Supplementary Online Content

Vossel KA, Beagle AJ, Rabinovici GD, et al. Seizures and epileptiform activity in the early stages of Alzheimer disease. *JAMA Neurol*. Published online July 8, 2013. doi:10.1001/jamaneurol.2013.136.

eTable. Clinical and demographic data for each case with epilepsy or subclinical epileptiform activity.

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable: Clinical and demographic data for each case with epilepsy or subclinical epileptiform activity.

Case	Dx	PMH	G	H	Age of onset of cog. decline (domain)	Age at dx of aMCI or AD	Age of 1st seizure or EEG abnormality	MMSE (0-30) (age)	Seizure semiology and frequency	MRI at age of dx of aMCI or AD	EEG	AED and dose (mg)	Efficacy/Tolerability
1	AD	None	M	R	59 (memory)	59	61	26 (59)	Global aphasia, once	L>R hippocampal and posterior temporoparietal atrophy	(Sleep deprived) L hemispheric slowing, frequent L anterior temporal spikes (F7, T3)	LEV 500 bid	Seizure-free but discontinued after 1 month due to irritability
												LTG 100 bid	Seizure-free
2	AD	Prostate cancer, aortic valve disease HTN, PAF	M	R	82 (language)	84	84	22 (84)	R arm shaking, as frequent as 6 times a day	R>L hippocampal and L>R posterior parietal atrophy	Normal	LEV 500 bid	Partial response
												LEV 1500 bid	Seizure-free
3	AD	Migraines, concussion s/p ski accident, age 24	F	R	41 (memory)	50	44	28 (44)	Jamais vu for 1 min, sometimes followed by exhaustion, up to 3-4 times a day; déjà vu every two months	L>R hippocampal atrophy and bi-parietal atrophy	L temporal slowing and L frontotemporal (F7) sharp waves	LTG 100 bid	Intolerable side effect of blurred vision
												Lorazepam as needed	Rarely used
4	AD	HTN, HL	M	R	62 (memory)	66	51	24 (66)	Déjà vu, up to 2-3 times a day	Lateral parietal and frontal atrophy, hippocampal atrophy, mesial temporal sclerosis	Not performed	CMZ	7-month trial ineffective
												LTG 225-300 bid	Partial response
5	AD	HL	F	R	65 (memory)	68	69	11 (69)	Warm sensation in chest, disorientation, staring lasting 2-3 min, occurring up to 3 times a day	Not performed	(Sleep deprived) Diffuse R hemispheric slowing with R temporal sharps and spikes	LTG 100 bid	Seizure-free
6	AD	HL, concussion s/p fall at age 63 (negative head imaging)	F	R	67 (memory)	67	67	23 (67)	Speech arrest, epilepsia partialis continua	Generalized cortical atrophy	(LTM) Multiple seizures centered around frontal vertex (Fz)	VPA 500 ER bid	Neutral effects
												LEV 1500 bid	Partial response
												LEV 1500 bid TPM 25 bid	Seizure-free
7	aMCI	HTN, HL, vitamin D deficiency	M	R	71 (memory)	73	71	29 (73)	Unresponsive, humming/growling lasting seconds to minutes occurring weekly	Global atrophy, scattered foci of periventricular white matter T2 hyperintensities	L frontotemporal spikes and sharp waves	LTG 100 bid	Seizure-free; repeat EEG on LTG negative for epileptiform activity

Abbreviations: AD=Alzheimer's disease, AED=antiepileptic drug, aMCI=amnestic mild cognitive impairment, bid=twice a day, CABG=coronary artery bypass graft, CAD=coronary artery disease, CMZ=carbamazepine, cog.=cognitive, CPAP= continuous positive airway pressure, dx=diagnosis, G=gender, H=handedness, HTN=hypertension, HL=hyperlipidemia, L=left, LEV=levetiracetam, LTG=lamotrigine, LTM=long-term video-EEG monitoring, MMSE=Mini-Mental State Exam, OSA=obstructive sleep apnea, PAF=paroxysmal atrial fibrillation, PHT=phenytoin, PMH=past medical history, s/p=status post, qam=every morning, qd=every day, qhs=every bedtime, qpm=every evening, R=right, SD=standard deviation, tid=three times a day, TPM=topiramate, VPA=valproic acid.

