**Interictal regional paroxysmal fast activity on scalp EEG is common in patients with underlying gliosis.**

[Dash GK](https://www.ncbi.nlm.nih.gov/pubmed/?term=Dash%20GK%5BAuthor%5D&cauthor=true&cauthor_uid=29554575)1, [Rathore C](https://www.ncbi.nlm.nih.gov/pubmed/?term=Rathore%20C%5BAuthor%5D&cauthor=true&cauthor_uid=29554575)2, [Jeyaraj MK](https://www.ncbi.nlm.nih.gov/pubmed/?term=Jeyaraj%20MK%5BAuthor%5D&cauthor=true&cauthor_uid=29554575)3, [Wattamwar P](https://www.ncbi.nlm.nih.gov/pubmed/?term=Wattamwar%20P%5BAuthor%5D&cauthor=true&cauthor_uid=29554575)4, [Sarma SP](https://www.ncbi.nlm.nih.gov/pubmed/?term=Sarma%20SP%5BAuthor%5D&cauthor=true&cauthor_uid=29554575)5, [Radhakrishnan K](https://www.ncbi.nlm.nih.gov/pubmed/?term=Radhakrishnan%20K%5BAuthor%5D&cauthor=true&cauthor_uid=29554575)6.

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**Abstract**

**OBJECTIVE:**

Interictal regional paroxysmal fast activity (RPFA) on scalp EEG is common in patients with focal cortical dysplasia (FCD). Little data exists regarding the presence of RPFA in other etiologies.

**METHODS:**

We studied the association between RPFA and etiology on MRI in patients with drug resistant focal epilepsy undergoing presurgical evaluation in 2011. RPFA was defined as ≥3 consecutive spikes with a frequency of ≥10 Hz lasting ≥300 ms but <4 s.

**RESULTS:**

626 patients fulfilled the inclusion criteria. Of these, 138 (22%) patients had RPFA while rest had other interictal epileptiform discharges (IEDs). RPFA was located at posterior head region in 52.2% patients, frontal regions in 24.6% patients and over temporal regions in 17.4% patients. Focal gliosis (61, 44%) and FCD (27, 19%) were common etiologies in patients with RPFA. Compared to patients with other IEDs, patients with RPFA were more likely to have focal gliosis (61/138 vs. 39/488; p < 0.0001) or FCD (27/138 vs 37/488; p < 0.001) as the etiology of epilepsy.

**CONCLUSION:**

In developing countries, focal gliosis is more common than FCD as the underlying etiology in patients with RPFA on scalp EEG.

**SIGNIFICANCE:**

Focal gliosis should be considered as one of the common substrate for RPFA on scalp EEG.

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**KEYWORDS:**

Drug resistant epilepsy; Focal cortical dysplasia; Gliosis; Regional paroxysmal fast activity

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