

Table 1. Demographic and clinical characteristics of the participant groups in the cognitive study according Val66Met genotype

Cognitive Study Participants		Met carriers n=82	Val/Val n=194	P value
Clinical ^a data	Age when seen	36.2(10.4)	34.9(9.8)	0.35
	Underwent surgery	53	120	
	Surgery Age	36.4(9.3)	36.2(9.6)	0.87
	Age at onset	12.7(9)	13.1(9.5)	0.75
	Duration of epilepsy	23.2(12.1)	23.9(11.2)	0.68
	Seizure laterality (Left)	47	106	0.39
	Caucasian	87.3%	89.1%	0.68
	White British	81%	82%	0.86
	Gender (Male/Female)	38/44	105/89	0.29
	Aetiology ^b	Hippocampal Sclerosis (HS)	73.2%	69.6%
Tumours		9.8%	9.8%	
Vascular abnormalities or disease		2.4%	4.1%	
HS + other aetiologies		6.1%	3.1%	
Trauma		0%	2.6%	
Cryptogenic		7.3%	10.3%	
Cortical develop. malformation		1.2%	0.5%	
AED ^b	Acetazolamide	2.4%	2.1%	1
	Carbamazepine	52.4%	45.9%	0.36
	Clobazam	20.7%	20.1%	1
	Clonazepam	1.2%	2.6%	0.67
	Diazepam	2.4%	1.5%	0.64
	Felbamate	0%	0.5%	1
	Gabapentin	3.7%	5.7%	0.77
	Lamotrigine	17.1%	21.1%	0.51
	Levetiracetam	35.4%	25.3%	0.11
	Oxcarbazepine	6.1%	6.7%	1
	Phenobarbital	2.4%	2.6%	1
	Pregabalin	3.7%	2.1%	0.43
	Phenytoin	9.8%	11.3%	0.83
	Primidone	3.7%	3.1%	0.73
	Tiagabine	0%	2.1%	0.32
	Topiramate	15.9%	13.9%	0.71
	Vigabatrin	3.7%	6.7%	0.41
Valproate	13.4%	18.6%	0.38	
Zonisamide	3.7%	3.6%	1	

^a = Values are mean (SD); ^b = proportion; AED = Antiepileptic drugs

Table 2. Mean (standard deviation) of patient demographics, hippocampal volumes and cognitive scores in the fMRI groups

fMRI Groups	Group 1		Group 2	
	Carriers Met	Val/Val	Carriers Met	Val/Val
Total	13	24	13	21
Age seen	37.7 (12.3)	39.4 (12.4)	36.2(7.4)	37 (10)
Gender (Female)	6	16	4	14
Age at onset	18.8 (12.3)	16.8 (18.7)	11.8 (9.1)	14.6 (7.7)
Seizure laterality (Right)	4	12	5	14
VIQ	92.3(11.9)	89.4(11.6)	94.3(13.2)	93.2(14.1)
PIQ	98(11.3)	99.1(11)	94.8(9.9)	95.3(17.3)
List Learning (%)	64.8 (16.5)	63.8 (17)	63.3(15.1)	59.2(13.5)
List Learning: Trial 6 (%)	64.6 (23.1)	65.2(23)	42.7(23.5)	48.6(21.8)
Design Learning (%)	76.6 (15.9)	72.8 (22.1)	61.9(18)	64.9(23.5)
Design: Trial 6 (%)	85.5 (24.6)	71(28.4)	60.6(20.6)	63.9(15.8)
Fluency "S"	14(5.4)	14(5.1)	11(8)	12.8(5.7)
RH Volume (cm3)	2.6 (0.7)	2.4 (0.5)	2.4 (0.8)	2.4 (0.8)
LH Volume (cm3)	2.7 (0.7)	2.1 (0.7)	2.3 (0.6)	2.6 (0.6)

fMRI = functional MRI; VIQ = verbal IQ; PIQ = performance IQ; RH = Right Hippocampus; LH = Left Hippocampus.

Table 3. Z scores by cognitive domain and p-values according Val66Met genotypes in the cognitive group (n=276)

Domain Memory	Cognitive Tests	Z scores		P Values
		Carriers Met	Val/Val	
Immediate Visual	Figure Recall	-0.24(1.01)	0.1(0.98)	0.01
Immediate Verbal	List Learning: trials 1-5 Story Recall Immediate List Learning: List B	-0.78(0.80)	0.01(0.81)	0.41
Delayed Visual	Figure Recall Delayed % Retained	-0.17(0.91)	0.08(0.83)	0.03
Delayed Verbal	List Learning: Trial 6 Story Recall Delayed	-0.2(0.87)	0.07(0.81)	0.02

Tests from the Adult Memory and Information Processing Battery (AMIPB);
L1-5: list from 1 to 5.