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8	aMCI	Strep. viridans endo-carditis s/p CABG, aortic valve replace-ment; pacemaker for ictal bradycardia	M	R	65 (memory)	68	67	29 (68)	Blank stare, then unresponsiveness for 5 min with or without convulsions, occurring up to twice a day	Global atrophy, mild subcortical white matter disease	1st: Normal 2nd: Epileptiform discharges over R frontal region 3rd (LTM): frequent R anterior temporal epileptiform discharges	LEV XR 3000 qd	Partial response; returned to work and felt "sharper"
												LEV XR 3000 qd Pregabalin 75 bid	Seizure-free
9	aMCI	Type II diabetes, hypo-thyroidism	F	R	58 (memory)	60	58	None	Aura of fear and epigastric rising sensation followed by loss of consciousness for 5 min, occurring up to 5 times a week	Mild senescent changes	L temporal seizures and interictal L anterior temporal sharp waves (F7,T3), intermittent L temporal slowing	LEV 1500 bid	Neutral effects
												LEV 1500 bid LTG 200 bid, Pregabalin 225 bid	Partial response; side effect of fatigue
												LTG 250 bid Oxcarbazepine 450 bid	Seizure-free
10	AD	None	M	R	70 (memory)	71	70	16 (75)	Staring spells lasting 30 sec occurring weekly; "slumps" lasting minutes occurring every few months	L hippocampal atrophy and mild periventricular white matter changes	L temporal slowing	LEV 1250 bid	Partial response; side effect of irritability
												LEV 750 bid	Partial response; well tolerated
11	AD	None	F	R	49 (language)	53	53	23 (53)	Subclinical epileptiform activity	L>R parietal volume loss	1st: intermittent left frontotemporal slowing 2nd: (LTM) L frontal epileptiform discharges (Cz, C3, F3) every few minutes	LTG	Intolerable side effect of fatigue and sensation of muscle twitches in arms
												LEV 1000 bid	Remained seizure-free; repeat EEG on LEV showed no epileptiform activity

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12	aMCI	CAD s/p angioplasty, HTN	M	R	57 (memory)	67	57	29 (67)	Generalized tonic-clonic, occurring monthly to yearly	Atrophy of medial temporal lobes and amygdala	2 routine and 1 multi-day EEG negative for epileptiform activity	PHT	Partial response; worsened cognitive function
												LTG	Discontinued because of rash
												Oxcarbazepine	Partial response
												VPA	Partial response; Side effects of weight gain (>50 lbs), HTN, and worsening of cognitive function
												LEV 1000 bid	Seizure-free and improved cognitive function
13	AD	HL	F	R	84 (memory)	86	86	None	L arm rigidity, postictal confusion, occurring weekly	General atrophy and diffuse periventricular white matter disease	Not performed	LTG 50 bid	Seizure-free with improved cognitive and functional status
14	aMCI	Remote history of malaria, concussion s/p car accident at age 48 (head CT negative)	F	R	50 (memory)	55	41	30 (55)	Smelling foul odor followed by amnestic spells, occurring monthly to yearly; once involved R arm shaking	Posterior cortical atrophy	1st: L posterior temporal sharp waves, L > R temporal slowing in temporal region 2nd: left anterior temporal sharp waves	Carbamazepine	Neutral effects
												Gabapentin	Neutral effects
												TPM	Neutral effects
												Zonisamide	Partial response
												LTG 100 bid	Partial response, improved cognition
15	aMCI	HTN, hypo-thyroidism, renal cancer s/p L nephrec-tomy	F	L	54 (memory)	55	54	27 (55)	Amnestic spells with confusion followed by exhaustion, occurring weekly to monthly	Cortical atrophy, few scattered white matter T2 hyperintensities	(Sleep deprived) mild diffuse slowing	LEV 500 bid	Partial response, less amnestic spells, stable cognition

