

Selected Summaries

Television and Video Game Epilepsy

[Qurik JA, Fish DR, Smith SJM, Sander JWAS, Shorvon SD, Allen Pf. First seizures associated with playing electronic screen games: A community-based study in Great Britain. Ann Neurol 1995, 37: 733-737]

Recently there has been a great concern about epileptic seizures that may be provoked by electronic screen (*e.g.*, video, television and computer). This study was planned to establish the incidence of first seizures triggered by electronic screen games in persons without a known history of epilepsy in an effort to determine the risk to the general public. The data was provided by 118 electroencephalography (EEG) Departments of Great Britain. One hundred eighteen patients were identified who had a first seizure while playing or immediately after finishing playing (within 10 minutes) some form of electronic screen game during two study periods of three months duration. The first EEGs were performed during one of two 3 months periods. To compare the relative frequency of other environmental triggers of first seizures in new patients with photosensitive epilepsy, all new patients with epilepsy whose first EEGs were performed during period-I, and had a photoparoxysmal response to intermittent photic stimulation were identified. Majority of (103/118) of patients were in the age range of 7-19 years. All the patients were classified into three groups. In Group A (46 patients), the seizures were considered to have been triggered by playing electronic screen games and EEG

showed type-4 photoparoxysmal response to intermittent photic stimulation. Type 4 photoparoxysmal responses were defined as generalized spike/polyspikes and wave to intermittent photic stimulation and had the strongest association with clinical seizures. In Group B (25 patients) the seizures were considered likely but not definitely triggered by playing electronic screen games. EEG showed type 1-3 photoparoxysmal responses (less wide spread spikes or spike-wave responses to intermittent photic stimulation which had a weaker association with clinical seizures). Group C (47 patients) comprised subjects for whom there was no apparent causal relationship. Association probably represented a chance in temporal relationship. In this group none of EEG changes were noted. In conclusion, the authors estimated the overall annual incidence of first seizures triggered by electronic screen games to be approximately 1.5/100,000 (Groups A and B combined), representing 3% of all new patients with epilepsy in Great Britain in the younger age group.

Comments

Seizures induced by light stimulus are the most common form of reflex seizures. Common environmental light triggers include bright sunlight, flashes of light and sunlight interrupted by trees. However, the most common single light trigger appears to be television. Television induced epilepsy commonly affects children. The seizures triggered by light stimulus are primary generalized tonic-clonic seizures. An absence spell lasting 5-15 seconds may also be induced by photic stimulation. Similarly, individual cases of seizures

related to use of video-games have been reported since 1980. The mean age of patients is 13 years (8-15 years). Approximately 75% of affected patients are male. About a third of these patients might have experienced a spontaneous or non-video game related seizure, and in 50% of these cases EEG showed epileptiform activity induced by intermittent photic stimulation. Several factors have been suggested as culprit to induce 'Video-game seizures'. The children playing video game tend to sit close to it; flashing light or patterns, or even cognitive content of game may also be responsible for provocation. The proximity of the screen is of great importance in triggering an attack which may occur when the subject approaches the television set to adjust it. Nearness to the screen means that larger, area of retina is stimulated by flicker, and viewing in dark rooms with lights off may also increase the contrast effect produced by brightly lit screen. Sensitive subjects are equally at risk from black and white television as well as color television (1-3).

The findings of this study further support the idea that video-game seizures occur in patients with a genetically determined photosensitive trait who have their first television-screen triggered seizures at a specific age, often precipitated by lack of sleep. The study is relevant for us, as seizures induced by electronic screen games constitute about 3% of new epileptics. If we can extrapolate the data for Indian population, a large number of new epileptics here in whom seizures are likely to be

provoked by electronic screen games can be prevented by taking some simple precautions.

Such photosensitive patients should always watch television from a distance of not less than 3 meters. The television room should be well lit. Polarized sun glasses are helpful outdoor in preventing attacks in bright sunlight. Using a portable TV set with a small screen may reduce the risk considerably. In a few cases drug prophylaxis with sodium valproate may be required. Patients without any evidence of photosensitivity have no excess risk of experiencing a seizure while playing video-games or viewing television (4).

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