Intact vs. Impaired Ictal Sensorium: Does it Affect Outcome of Psychogenic Nonepileptic Events Following Disclosure of Diagnosis

Shahram Izadyar MD[1], David K. Chen MD[1,2] ,Romay Franks ANP[2], and Richard A. Hrachovy[1,2]

[1]Department of Neurology, Baylor College of Medicine, Houston, TX

[2]Neurology Care Line, Michael E. DeBakey VA Medical Center, Houston, TX

Background

• Psychogenic non-epileptic events (PNEE) are episodes of altered motor, sensory, and mental function not associated with abnormal brain electrical discharges.

• Certain ictal manifestations of PNEE may reflect particular psychological processes or prognostic outcomes – insights which can be pivotal to the management of patients with PNEE.

• We aim to examine the correlation of short-term PNEE outcome with the depth of the patients' understanding regarding the diagnosis, and whether the strength of this correlation maybe different when comparing patients with intact versus impaired ictal sensorium.

Methods

• We prospectively collected data from consecutive patients admitted to the epilepsy monitoring unit at the Michael E. DeBakey VA Medical Center, Houston, TX, from 12/2008 to 1/2011 with a final, V-EEG confirmed diagnosis of PNEE.

• Ictal sensorium was considered impaired when the patient demonstrated amnesia to either the 2 test words presented during the peak of ictal manifestation, or the 2 additional and distinct test words presented at the perceived cessation of the event.

• Detailed disclosure of diagnosis was conveyed by the same examiner (DKC), discussing a standardized set of diagnostic information to all patients prior to discharge.

• Each enrolled subject had two phone interviews at '1-3 months' and '6-12 months' after discharge. They were asked to rate changes in their perception of:

- o Event "frequency", as well as event "intensity"
- oGeneral quality of life (QOL)
- oOverall health functioning
- oOccupational functioning

• For rating purposes, the patients were asked to use the following Likert 5-point scoring system:

- o *1:* Much worse; *2:* Worse; *3:* No change; *4:* Better; 5: Much better

• Patients were randomized to the provision of:

- o A handout explaining, in lay language, the strategic points verbally communicated during diagnosis discussion
- o Or a generic event safety sheet (control instrument)
- o They were instructed to review these reading materials at least once per month.

• Furthermore, they answered 5 multiple choice questions (MCQ) pertaining to information that were discussed during the diagnosis disclosure. These MCQ assessed the patients' retention of the diagnosis explanation, as was verbally discussed at the time of discharge.

Results

•Out of the 66 patients who enrolled into the study, 47 patients completed the 2 follow-up phone interview.

• Demographics of the patients is shown in the table below.†

		Intact ictal sensorium (n=15)	Impaired Ictal sensorium (n=32)
Age		43.3 +/- 15.5 y	43.4 +/- 13.5
Gender	Male	12 (86.7%)	22 (68.8%)
	Female	2 (13.3%)	10 (31.2%)
Marital status	Married	11 (73.3%)	30 (93.8%)
	Single	1 (6.7%)	0 (0%)
	Divorced	3 (2%)	2 (6.3%)
History of emotional abuse		7 (46.7%)	20 (62.5%)
History of psychiatric d/o		13 (86.7%)	28 (87.5%)
Duration of events before diagnosis		3.0 +/- 3.2 y	6.0 +/- 9.0 y
Baseline event frequency: Daily Weekly Monthly Rare		 4 (26.7%) 7 (46.7%) 4 (26.7%) 0	 9 (28.1%) 10 (31.3%) 10 (31.3%) 3 (9.4%)
Baseline perception of* Quality of Life Health Functioning Occupational functioning		 2.93 (0.96) 2.47 (0.99) 1.33 (0.90)	 2.5 (0.76) 2.22 (0.79) 1.37 (0.79)

†None of the categories was significantly different between the ictal vs. impaired ictal sensorium groups (no p-value was < 0.05)

• Perceived event frequency or intensity after discharge

	Intact ictal sensorium (n=15)	Impaired Ictal sensorium (n=32)
Follow-up #1: Better*	12 (80%)	11 (34%)
Follow-up #2: Same/Worse*	3 (20%)	21 (65%)
Follow-up #2: Better	10 (66.6%)	8 (25%)
Follow-up #2: Same/Worse*	5 (33.3%)	24 (75%)

* "Better" denotes endorsing scores of 4 or 5 and "same or worse" denotes endorsing scores 3 or less on either event frequency or intensity outcome questions.