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16	AD	HTN, HL, psoriasis, OSA, concussion at age 10 s/p fall off swing, "bell rung" as high school football player	M	R	61 (memory)	66	61	27 (64)	Metallic taste followed by abdominal discomfort and nausea lasting 5 min, followed by fatigue and confusion, occurring daily to weekly	Mild subcortical ischemia	No abnormal activity	LTG 100 qam and 200 qhs	Partial response
17	AD	non-Hodgkin's lymphoma in remission, HTN, hypo-thyroidism, myoclonus, concussion s/p fall off sofa at age 1.5 years	F	R	66 (language)	70	74	9 (71)	Focal motor seizure with altered consciousness evolving into generalized convulsions, occurring once	L sided hippocampal atrophy	1st: L hemispheric slowing 2nd: R epileptiform discharges (C4, P4) maximal over R midtemporal region and background slowing	LTG 50 bid	Seizure-free, neutral effects on myoclonus
18	AD	Diet-controlled diabetes type 2, HL, facial myoclonus and aphasia exacerbated by buproprion	F	R	55 (language)	59	59	24 (59)	Generalized tonic-clonic seizure once; jerking during sleep	Posterior parietal atrophy	(LTM done prior to 1st seizure) Epileptiform discharges over L posterior temporal region (T3, T5)	PHT 15 mg/kg oral load	Worse facial myoclonus
												Levetiracetam 250 bid	Seizure-free; facial myoclonus abated; nighttime jerking lessened
19	AD	Ulcerative colitis, HL, tongue cancer removed, concussion s/p car accident at age 70	F	R	69 (memory)	77	74	29 (75)	Disorientation and hallucinations evolving into convulsive seizure, occurring once	Diffuse cortical atrophy, mild periventricular white matter disease	L anterior and mid-temporal sharp-wave discharges (~1 sec each) occurring up to twice a min; unable to repeat phrases during epileptic discharges	LEV 125 bid	Seizure-free; 36-hour LTM while weaning LEV showed no epileptiform activity

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20	AD	Prostate cancer s/p prostatec-tomy, concussion s/p bus accident age 10, myoclonus exacerbated by exposure to bright lights	M	R	63 (language)	63	69	7 (68)	Collapse/tonic spells x 2 min occurring monthly to yearly	Moderate cortical atrophy	L frontal spike and generalized photoparoxysmal response of 2 Hz polyspike and wave time-locked with flashing lights occurring maximally in a bifrontal distribution	PHT 200 bid	Neutral effects on myoclonus and seizures; developed more cognitive fluctuations, agitation, inanition, apathy, clumsiness, imbalance with falls, incoherent speech; also developed gingival hyperplasia
												LEV 750 bid	Seizure-free with reduced myoclonus; improved cognitive and motor function
21	AD	None	F	R	66 (memory)	67	67	18 (67)	Subclinical epileptiform activity	Moderate cortical atrophy R>L	R>L frontotemporal sharp discharges	LEV 1500 qd	Anxiety, confusion, diarrhea
22	aMCI	Pacemaker for asystole following seizure	F	R	68 (memory)	70	68	28 (70)	Metallic taste and smell, electrical sensation in head, nausea, fatigue, and loss of awareness, sometimes evolving into generalized convulsions, occurring weekly to monthly	Normal	Generalized slowing	LTG 100-250 bid	Partial response (breakthrough complex partial seizures without secondary generalization); LTG 250 bid caused imbalance and tremor; LTG dosage optimized at 225 mg bid; improved short-term memory
23	aMCI	Rheumatoid arthritis, anemia of chronic disease	M	R	64 (memory)	66	64	28 (66)	Déjà vu occurring daily then lessened in frequency	Diffuse cerebral atrophy most significantly in temporoparietal distribution, with bilateral hippocampal atrophy	Not performed	None	Not applicable

