

P300

82 52 P300
 Nicdet Viking Quste
 P300
 (TMI- A TMI- B) Stroop () WMS-
 (P 0.01)
 P300 (t=22.990 P 0.01) (t= 9.699)
 P 0.01) P300 TMI- A (r=0.481 P 0.01)
 r=0.245 P 0.05) P300 (r=- 0.338 P 0.01)
 P300

P300

doi 10.3969/j.issn.1009-6574.2017.03.007

Correlation between cognitive function and event-related potential P300 in male long-term hospitalized patients with schizophrenia GAO Mao-jun XIAO Wen-huan TANG Xiao-wei et al. Wutaishan Hospital of Medical College of Yangzhou University Yangzhou 225009 China

Abstract Objective To investigate the relationship between cognitive function and event-related potential P300 in male long-term hospitalized patients with schizophrenia. **Method** Totals of 82 male long-term hospitalized patients with schizophrenia and 52 healthy controls were recruited. The event-related potential P300 was analyzed by the United States Nicolet Viking Quest evoked potential instrument. The cognitive function was tested by animal naming test category fluency test digital cancellation test trail taking test (TMI- A TMI- B) stroop test (word colour word-colour interference test) block design test and WMS- spatial span test. **Results** There were significant differences between patient group and control group in all items of cognitive function assessment scales (P 0.01). There were longer latency of P300 (t=22.990 P 0.01) and lower amplitude of P300 (t= 9.699 P 0.01) in patient group than that in control group. The P300 latency was positively correlated with digital cancellation test and the score of TMI- A in patient group (r=0.481 P 0.01 r=0.245 P 0.05). Moreover P300 amplitude was negatively correlated with digital cancellation test in patient group (r=- 0.338 P 0.01). **Conclusion** The male long-term hospitalized patients with schizophrenia still have cognitive impairment even when their psychiatric symptoms are stable. The latency and amplitude of event-related potential P300 may be an electrophysiological marker of cognitive function in schizophrenic patients which were correlated with the results in the cognitive assessment scales.

Keywords Schizophrenia Event-related potentials P300 Cognitive function

3

P300

P300

48.0%~53.3%

P300

45.9%~70.5%

P300

1-2

P300

(YZ2014215)

4

(Z201522)

225009

P300

Email zhangxiabin@163.com

1
 1.1 2015 8 ~2016 7 0.5~100 Hz 600 ms 5 K

(1)
 (DSM 5)

(2) 5 80%

(3) P300 (P300

(4) (1)) (P300

(2) (3))

(4) 1.3 SPSS 16.0

(5) ± (x± s)

82 (52.0± 7.5) t

(8.9± 3.0) (28.35± 6.85)

(47.241± 21.996)mg/d

Pearson

P 0.05

(PANSS) 91-120 7 61-90 24

60 51 (58.51± 18.94) 2

(10.83± 4.75) (18.28± 8.73) 2.1 1

(29.66± 8.77)

(1) (P 0.01)

DSM 5 (2)

(3) (1)

(2)

(3) (52.9± 5.7)

52 (9.8± 2.9)

(P 0.05)

	1	(x± s)		t
	(n=82)	(n=52)		
()	11.07± 5.48	16.30± 3.19	- 6.446 [§]	
()	5.69± 3.96	11.16± 3.44	- 7.514 [§]	
(s)	313.60± 298.83	170.89± 58.09	3.744 [§]	
TMF- A(s)	107.65± 59.98	69.93± 33.84	4.203 [§]	
()	49.55± 19.78	70.05± 16.61	- 5.651 [*]	
()	30.42± 13.26	43.68± 13.93	- 5.022 [§]	
()	17.52± 9.11	23.86± 9.35	- 3.526 [§]	
TMF- B(s)	236.46± 93.04	151.50± 66.81	4.576 [§]	
()	17.97± 8.35	29.37± 6.10	- 8.355 [§]	
WMS- III ()	12.21± 3.79	16.56± 7.08	- 4.269 [§]	

*P 0.01

(3) A(TMf- A) Stroop

(4) B(TMf- B) Stroop

WMS- III

TMf- A TMf- B 2.2 P300

2 P300

1.2.2 P300 (P 0.01)

Nicolet Viking Quste 2.3 P300

P300 3 4

10/20 Cz P300 TMf- A

A1 FPz (P 0.05)

Oddball (P 0.01) P300

80% 85 dB 1 000 Hz

20% 95 dB 2 000 Hz PANSS (P 0.05)

