



Catamenial epilepsy

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Abstract

Key points: Catamenial epilepsy is the exacerbation of seizures in relation to the menstrual cycle. Factors contributing to catamenial seizures may include hormonal fluctuations and metabolic changes influencing antiepileptic drug (AED) levels. Estrogen is mainly proconvulsant, progesterone is mainly anticonvulsant. In women who ovulate, catamenial seizures can occur perimenstrually (C1 pattern) or periovulatory (C2 pattern); in women who have anovulatory cycles, catamenial seizures can occur during the luteal phase (C3 pattern). Therapies for catamenial seizures include optimization of AEDs, non-hormonal therapies, hormonal therapies, and neurosteroids.








Introduction The term “catamenial” is derived from the Greek word “katamenios” meaning monthly. Catamenial epilepsy consists of patterns of seizure occurrence due to the variation in sex hormone secretion across the menstrual cycle. In ancient times the cyclical occurrence of epileptic seizures, like menstruation cycles, was attributed to the phases of the moon. In 1857, at a meeting of the Royal Medical and Chirurgical Society, Sir Charles Locock first described the relationship between epileptic seizures and the menstrual cycle. He described “a form of epilepsy to which special notice had not been drawn and which he had been in the habit of regarding as hysterical epilepsy ... confined to women ... connected to menstruation ... with paroxysms that only occurred at the menstrual period or except in the case of great mental excitement” [1]. In 1881, Gowers described the first series of menstruation-related seizures, in which he noted in 46 of 82 women, “the attacks were worse at the monthly periods” [1]. In recent years the pathophysiology, classification, and treatment of catamenial epilepsy have broadened – the subject of several comprehensive reviews [1].

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Catamenial (menstrual) epilepsy describes a worsening of seizures in relation to the menstrual cycle and may affect around 40% of women with epilepsy. There are specific times within the menstrual cycle when women are most at risk: in the days leading up to a menstrual period and during a menstrual period (perimenstrual or catamenial type 1 pattern); at the time of ovulation (catamenial type 2 pattern); and in the second half of their cycle (luteal phase or catamenial type 3 pattern). Catamenial epilepsy is a type of refractory epilepsy characterized by seizure clusters around perimenstrual or perioovulatory period. The pathophysiology of catamenial epilepsy still remains unclear, yet there are few animal models to study this gender-specific disorder. The pathophysiology of perimenstrual catamenial epilepsy involves the withdrawal of the progesterone-derived GABAergic neurosteroids due to the decline in progesterone level at the time of menstruation. These manifestations can be faithfully reproduced in rodents by Catamenial epilepsy is a form of epilepsy in women where seizures are exacerbated during certain phases of the menstrual cycle. Seizures may rarely occur only during certain parts of the cycle, but are more commonly only more frequent. Catamenial epilepsy is underlied by hormonal fluctuations of the menstrual cycle where estrogens promote seizures and progesterone counteracts seizure activity. [2].