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24	AD	HL, hypo-thyroidism	F	R	55 (memory)	60	64	6 (63)	Generalized tonic-clonic, occurring monthly	Parietal atrophy (L>R) and mild frontal atrophy	Not performed	LEV 125- 250 bid	Seizure-free; LEV 250 bid caused irritability, which improved slightly with reduction to 125 bid
25	AD	Remote uterine cancer, s/p abdominal hysterectomy-bilateral salpingo-oophorec-tomy	F	R	64 (memory)	66	66	19 (66)	Disorientation and speech arrest often progressing to generalized tonic-clonic seizures with week-long postictal confusion, occurring monthly	R>L hippocampal atrophy and scattered subcortical T2 hyperintensities	Normal	PHT 400 qd	Breakthrough generalized tonic-clonic seizures
												LEV 500 bid	Partial response; used for only a few days before switching to LTG
												LTG 100 bid	Partial response. No generalized tonic-clonic seizures
26	AD	Sjögren's syndrome, remote history of meningitis and transverse myelitis, thyroid cancer s/p resection	F	R	56 (executive)	59	56	25 (59)	L hand shaking and clawing and brief lapses of consciousness	Normal	R temporal slowing and sharp waves	PHT 100-200 qd	Neutral effects; tried for a few weeks but developed intolerable nausea
												CMZ 200 qd	Neutral effects; developed confusion and somnolence
												VPA	Immediately did not tolerate
												LEV 250 qd	Intolerable dizziness, poor concentration, headaches and nausea
												LTG 25 bid	Seizure-free; LTM on LTG showed no epileptiform activity
27	aMCI	Sjögren's syndrome	F	R	74 (memory)	78	74	27 (78)	Staring spells and expressive aphasia, occurring every 3-4 months. Once developed L leg shaking and altered consciousness	Global cortical and hippocampal atrophy	1st: R frontal epileptiform activity 2nd: Rare bursts of R frontal slowing	LEV 500 qam, 750 qhs	Seizure-free; did not tolerate higher doses (1500 mg/day) due to poor concentration

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28	AD	OSA s/p uvuloplasty, HL, 2 concussions s/p falls at age ~54	M	R	58 (memory)	60	58	29/30 (59)	Burning smell followed by sense of fear and nausea then unconsciousness for 2 min, occurring monthly	Global atrophy, predominantly posterior cortical	Normal	LTG 150 bid	Partial response; LTG 100 bid was less effective
29	aMCI	Pacemaker for ictal bradycardia, HL	M	R	73 (memory)	76	74	26 (76)	Lightheadedness, then blank stare for 30 sec, occurring weekly to monthly	Not performed (CT brain showed mild volume loss and mild white matter disease)	(Sleep deprived) normal	Lacosamide 50 bid	Seizure-free; lower doses were partially effective
30	aMCI	Bladder cancer s/p chemo-therapy, mild aortic regurgitation	M	R	74 (memory)	77	75	26 (77)	Sudden behavioral arrest with eyes closed, lasting seconds to minutes, followed by disorientation, occurring 6-10 times a month	Mild global atrophy and scattered T2 hyperintensities	1st: normal 2nd: L temporal small-sharp spikes during sleep (normal variant) 3rd (LTM): focal epileptiform discharges over L anterior temporal region	LTG 25 bid	Urticarial rash after 3 weeks (seizure-free during this time)
												VPA 250 qhs	Partial response
31	aMCI	HTN, HL, type II diabetes, CAD, Hypo-thyroidism, mild concussion at age 18	M	R	64 (memory)	67	66	29 (67)	Global prickling feeling, jaimais vu, profound panic and fear, lasting few min, occurring daily	Normal	None	None	n/a
32	AD	Hypo--thyroidism, CAD, sleep apnea on CPAP	M	R	65 (memory)	71	63	28 (71)	Blank stare, followed by generalized tonic-clonic seizure, lasting 2-3 min, occurring every few months	Generalized atrophy, mild periventricular white matter disease	1st: R temporal slowing 2nd: bilateral anterior slowing 3rd: epileptiform discharges arising independently from both temporal lobes	PHT 300 bid	Partial response; Side effects of dizziness, lethargy, ataxia, cognitive worsening
												LTG 200 bid	Partial response
												LTG 200 bid LEV 500 qhs	Seizure-free
33	AD	Myoclonus	F	R	60 (language)	63	64	27 (64)	Rigid and pale for 10 sec, followed by being upset and confused for several hours, occurring monthly to yearly	Mild white matter disease	None	VPA 375 tid	Partial response

