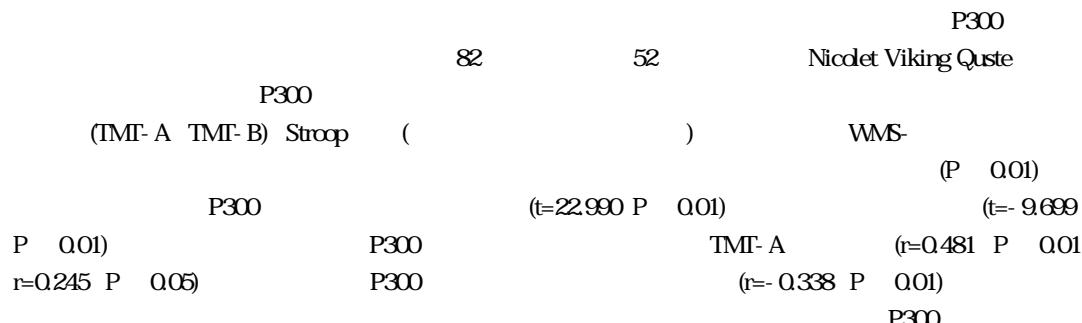


P300



P300

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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 (TMT-A TMT-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 TMT-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

1-2

3

P300

48.0%~53.3%

P300

45.9%~70.5%

P300

P300

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4

P300

| | | | | | | | |
|----------|----------------------|--------|-----|-----------------|------|------------|---------------------|
| 1 | | | | | | | 5 K |
| 1.1 | | 2015 | 8 | ~2016 | 7 | 0.5~100 Hz | 600 ms |
| | | | | (1) (DSM-5) | | | |
| | (2) | 5 | | | | 80% | |
| | | | (3) | | P300 | (| P300 |
| (4) | | (1) | | | |) | (|
| | (2) | | (3) | | | | P300 |
| | | | (4) | | 1.3 | | |
| | | | | | | SPSS 16.0 | |
| | (5) | | | | | ± | ($\bar{x} \pm s$) |
| | 82 | | | (52.0 ± 7.5) | | | t |
| | (8.9 ± 3.0) | | | (28.35 ± 6.85) | | Pearson | |
| | (47241 ± 21996) mg/d | | | | | P < 0.05 | |
| | (PANSS) | 91~120 | 7 | 61~90 | 24 | 2 | |
| 60 | 51 | | | (58.51 ± 18.94) | | 21 | |
| | (10.83 ± 4.75) | | | (18.28 ± 8.73) | | | 1 |
| | (29.66 ± 8.77) | | | | | | |

| DSM-5 (3) | (3) | (1) | (2) | (1) | (P Q01) | 1 | | $(\bar{x} \pm s)$ | | | | | |
|--------------------|------------|---------|-----|-----|---------|--------------|-----------------|-------------------|---------|--|--|--|--|
| | | | | | | 项目 | 患者组 (n=82) | 对照组 (n=52) | | | | | |
| (9.8±2.9) | (52.9±5.7) | (P Q05) | (2) | (2) | (P Q01) | 言语流畅性功能 | | | | | | | |
| | | | | | | 范畴流畅(个) | 11.07 ± 5.48 | 16.30 ± 3.19 | -6.446* | | | | |
| | | | | | | 动物命名(个) | 5.69 ± 3.96 | 11.16 ± 3.44 | -7.514* | | | | |
| | | | | | | 注意功能 | | | | | | | |
| | | | | | | 数字划消(s) | 313.60 ± 298.83 | 170.89 ± 58.09 | 3.744* | | | | |
| | (10) | | | | | TMT-A(s) | 107.65 ± 59.98 | 69.93 ± 33.84 | 4.203* | | | | |
| | | | | | | 单词测验(个) | 49.55 ± 19.78 | 70.05 ± 16.61 | -5.651* | | | | |
| | | | | | | 颜色测验(个) | 30.42 ± 13.26 | 43.68 ± 13.93 | -5.022* | | | | |
| | | | | | | 执行功能 | | | | | | | |
| | | | | | | 色词干扰测验(个) | 17.52 ± 9.11 | 23.86 ± 9.35 | -3.526* | | | | |
| △(TMT-A) Stroop | | | | | | TMT-B(s) | 236.46 ± 93.04 | 151.50 ± 66.81 | 4.576* | | | | |
| (2) | | | | | | 空间功能 | | | | | | | |
| | | | | | | 木块图(分) | 17.97 ± 8.35 | 29.37 ± 6.10 | -8.355* | | | | |
| | | | | | | WMS-III总分(分) | 12.21 ± 3.79 | 16.56 ± 7.08 | -4.269* | | | | |

