsy on hormones plays a large part in sexuality, she said. “Problems with orgasm are probably related to a lack of testosterone. Epilepsy can disrupt the pulsatile release of follicle-stimulating hormone,” a precursor of testosterone production. This disruption can also occur in men with epilepsy, but it isn’t always profound enough to cause erectile dysfunction. “But in women, even a slight change can affect arousal, libido, and orgasm,” she said.

Epilepsy and hormones present a chicken-or-egg scenario. While seizures can disrupt hormonal balance, neurons in the epileptic brain can also become hypersensitive to hormones, a force that seems to drive both catamenial epilepsy (a pattern of seizures that peaks near the time of menstruation) and the high prevalence of premenstrual dysphoric disorder (PMDD) in this population.

Dr. Andrew Herzog, a neurologist and director of the neuroendocrine unit at Beth Israel Deaconess Medical Center, Boston, has published extensively on the relationship between hormones and epilepsy. At the AAN meeting, he also presented an observational study on premenstrual dysphoric disorder in women with epilepsy. His study examined the rate of PMDD in 250 women with refractory epilepsy. The rate was 32%, which is three times higher than the 10% rate seen in the general population.

The cyclical fluctuations of estrogen and progesterone probably drive this association, Dr. Herzog said. Estrogen enhances neuronal excitability and lowers the seizure threshold, whereas progesterone decreases excitability and raises the seizure threshold. Normally, these

effects stabilize one another, balancing neuronal excitability. “In brains that are sensitized due to injury, congenital factors, or epilepsy, however, these responses are heightened. When estrogen surges at midcycle, it can produce highly excitatory, agitated, irritable behaviors. When progesterone declines close to menstruation, its GABAergic effect is rapidly withdrawn and this can also drive excitation.”

These effects can be further heightened in women whose seizures arise in a brain region related to emotion, such as the temporal lobe, he added.

Seizure locus also seems to be related to the type of sexual dysfunction a woman may experience, Dr. Herzog said. In 2003, he examined this relationship in 36 women with right or left temporal lobe epilepsy and 12 controls. All of the women completed the Arizona Sexual Experience Scale (ASEX). They also received continuous EEG recordings for 8 hours, during which 5-cc blood samples were drawn every 10 minutes.

The ASEX scores were significantly higher (worse) in women with epilepsy than in controls; women with right temporal lobe epilepsy (RTLE) had higher scores than did those with left TLE.

A significant number of women with epilepsy also had subnormal gonadal steroid levels. Women with RTLE tended to have low levels of bioactive testosterone, whereas those with LTLE were more likely to have low estradiol.

The association of sexual dysfunction and laterality of seizure locus supports a biologic brain-based mechanism, Dr. Herzog wrote. “There is increasing evidence to support the existence of lateralized brain asymmetries in the regulation of neuroendocrine, reproductive, and sexual functions” in animal studies. For instance, he noted, female rat brains contain up to 100% more gonadotropin-releasing hormone content in the right side of the hypothalamus than in the left.

The finding of more sexual dysfunction with RTLE may reflect a similar lateralized asymmetry in areas of the human hypothalamus that influence sexual function, he wrote, especially because unilateral epileptiform discharges tend to affect the hypothalamus ipsilaterally.

The understanding of epilepsy’s influence on hormones and sexuality is still in its infancy, Dr. Mushtaq said. “As research continues to unfold, we are likely to discover that this is also the factor behind the fertility problems women with epilepsy can experience.”

In the meantime, clinicians should be vigilant about screening these women for sexual difficulties, and referring them to specialists. “When do [neurologists] ever ask patients about their sex life, or about their premenstrual emotional problems?” she said. “It’s a topic that has been almost taboo.” ■

# Online Registry Is Broadening Autism Research

BY PATRICE WENDLING  
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**S**ince its launch earlier this year, the first online autism registry in the United States has garnered a diverse group of participants and a treasured commodity.

Among the more than 14,000 registrants to the Interactive Autism Network (IAN), there are six sets of triplets, 44 sets of identical twins, and 162 sets of fraternal twins.

“Twins are a cherished resource for understanding autism because they help you get at the issue of environmental versus genetic factors,” Dr. Paul Law, director of the network, said in an interview. “If identical twins aren’t the same, then presumably there is some environmental factor that is determining that difference.”

Preliminary data show that the concordance rate of autism among identical twins registered with IAN is about 80%-85%, which falls within the range identified in previous autism twin studies. Concordance rates are in the upper 20% range for fraternal twins. Typically, concordance has been reported around 10% for fraternal twins, prompting the IAN staff to invite experts to look at why this may be, Dr. Law said. The registry was launched in April.

Another statistic of interest to researchers is the growing number of families IAN is attracting who are new to autism research. Among the 250 families that participated as pilot registrants, 80% had never participated in any autism research.

That number has risen to 86% among current registrants, and is expected to reach 90% as news of the project reaches more affected families.

The ability to reach new participants is a result in part of the time and travel constraints that are overcome by Internet participation. Families have registered from all 50 states and the District of Columbia, as well as such exotic locations as Guam, American Samoa, the Marshall Islands, and Palau.

But the success also speaks to the often underestimated desire of families of children with autism spectrum disorders to be part of the solution, Dr. Law said.

What also has become evident in the short history of IAN is the need to register adults with autism spectrum disorders. Registration is now limited to infants and children aged 18 years and younger, as a result of logistical constraints such as competency, guardianship, and the reliability of self-reported data. The IAN staff, based at Baltimore’s Kennedy Krieger Institute, is now working with experts in adult autism to overcome these obstacles.

“It’s critical, because the one thing the mother wants to know when they come to me as a provider and the baby is 18 months old is what that child is going to look like at 22 or 24 years of age, and we have few information sources to answer that,” Dr. Law said. ■