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34	AD	HL, anti-phospholipid antibody and elevated factor VIII on coumadin	M	R	74 (memory)	77	76	30 (76)	Acute spells of profound confusion and amnesia, occurring weekly to monthly	Bilateral cortical and hippocampal atrophy; age-appropriate periventricular white matter disease	L temporal sharp and slow wave complexes	LEV 250 bid	Partial response; repeat EEG on LEV was normal
												LTG	Not tolerated; more confusion
												Zonisamide 100 qhs	Seizure-free
35	AD	Chronic myelo-genous leukemia	F	R	79 (apathy)	86	85	13 (86)	Decreased vocalization, then R-sided tonic-clonic activity sometimes with generalization followed by a post-ictal state, occurring in clusters yearly	Not performed (CT brain showed diffuse atrophy and periventiricular white matter disease)	Diffuse slowing	PHT 400 qd	Neutral effects; developed sedation and ataxia
												LEV 1000 qam, 750 qpm	Partial response
36	AD	sleep apnea on CPAP, HL,B12 deficiency, depression	M	R	58 (memory)	64	62	27 (62)	Generalized tonic-clonic for 1 min followed by postictal state, occurring 4 times total	Bilateral hippocampal volume loss and minimal cortical atrophy	Semi-rhythmic 5-6 Hz slowing in bilateral frontotemporal regions	PHT 500 qd	Seizure-free
												LTG 150 bid	Seizure-free
37	AD	Depression, sleep apnea, HTN, HL	F	R	67 (memory)	75	72	29 (72)	Gastric upset, heavy chest, increased respiratory rate, physical agitation, traveling numbness, burping, and urgent need to urinate, followed by sleepiness and atony; episodes lasting minutes and occurring 2-10 times a day	Diffuse cortical and hippocampal atrophy (L>R), periventricular/ subcortical white matter disease	1st: frontal intermittent rhythmic delta activity 2nd (sleep deprived): epileptiform spike discharges in L frontotemporal region (F7), paroxysmal bursts of semirhythmic, frontally predominant diffuse delta activity 3rd (LTM 6 days while zonisamide weaned off): sharp waves in L frontotemporal lobe (F7)	LEV 1000 bid	Partial response
												Zonisamide 1000 bid	Partial response
												LEV 500 qd LTG 25 qd	Briefly used but had several breakthrough seizures
												Carbamazepine extended release 200 bid	Used for 2 months and had one possible seizure
												VPA 750 bid	Partial response
												VPA 1000 bid	Delirious and sedated
												VPA 250 bid LTG 12.5 qd	Partial response
												VPA 250 bid Lacosamide 50 qd	Partial response

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38	AD	Pacemaker for ictal bradycardia (captured on LTM)	M	R	58 (apathy)	59	59	24 (59)	Sinking sensations of hot and cold down center of body and diaphoresis, lasting several min, occurring in clusters every 15-60 min all day, every 2 weeks	Not performed (CT brain showed R>L dorsolateral atrophy)	1st (3 -day LTM) bi-hemispheric slowing during sinking spells, occasional L temporal slowing 2nd (2-day LTM): mild slowing, no events captured	Oxcarbazepine 750 bid	Neutral effects
												LTG 150 bid	Neutral effects
39	AD	Essential tremor, HTN	F	R	71 (memory)	74	77	16 (74)	Arm myoclonus with occasional loss of postural tone and confusion, every 5-10 min for 1 hr, every 2-3 days	Temporal > parietal atrophy bilaterally	1st: focal L hemispheric slowing and rare L central epileptiform discharges 2nd (2 hour): L-sided diffuse slowing and occasional sharpened elements over L central region	VPA 125 qam, 250 qpm	Partial response
												VPA 125 qam, 250 qpm Clonazepam 0.5 qd	Not tolerated due to imbalance
40	AD	Type II diabetes, HTN, HL, hypo-thyroidism, sleep apnea	F	R	80 (memory)	81	80	25 (81)	Sudden fear, lightheadedness, rhinorrhea, trembling in chest, and fatigue, lasting 60 sec, occurring monthly; once generalized with postictal R gaze deviation, L-sided weakness and neglect	Mild cortical and hippocampal atrophy, scattered T2 hyperintensities in periventricular and subcortical regions and cerebellum	Focal R hemisphere polymorphic delta slowing	LTG	Allergy during dose escalation
												LEV 125 qam, 250 qpm	Not tolerated due to behavioral worsening
41	AD	HTN, coccidio-mycosis treated	M	R	73 (memory)	74	72	24 (74)	Head turning to R with R hemibody jerking for minutes, followed by mutism for over an hour, then aphasia with paraphasic errors, occurring every few months	Generalized atrophy with mild periventricular white matter disease	1st: semi-rhythmic slowing over L frontal region with superimposed epileptiform discharges 2nd (4-day LTM): rare L temporal slowing and L mid-temporal sharps	PHT	Not tolerated due to encephalopathy, decreased appetite, and generalized weakness
												Oxcarbazepine 600 bid	Partial response
												Oxcarbazepine 600 bid LEV 500 bid	Seizure-free