| | | | | |
|------|---|---|--|-----------------------|
| 1.22 | P300 Nicdet Viking Queste P300 10/20 A1 | Cz FPz 80% 85 dB 1 000 Hz 20% 95 dB 2 000 Hz | (P < 0.01) 2.3 P300 P300 (P < 0.05) (P < 0.01) PANSS (P < 0.05) | 3 4 TMT- A P300 |
|------|---|---|--|-----------------------|

| 2 | | P300 | $(\bar{x} \pm s)$ |
|----------|----|----------------|-------------------|
| 组别 | 例数 | 潜伏期(ms) | 波幅(μ V) |
| 患者组 | 82 | 409.38 ± 27.34 | 4.69 ± 1.02 |
| 对照组 | 52 | 309.69 ± 22.44 | 7.32 ± 1.78 |
| t值 | | 22.990* | -9.699* |

*P < 0.01

P300

P300

| 3 | | (r) | |
|------------|--|---------|----------|
| 项目 | | 潜伏期 | 波幅 |
| 言语流畅性功能 | | | |
| 范畴流畅 | | -0.104 | 0.124 |
| 动物命名 | | -0.231 | 0.137 |
| 注意功能 | | | |
| 数字划消 | | 0.481** | -0.338** |
| TMT-A | | 0.245* | 0.046 |
| 单词测验 | | -0.164 | 0.178 |
| 颜色测验 | | -0.081 | 0.034 |
| 执行功能 | | | |
| 色词干扰测验 | | 0.044 | -0.023 |
| TMT-B | | 0.317 | -0.126 |
| 空间功能 | | | |
| 木块图 | | -0.004 | 0.072 |
| WMS-III 总分 | | -0.219 | 0.183 |

*P < 0.05 **P < 0.01

P300

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89

P300

10

P300

P300

P300

P300

| 4 | | (r) | |
|----------|--|--------|--------|
| 项目 | | 潜伏期 | 波幅 |
| 年龄 | | 0.201 | -0.054 |
| 受教育年限 | | -0.099 | 0.102 |
| 病程 | | 0.198 | 0.007 |
| 氯丙嗪当量 | | -0.057 | 0.099 |
| PANSS 总分 | | 0.072 | 0.052 |
| 阳性症状总分 | | -0.159 | 0.176 |
| 阴性症状总分 | | 0.118 | 0.004 |
| 一般精神病理总分 | | 0.155 | -0.016 |

P < 0.05

Mathis

12

P300

P300

P300

3

P300

13

P300

4

P300

5 6

P300

TMT- A

P300

TMT- A

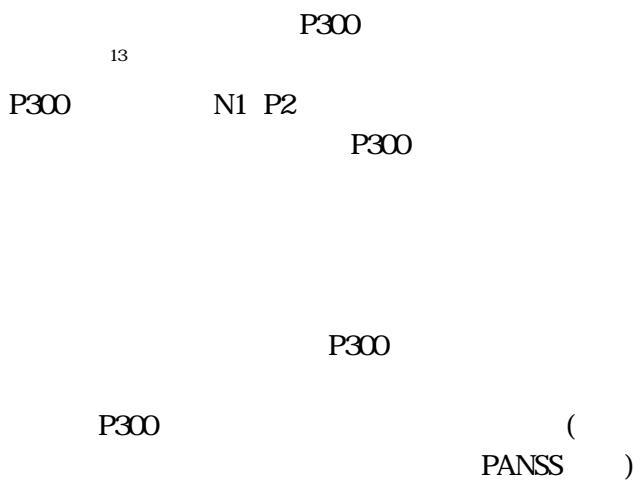
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