

脑外伤后的注意、记忆和信息 处理能力障碍及其恢复

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【内容摘要】 用划消测验、同步听觉系列加法测验及临床记忆量表对 105 例脑外伤患者进行了调查,以观察脑外伤后患者的注意、记忆和信息处理能力受损程度,并在伤后 5 个月左右进行复查,以观察上述障碍的恢复情况。49 名年龄和文化水平相当的正常人作为对照组。结果表明脑外伤后注意、记忆、信息处理能力均显著受损。5 个月左右后中型脑外伤患者上述障碍已基本恢复。重型脑外伤患者上述心理功能虽有明显恢复,但尚未恢复到正常水平。

关键词 脑外伤 注意 记忆 信息处理能力

脑外伤后的康复研究,国外已有一些报道^[1-4],在我国尚未引起足够重视。我们曾随访 301 例脑外伤患者,发现有 50% 在伤后 1.5~3 年仍自觉遗留各种心理障碍^[5]。本研究目的在于进一步了解脑外伤后某些心理障碍的严重程度,心理障碍与受伤程度的关系,同时观察这些心理障碍的自然恢复的可能性及恢复所需时间,以便为开展康复工作提供基本信息。

对象和方法

受试者为 1988 年 6 月~1989 年 9 月经天坛医院神经外科收治的脑外伤患者 105 例。重型 50 例,中型 55 例。男性 77 例,女性 28 例。年龄 17~50 岁,平均 28.9 岁。均为初中以上文化水平,平均受教育 10.4 年。重型组平均 28.3 岁,平均受教育 10.1 年。中型组平均 29.3 岁,平均受教育 10.6 年。设对照组 49 人,平均年龄 28.6 岁,平均受教育 10.4 年。脑外伤分型,临床采用国内沿用的轻、中、重型标准,结合 GCS 评分把清醒血肿患者排除在重型之外。

调查方法: 1. 符号划消测验的测试表共有 50 行,含 14 种不同类型的符号,随机排列在各行中。每行共有 40 个符号,含目标刺激符号 4

个,其余为非目标刺激符号。测验包括 A、B 两个部分。进行 A 测试时主试者指定一个符号为目标刺激,令受试者逐行划掉。B 部分以每行第一个符号做为目标刺激符号,要求将此行中与第一符号相同的符号划掉。测试方法是当听到主试者说“开始”,受试者马上按要求划掉应划掉的目标刺激符号,当听到主试者说“停”,受试者需在正阅读的符号上打钩。A、B 两部分各测试 5 分钟。计分方法是将 A、B 两部分打钩前的所有符号计为阅读数,两部分阅读数相加则是总阅读数。A、B 两部分凡不是规定的目标刺激符号被受试者划掉判为错误,错误率 = $\frac{\text{错误总数}}{\text{总阅读数}} \times 100\%$ 。测试表每行都有 4 个目标刺激符号应划掉,计算打钩前的每行未被划掉的目标刺激符号数为漏划数,漏划率 = $\frac{\text{漏划数}}{\text{应划数}} \times 100\%$

2. 同步听觉系列加法测验,用录音机播放 3 个系列数字,播放速度分别为 2.4; 2.0 秒 1.6 秒。要求受试者把相邻的两个数字不断相加并立即写出答数,每系列应有 60 个答数。每个正确答数记 1 分,计算出每个系列的总得分。

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3. 记忆检查采用临床记忆量表^[6], 进行测试。所有测查项目均在患者入院两周左右测试第一次。53 名患者(中型 24 例, 重型 29 例)出院后 3~7 个月, 平均 5 个月时测查第二次。

结 果

第一次测查结果, 划消测验 A 的总阅读数, 错误率, 重型组及中型组成绩均比对照组差, 差异有显著或极显著意义 ($P < 0.05 \sim 0.001$), 测验 B 的错误率, 中型组与对照组差异显著 ($P < 0.05$), 漏划率重型显著比对照组高 ($P < 0.01$)。测验 A 的总阅读数、错误率及测验 B 的总阅读数成绩重型组显著比中型组差 ($P < 0.05 \sim 0.001$), 见表 1。记忆检查, 中型组和重型组的记忆商均显著低于对照组 ($P < 0.001$), 重型组与中型组间也有明显差别 ($P < 0.05$) 见表 1。同步听觉系列加法测查结果表明三种呈现速度的成绩重、中两组均显著低于对照组, 差异非常显著 ($P < 0.001$), 重型组成绩亦明显低