Abbreviations: AD=Alzheimer's disease, AED=antiepileptic drug, aMCI=amnestic mild cognitive impairment, bid=twice a day, CABG=coronary artery bypass graft, CAD=coronary artery disease, CMZ=carbamazepine, cog.=cognitive, CPAP= continuous positive airway pressure, dx=diagnosis, G=gender, H=handedness, HTN=hypertension, HL=hyperlipidemia, L=left, LEV=levetiracetam, LTG=lamotrigine, LTM=long-term video-EEG monitoring, MMSE=Mini-Mental State Exam, OSA=obstructive sleep apnea, PAF=paroxysmal atrial fibrillation, PHT=phenytoin, PMH=past medical history, s/p=status post, qam=every morning, qd=every day, qhs=every bedtime, qpm=every evening, R=right, SD=standard deviation, tid=three times a day, TPM=topiramate, VPA=valproic acid.

eTable (continued):

Case	Dx	PMH	G	H	Age of onset of cog. decline (domain)	Age at dx of aMCI or AD	Age of 1st seizure or EEG abnormality	MMSE (0-30) (age)	Seizure semiology and frequency	MRI at age of dx of aMCI or AD	EEG	AED and dose (mg)	Efficacy/Tolerability
42	AD	Type II diabetes, sleep apnea on CPAP, h/o possible concussion s/p fall during college	M	R	69 (memory)	76	73	19 (78)	Myoclonic jerks in single or multiple limbs every 1-3 sec, with occasional perseverations and agitation, lasting 20-30 min, occurring hourly to daily	Generalized cortical atrophy, mild vascular disease	1st (on VPA): central midline spikes 2nd (on LEV 500 mg/day): polyspike discharges (Cz-Fz), time-locked to clinical myoclonus 3rd (2 hours while on LEV 500 mg/day): normal	VPA 750/day	Neutral effects
												LEV 250 bid	Partial response
												Clonazepam 1.5 bid	Partial response
43	AD	Type II diabetes, HTN, HL	M	R	79 (memory)	80	79	23/24 (80)	Staring spells, unresponsive and afterwards confused, lasting 15 min, occurring twice separated by weeks	Bilateral hippocampal atrophy	1st: normal, 2nd (1-day LTM): normal	None	n/a
44	AD	Migraines, depression, myoclonus	F	R	57 (language)	59	58	1 (59)	Subclinical epileptiform activity	Bilateral insular and temporal lobe atrophy (L>R), and bilateral hippocampal and parietal atrophy	1st: occasional spike and wave activity in L temporal region 2nd: bursts of bi-centrally predominant diffuse slowing 3rd: L>R bihemispheric slowing	LEV750 bid	Initially improvement in language
45	AD	HTN, HL, CAD s/p stent	M	L	76 (language)	79	78	29 (77)	Woozy, disoriented, blank expression, repeating self, shuffled walking, occasionally followed by generalized atony with loss of consciousness, lasting minutes to hours, occurring monthly	Hippocampal atrophy, (R>L), bilateral insular and orbitofrontal atrophy, subcortical and periventricular white matter changes	None	LTG 50 qam, 25 qpm	Seizure-free (partial response on 25 bid)

