

Factors Precipitating Breakthrough Seizures in Well-controlled Epilepsy

Breakthrough seizures occur in 40% of children with well-controlled epilepsy. The common reason implicated is poor compliance with antiepileptic drugs (AEDs). However, many children have breakthrough seizures despite regularly taking AEDs. Various factors such as watching television, playing video games, fever, sleep deprivation, exertion, emotional stress; etc may be responsible for this(1). Identifying seizure precipitants among children in our scenario would help in better management of epilepsy. Therefore, we proposed to study the factors precipitating breakthrough seizures in children with well-controlled epilepsy.

Patients below 18 years presenting to Neurology Unit with breakthrough seizure(s) (after a seizure-free period of two years or more) were included. Data was collected regarding the type and duration of epilepsy, brain imaging findings and possible precipitating factors such as watching television, playing video games, presence of fever; sleep deprivation, fatigue, emotional stress, and poor compliance with AEDs. Trough plasma drug level was obtained in all.

A total of 30 children (18 boys) with breakthrough seizures were included. The mean age was 7.1 (range 3-17) years. Duration of epilepsy ranged from 2-12 years (mean 4.3 years). Type of epilepsy included generalized tonic-clonic in 11; absence, complex partial and myoclonic in 5 each, and focal motor in 4 children. Brain imaging available in 13 patients was normal.

Factors precipitating epilepsy were identified in 11 (37%) children. These included watching television in 4 (for periods

ranging 1-4 hours; seizures occurred while watching TV in 2 and within 10 minutes of stopping in other 2); fever in 4 (seizures occurred at the peak of fever in all); playing video games (during the activity), emotional stress (death of grandmother) and sleep deprivation (sleep duration of only two hours) in one each. Five additional children with breakthrough seizures were found to be poorly compliant to AEDs, however three of them had co-existing precipitants (watching television in one and fever in two). No factors could be identified in the remaining 14 children.

The role of television was established in 1997, when about 700 Japanese children developed seizures after watching a popular program called "Pocket Monster"(2). The underlying mechanism was concluded to be photosensitivity. Children with video-game related epilepsy (VGRE) are thought to have a special convulsive susceptibility of selected neurons in striate, peristriate, infratemporal, and posterior parietal cortices to particular visual stimuli and avoidance of video games is considered the treatment of choice(3). Sleep deprivation was found to be the most important precipitating factor in juvenile myoclonic epilepsy (in 54% of patients)(4). We observed one (out of five) child with myoclonic epilepsy, with seizure recurrence related to sleep deprivation. In a recent study(1), 62% of patients cited at least one precipitant that included stress (30%), sleep deprivation (18%), fever or illness (14%), and fatigue (13%). In another study(5), fever and emotional disturbances were perceived as seizure precipitants in 29% and 16% of patients respectively.

In conclusion, a variety of factors may play a role in precipitating seizures. A careful history could help us in identifying them. Adequate avoidance or treatment of these

factors could help in better seizure control and possibly in reduction of dosage of AEDs. Larger prospective studies are required to confirm these observations.

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Risk Factors for Obesity in Children

In India, it was basically under nutrition, which attracted the focus of health workers. Childhood obesity was rarely seen. But over the past few years this entity is increasingly being observed. The changing life style of families in the so called modernized India with increased purchasing power, easy availability, more comfortable and luxurious living, thanks to improved technology has all attributed to this problem. Increased hours of inactivity due to increasing academic pressure, television, video games and computer have all replaced outdoor games and other social activities. The incidence of obesity in children attending the O.P.D. of the PGI was increasingly being observed. An attempt was hence made to identify such obese children and determine the contributing risk factors. A total of 120 children were

observed over a period of one year (2000-01). Body mass index (BMI) >85th percentile and >95th percentile was taken as the criteria to identify overweight and obesity respectively(1).

Patients with obesity due to secondary causes were excluded from the study. Detailed anthropometry was recorded and dietary assessment done by interviewing the mothers, using 24 hour recall method and the food frequency consumption questionnaire. Details of family history and life style patterns were also recorded. Intake of food calories, proteins, fats and carbohydrates were calculated using the ICMR standards(2).

Other details like family history, activity levels of each child and number of hours of television viewing were also recorded.

A total of 120 children presenting to the OPD for primary obesity were studied out of which 79 were obese and 41 were overweight.