于中型组 ($P < 0.05 \sim 0.001$), 见表 2。

上述结果表明脑外伤后患者的注意、记忆及信息处理能力均有明显受损、受损程度与脑外伤严重程度有关。

第二次测查由于种种原因有些病人不能来院, 因此第二次成绩是 53 例的成绩。本文把中型 24 例, 重型 29 例第一次成绩单列计算列入表中, 以便与自身第二次成绩进行比较。测试结果表明, 中型组第二次划消测验除漏划率外各项成绩均比第一次明显提高 ($P < 0.05 \sim 0.001$); 记忆成绩也有显著提高 ($P < 0.001$), 并且成绩与对照组已无明显差异。重型组第二次成绩提高与中型组相似, 但划消测验中的总阅读数及记忆成绩与中型组、对照组仍有明显差异 ($P < 0.001$) 见表 1。重型、中型两组同步听觉系列加法第二次成绩三种呈现速度均比第一次有明显提高。中型组提高的更显著 ($P < 0.001$), 已达到对照组水平。重型组第二次成绩虽比第一次提高但仍明显低于在中型组, 尚未达到对照组水平。

表 1 注意、记忆测查成绩比较 ($\bar{x} \pm SD$)

组别	例数	划 消 测 验						记忆检查
		总 阅 读 数		错 误 率		漏 划 率		MQ
		A	B	A	B	A	B	
对照	49	817.7±155.7	595.7±124.9	0.07±0.1	0.8±1.1	17.5±9.3	9.8±8.0	106.3±10.1
中型	55	△△△ 606.9±154.2	△△△ 425.5±139.5	△△ 0.6±1.5	△ 2.0±3.9	△△△ 14.4±8.6	△ 14.0±13.1	△△△ 89.5±19.6
重型	50	△△△*** 495.1±159.5	△△△* 367.4±127.2	△△△*** 3.1±6.0	△△△* 4.7±6.3	△△ 16.4±12.9	△△ 20.2±26.4	△△△* 78.3±13.0
中型	24(一次)	△△△ 641.8±151.7	△△△ 429.8±148.9	△ 0.5±1.6	△△ 2.3±4.0	△△△ 13.8±8.9	△△ 14.1±17.0	△△△ 89.5±19.6
	24(二次)	△△△ 814.9±186.8	△△△ 551.3±139.8	△△△ 0.03±0.09	△△△ 0.6±0.7	△△△ 14.8±6.9	△△△ 8.3±6.0	△△△ 107.3±15.3
重型	29(一次)	△△△*** 477.1±168.9	△△△* 363.7±129.6	△△△* 2.5±5.5	△△△* 5.1±7.0	△△ 16.0±10.8	△△ 18.1±18.9	△△△* 70.8±14.6
	29(二次)	△△△... 684.8±212.5	△△△... 491.3±139.1	△△△... 0.3±1.5	△△△... 0.6±1.2	△△△... 15.9±10.7	△△△... 11.9±9.0	△△△***... 91.9±10.3

注: 患者与对照比 △△△ $P < 0.001$, △△ $P < 0.01$, △ $P < 0.05$, 重型与中型比 *** $P < 0.001$, ** $P < 0.01$, * $P < 0.05$, 同组两次间比 ... $P < 0.001$, . . . $P < 0.01$, . $P < 0.05$

我们记录了患者第二次测查时自述身心障碍及其恢复工作的情况。部分患者叙述有某些

心理障碍(如健忘、注意力不集中、睡眠差、情绪不稳定等)及躯体不适(如头痛、头晕等)。

中型组 29%、重型组 28%述有心理障碍。中型组 38%、重型组 28%述躯体不适。中型组 79%、重型组 65.5%在伤后 7 个月内恢复工作和学习。在 1 个月内恢复工作的, 中型组有

42%, 重型组有 7%。在第二次测试时患者普遍反应, 若是在受伤前进行这些测试会比较轻松、顺利的完成的, 而现在却很费力、感到很很累。

表 2 同步听觉系列加法成绩比较 ($\bar{x} \pm SD$)

