Poster 63

SUNFLOWER SYNDROME TREATED WITH COLORED LENSES

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Introduction:
Self-induced photosensitive seizures are a rare syndrome of idiopathic generalized epilepsy (IGE). Approximately 25% of those susceptible to photosensitive seizures self induce, often by hand waving or exposure to environmental light stimuli. Self-induced seizures can be refractory to anti-epileptic medications (AEDs). Studies have defined wavelength specificity of photosensitive seizures and disappearance of the photoparoxysmal response (PPR) with colored lenses. We describe two patients with IGE whose spontaneous seizures are well controlled, however, continue to self-induce seizures. The PPR of both patients were blocked with the use of colored lenses.

Methods:
We recorded video electroencephalograms (VEEG) from two children with photosensitive IGE and seizures self-induced with flickering hand movement in front of the eyes. Patients were monitored with VEEG for 24 hours to confirm syndrome, self-induction, and absence of spontaneous seizures. Intermittent photic stimulation (IPS) was performed under standard conditions at frequencies between 1-30 Hz. White-strobe IPS was repeated with various colored lenses. The presence or absence of PPR was recorded at each frequency.

<table>
<thead>
<tr>
<th>Filters</th>
<th>Wavelength Transmission</th>
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<tbody>
<tr>
<td>Red</td>
<td>&gt; 625 nm</td>
</tr>
<tr>
<td>Amber</td>
<td>&gt; 550 nm</td>
</tr>
<tr>
<td>Yellow</td>
<td>&gt; 500 nm</td>
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<tr>
<td>Yellow-green</td>
<td>&gt; 500 nm &lt; 575 nm</td>
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<tr>
<td>Blue</td>
<td>&gt; 425 nm &lt; 525 nm</td>
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Results:
Both patients demonstrated photosensitivity to white strobe, with generalized polyspike-wave on EEG and myoclonic extremity jerks. PPR was seen maximally with IPS at 20-27Hz. PPR was abolished on repeat IPS with yellow-green filters in both patients.

Conclusion:
Self-induced photosensitive seizures are a rare subset of IGE syndromes, sometimes termed “The sunflower syndrome”. Seizures are often difficult to control pharmacologically. Our observations and previous studies support evidence for the use of colored glasses to block the PPR, and thereby diminish or eliminate the patient’s ability to self-induce seizures. This may offer a new treatment modality for improving seizure control in these otherwise medically refractory patients.

References:

**Keywords:** Sunflower Syndrome, Self-induced seizures, Photosensitive seizures, Colored lenses, Photoparoxysmal Response

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