• p-values: 0.005 and 0.010 at follow-up #1 and #2, respectively.

• Impaired ictal sensorium group– Spearmen's rank correlation with the depth of the patient's understanding* regarding the PNEE diagnosis.

Clinical Outcome measures	Spearman's r (f/u #1)	p-value (f/u #1)	Spearman's r (f/u #2)	p-value (f/u #2)
Diminished frequency or intensity of events	0.42	**0.017**	**0.43**	**0.015**
Health functioning	0.43	**0.013**	0.38	**0.032**
Occupational functioning	0.01	0.974	0.23	0.208
Quality of life	0.57	**<0.001**	0.43	**0.013**

• Intact ictal sensorium group– Spearmen's rank correlation with the depth of the patient's understanding* regarding the PNEE diagnosis.

Clinical Outcome measures	Spearman's r (f/u #1)	p-value (f/u #1)	Spearman's r (f/u #2)	p-value (f/u #2)
Diminished frequency or intensity of events	0.15	0.588	0.38	0.156
Health functioning	0.29	0.297	0.08	0.775
Occupational functioning	0.33	0.236	0	--
Quality of life	0.04	0.889	0.01	0.963

*Depth of understanding measured by patients' response to 5 MCQ which generally encompassed the communication strategy highlighted during pre-discharge disclosure of diagnosis

• Statistically significant p-value in bold

• The PNEE explanation handout was distributed randomly to 24 subjects who completed the full study protocol. We did not observe any significant differences in their scores on the 5 MCQ at follow-up #1 (p = 0.798) or follow-up #2 (p = 0.382).

Discussion

•Upon distinguishing the integrity of ictal sensorium (intact vs. impaired) for all subjects, we found that a significantly greater proportion of patients with intact ictal sensorium endorsed reduction of either PNEE frequency or intensity at follow-up #1 (1 to 3 months) window (p = 0.005).

• By the follow-up #2 (6 to 12 months) window, the proportion of patients who endorsed clinical improvement diminished for both groups, but the proportion for the intact ictal sensorium group remained significantly higher (p = 0.010).

•For the impaired ictal sensorium group, we found a moderate but statistically significant correlation between the depth of the patients' understanding regarding the PNEE diagnosis and the patients' perception of reduced PNEE frequency or intensity.

• Furthermore, we found similarly moderate and significant correlations with general perceptions of health functioning and quality of life. We noted that occupational functioning was the one area where the correlation was both weak and non-statistically significant across both follow-up windows.

• In contrast, the group with intact ictal sensorium did not demonstrate any statistically significant correlation between the depth of the their understanding regarding the PNEE diagnosis and any of the prognostic measures including: PNEE frequency or intensity, health functioning, quality of life, and occupational functioning.

•Potential confounds, including demographic and psychosocial characteristics were not significantly different between the intact and impaired ictal sensorium groups.

• Our findings suggest that the integrity of ictal sensorium, in itself, may be a significant prognosticator of short term PNEE outcome. Therefore, careful assessment of ictal sensorial integrity, in addition to customary examination of the visible motor manifestations, may contribute to more informative characterization of PNEE semiology.

References

• Reuber M, et al. Outcome in psychogenic nonepileptic seizures: 1 to 10 year follow-up in 164 patients. Ann Neurol 2003;53:305-311

• Kanner AM, et al. Psychiatric and neurologic predictors of psychogenic pseudoseizure outcome. Neurology. 1999; 53(5): . 933-8.