组别	例数	呈现速度 (秒)		
		2.4	2.0	1.6
对照	49	50.7±8.0	42.7±10.3	35.9±8.9
中型	55	△△△ 40.0±12.6	△△△ 32.5±9.0	△△△ 26.5±5.6
		△△△ * 32.3±16.3	△△△ * * * 25.0±13.6	△△△ * * * 22.6±10.1
中型	24(一次)	△△△ 40.4±12.4	△△△ 32.3±9.1	△△△ 26.4±5.5
	24(二次)	* * * 51.5±7.6	* * * 43.3±9.8	* * * 35.6±7.4
重型	29(一次)	△△△ * 32.1±16.0	△△△ * * 25.8±12.9	△△△ * 22.3±10.0
	29(二次)	△△ * * * 41.7±13.5	△△ * * * 36.0±12.0	△△ * * 29.3±9.8

注 同表 1

讨 论

本研究结果表明脑外伤后注意、记忆、信息处理能力均显著受损。伤后平均 5 个月左右中型组划消测验成绩、记忆商及同步听觉系列加法测验成绩均已与对照组无明显差别, 说明中型组患者上述心理功能已基本恢复到正常水平。重型组患者第二次成绩虽有明显提高, 但仍显著低于对照组, 表明他们上述心理功能也有恢复, 但尚未恢复到正常水平。

Gronwall 等认为注意有三种成分, 即警戒、选择性和信息处理速度^[2]。本文患者划消测验的错误率明显超过对照组, 原因是他们在许多非目标刺激符号中只选择目标刺激符号的能力下降, 也就是说注意的选择性有所下降。患者划消测验的总阅读数及同步听觉系列加法测验的成绩下降, 表明他们对信息处理的速度减慢了。划消测验 A 的漏划率对照组与患者组无明显差异, 原因是测验 A 在 5 分钟内仅划掉一种目标刺激符号, 对照组的受试者感到容易, 只注意了速度快, 不错划而对不要漏划重视的程度

相对就差些。另一个原因是测试表每行 40 个符号中只有 4 个应划掉的目标刺激符号, 虽然对照组阅读符号的总数远远超过患者组, 但阅读过的各行中应划掉的目标刺激符号数, 超过患者组就不那么多了。漏划率的计算方法是计漏划数占应划数的百分之几, 只要多漏划几个, 百分率就会升高。测验 B 每行划掉的目标刺激符号都不一样, 要求有一定的注意转换能力, 难度比测验 A 大, 对照组测验 B 的阅读速度比 A 减慢, 漏划率显著减少, 患者组测验 B 的阅读速度也减慢但漏划率未减少并比对照组高, 重型组与对照组有显著差异, 说明患者的注意转换能力较对照组差。

注意本身并不是一种独立的心理过程, 它贯穿在感觉、知觉、记忆和思维等认知心理过程中。在上述心理活动中, 注意起到不可忽视的作用。它可成为一些人认知缺陷的基础。本文患者第一次测查时, 注意、记忆同时出现障碍而复查时两者均有改善, 很可能患者注意力下降是记忆力下降的原因之一。

重型脑外伤患者注意、记忆及信息处理能

力的损害比中型严重而恢复亦比中型差,这显示出上述心理功能的损害程度及恢复均与脑损害程度有关,此结果与我们过去的工作结果有一致性^[7],再次说明心理功能依赖于脑结构的完好,尤其是高级心理功能更是如此。

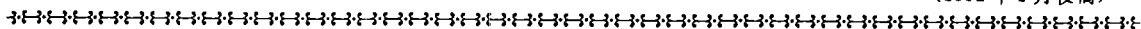
患者第一次测查时,临床检查已无阳性发现,而部分患者在第二次测查时,仍自述有头痛及情绪改变等。分析原因可能是患者在同一时间内处理信息的量比过去减少,使本来较容易就可完成的任务,变得需集中全部注意力才能完成。这样就会提高注意的紧张度,使患者易产生疲劳,造成工作效率下降,完成过去的工作和学习任务感到困难,因此引起心情紧张、焦虑、失眠而出现紧张性头痛。文献报导^[2],脑震荡患者注意力恢复的划界天数为伤后 35 天,此时恢复工作和学习将不引起头痛,不易发生脑震荡综合症。本文中患者在一个半月内恢复工作的占 42%,他们是在注意力尚未恢复时去工作和学习的,势必增加注意力的紧张度,这也可能是患者出现紧张、焦虑、失眠和头痛的原因。因此,我们认为脑外伤后不宜过早地恢复原工作或学习,并希望临床医生向患者讲明在伤后一段时

间内,有可能出现记忆、注意、信息处理能力的下降,但这种能力的下降并非是不可逆的,经过一段时间后可以恢复的。这样可防止患者误认为脑外伤后将终身留有上述功能的下降而产生神经症性反应,影响到以后的工作、学习和生活质量。