	2	P300	($\bar{x} \pm s$)
		(ms)	(μV)
	82	409.38 \pm 27.34	4.69 \pm 1.02
	52	309.69 \pm 22.44	7.32 \pm 1.78
t		22.990 [†]	- 9.699 [†]

*P 0.01

	3	(r)
--	---	------

		- 0.104	0.124
		- 0.231	0.137
		0.481**	- 0.338*
TMT- A		0.245 [†]	0.046
		- 0.164	0.178
		- 0.081	0.034
		0.044	- 0.023
TMT- B		0.317	- 0.126
		- 0.004	0.072
VMS- III		- 0.219	0.183

*P 0.05 **P 0.01

	4	(r)
--	---	------

		0.201	- 0.054
		- 0.099	0.102
		0.198	0.007
		- 0.057	0.099
PANSS		0.072	0.052
		- 0.159	0.176
		0.118	0.004
		0.155	- 0.016

P 0.05

3

4

5.6

Sui 7

P300

P300

8.9

P300

P300

P300

P300

6

P300

10

11

P300

P300

P300

Mathis 12

P300

13

P300

P300

P300

P300

TMT- A

P300

TMT- A

(183)

. 179

placebo- controlled trial J . Am J Clin Nutr 2006 84(2):361-370

11 Mabrouk H Douki W Mechri A et al. Hyperhomocysteinemia and schizophrenia: case control study J . L' Encéphale 2011 37(4):308-313

12 J . 35 64 2002 24(4):352-356

13 B₁₂ J . 2009 35(1):40-41.

14 J . 2016(B06):1684

15 Mitchell ES Conus N Kaput J. B vitamin polymorphisms and behavior: Evidence of associations with neurodevelopment depression schizophrenia bipolar disorder and cognitive decline J . Neurosci Biobehav Rev 2014 47:307-320

16 Kim TH Moon SW. Serum Homocysteine and Folate Levels in Korean Schizophrenic Patients J . Psychiatry Investig 2011 8(2):134-140

17 J . 2014 94(13):990-993

18 J . 2015 32(4):737-739

19 J . 2015 14(6):510-513

20 Pérez de la Ossa N Sobrino T Silva Y et al. Iron-related brain damage in patients with intracerebral hemorrhage J . Stroke 2010 41(4):810-813

21 Sørensen HJ Nielsen PR Pedersen CB et al. Association between prepartum maternal iron deficiency and offspring risk of schizophrenia: population-based cohort study with linkage of Danish national registers J . Schizophr Bull 2011 37(5):982-987.

22 Yanik M Kocyigit A Tutkun H et al. Plasma manganese selenium zinc copper and iron concentrations in patients with schizophrenia J . Biol Trace Elem Res 2004 98(2):109-117. (2017-01-04)

(179) 3 J . 2015 15(2) 112-114

P300 4 (P300)

13 JCD (

P300 N1 P2) 2015 5(4) 60-63

5

P300 6 J . 2016 26(5) 329-331.

6 Krakowski M Czub P. Proneness to aggression and its inhibition in schizophrenia: Interconnections between personality traits cognitive function and emotional processing J . Schizophr Res 2016

7 Sui J Pearson GD Du Y et al. In search of multimodal neuroimaging biomarkers of cognitive deficits in schizophrenia J . Biol Psychiatry 2015 78(11) 794-804

8 Jeon YW Polich J. Meta-analysis of P300 and schizophrenia patients: paradigms and practical implications J . Psychophysiology 2003 40(5) 684-701.

9 P300 2012 22(6) 403-404

10 Higuchi Y Sumiyoshi T Kawasaki Y et al. Electrophysiological basis for the ability of darzapine to improve verbal memory and functional outcome in patients with schizophrenia: a LORETA analysis of P300 J . Schizophr Res 2008 101(1/3) 320-330

11 P300 J . 2009 22(4) 259-261.

12 Mathis KI Wynn JK Jahshan C et al. An electrophysiological investigation of attentional blink in schizophrenia: separating perceptual and attentional processes J . Int J Psychophysiol 2012 86(1) 108-113

13 P300 J . 2015 25(5) 49-52 (2017-02-07)

1 Medalia A Lim R. Treatment of cognitive dysfunction in psychiatric disorders J . J Psychiatr Pract 2004 10(1) 17-25

2 J . 2016 26(1) 38-40