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eTable (continued):

Case	Dx	PMH	G	H	Age of onset of cog. decline (domain)	Age at dx of aMCI or AD	Age of 1st seizure or EEG abnormality	MMSE (0-30) (age)	Seizure semiology and frequency	MRI at age of dx of aMCI or AD	EEG	AED and dose (mg)	Efficacy/Tolerability
46	AD	HTN, HL	M	R	59 (memory)	64	66	25 (68)	Sudden feeling of dread/intense fear and diaphoresis, lasting minutes, occurring in clusters over 2-3 days once a month	L hippocampal atrophy and possible L mesial temporal sclerosis; mild global atrophy and patchy white matter changes	Normal (done at age 64 prior to seizures)	None	n/a
47	AD	HTN, HL, endometrial cancer s/p hyster-ectomy, meningitis age 2 without sequelae	F	R	55 (executive)	57	56	23 (57)	Subclinical epileptiform activity	Mild cortical atrophy	3-4 R anterior temporal epileptiform discharges	None	n/a
48	AD	Migraines, depression	F	R	50 (memory)	58	54	26 (55)	Overwhelming rancid smell followed by nausea/vomiting, lasting 1 min, occurring monthly	Mild hippocampal and cortical atrophy	1st: normal 2nd: R frontotemporal spikes and sharp waves	VPA 1500 ER qd	Partial response
												VPA 1500 ER qd, Carbamazepine	Carbamazepine not tolerated (ataxia)
												LTG 50 bid	Seizure-free
49	AD	Type II diabetes, HL, HTN, depression, uterine fibroids s/p hysterec-tomy	F	R	56 (memory)	69	69	17 (69)	Generalized tonic-clonic occurring 4 times over a few days	Moderate global cortical atrophy and subcortical ischemic vascular disease	None	VPA 1000 ER qd	Seizure-free
50	AD	Uveitis in childhood, depression/ anxiety, prostate cancer	M	R	60 (memory)	63	69	4 (70)	Generalized tonic-clonic and myoclonic seizures lasting 1-2 min followed by postictal confusion, occurring weekly to monthly	Generalized cortical atrophy	(1.5-day LTM) Diffuse slowing and generalized spike-wave discharges accompanying intermittent myoclonic jerks	LTG	Not tolerated due to aggressiveness
												Gabapentin 300 bid	Emergence of myoclonic jerks and breakthrough generalized tonic-clonic seizures
												VPA 375 ER bid	No efficacy

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eTable (continued):

Case	Dx	PMH	G	H	Age of onset of cog. decline (domain)	Age at dx of aMCI or AD	Age of 1st seizure or EEG abnormality	MMSE (0-30) (age)	Seizure semiology and frequency	MRI at age of dx of aMCI or AD	EEG	AED and dose (mg)	Efficacy/Tolerability
51	AD	Pacemaker for ictal bradycardia, HTN, anxiety	F	R	57 (memory)	61	61	24 (61)	Generalized atonic seizures lasting 30 sec, occurring twice in a month	Mild hippocampal atrophy R>L	1st: occasional frontal intermittent delta activity 2nd: 3-5 sec episodes of 2-3 hertz bifrontal sharp and slow wave activity	LTG 25 bid	Seizure-free
52	AD	HTN	F	R	74 (memory)	77	82	none	Subclinical epileptiform activity	Generalized cortical atrophy	Multifocal but predominantly L frontotemporal sharps	None	n/a
53	AD	HTN, HL, kidney stones	M	R	65 (memory)	70	70	24 (70)	Subclinical epileptiform activity	Diffuse atrophy, particularly in parietal regions, and subtly increased T2 signal in the hippocampi L>R	Intermittent bursts of bitemporal slowing (R>L) with R temporal sharp waves	None	n/a
54	AD	HTN, HL	M	R	45 (memory)	55	55	27 (55)	Subclinical epileptiform activity	Normal	Fragments of generalized epileptiform discharges	LTG 200 bid	Remained seizure-free

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