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无症状脑出血 1 例报告

北京 263 医院 李澎泳报道 岳××,女,46 岁。入院当日凌晨醒后,自感全身无力、不适,无头晕、头痛、恶心、呕吐及肢体活动障碍等症状及体征。有高血压病史 20 余年,血压波动于 22.7~25.3/13.3~14.7kPa。三年前曾有言语不清,左侧肢体轻瘫病史,当时诊断:脑血栓形成(未做头颅 CT),已痊愈。查体:血压 23.3/16.0kPa。神清,无言语障碍。双瞳,对光反应存在,双眼球运动自如,未见面、舌瘫,颈软无抵抗。四肢肌力、肌张力正常,无自主运动及共济失调。无深、浅感觉障碍。病理征阴性,脑膜刺激征阴性。诊断:高血压病。次日头颅 CT 扫描示:左尾状核头部出血并破入脑室。出血量约 10ml。最后诊断:脑出血。本例无明显症状与体征,可能与病变部位及出血量少有关。据文献报道:尾状核头部局限性较小的损害不产生明确可察异常;局部少量出血未压迫运动、感觉传导束,故无明显局灶性定位体征。又因出血量少且破入脑室,加之本病人有轻度脑萎缩存在,故无明显高颅压征。

(内 摘)

海洛因依赖 68 例临床资料分析

广州市精神病院 老洪尧等报道 68 例海洛因依赖住院患者(广州市精神病院 30 例,顺德凤山医院 38 例)均符合 DSM-III 的鸦片类物质依赖的诊断标准。本组资料与云南省边区温氏资料^[1]比较,显示鸦片类依赖患者均以文化程度较低(初中以下占 78~97%),青年人(平均年龄 26~29 岁)男性者居多(95%以上);吸毒动机主要是好奇(占 62~65%),与国内资料报导一致。吸毒方式以香烟和/或追龙形式多见(70%以上)注射(肌注或静注)次之,服食或用烟斗形式仅见于云南边区。戒毒次数在两次以上者达 23~49%,提示心理依赖在一个相当长的时期内依然存在。此外广东沿海地区与云南边陲地区鸦片类依赖患者的临床特点有一定差异。表现在职工分布(广东以无固定职业和个体户多见,云南以农民、工人、干部多见)、婚姻情况(广东以未婚者多见,离婚者众,云南以已婚者多些,离婚者少)、家庭成员中同患率(广东少见,云南多见)和以治病为吸毒动机者(广东少见,云南多见)均有不同,作者认为这些差异是两地区的地理环境,民族、文化、风俗习惯和经济发展情况不同所致。

(精 摘)

acute phase of cerebrothrombosis was elevated significantly as compared with that of controls ($p < 0.01$). However, the difference was not significant between the patients after relief and the controls. 2. The number of GPIb molecules on the platelet surface in 22 patients was significantly increased as compared with that of controls ($p < 0.05$), while the number of GP II_b and GMP-140 molecules on the platelet surface was not changed significantly ($p > 0.05$). 3. The concentration of TXB₂ was increased significantly ($p < 0.001$) in both acute and relief phases of cerebrothrombosis. 4. The platelet counting in cerebrothrombosis was not different strikingly from that of controls. These results indicated that the platelet adhesion and release were enhanced in acute cerebrothrombosis. The measurement of GMP-140 molecules in plasma may be considered as one of the specific diagnostic indexes for cerebrothrombosis in vitro.

Key Words Cerebrothrombosis
Platelets Alpha-granule membrane protein
Monoclonal antibody Radioimmunoassay

(Original article on page 204)

Evaluation of lacunar syndromes. *Huang Ruxun and Huang Zongjing. Department of Neurology, The First affiliated Hospital, Sun Yat-sen University of Medical Sciences. Guangzhou. 510080*

We have analysed the clinical and imaging data of 260 patients with classic lacunar syndromes (LS). No peculiar pathologic features about the nature, site and size of LS were found. The etiology and the pathogenesis of LS were complicated. The prognosis which depended on various factors was not always benign. The clinical definition of LS has lost its significance and even resulted in confusion some cases. It was suggested that the term of LS should be substituted by diagnosis of pathology and etiology if possible.

Key Words Lacunar syndrome Imag-

ing Lacunar infarction

(Original article on page 207)

The positive percentage of antibodies to acetylcholine receptor and its significance in myasthenia gravis. *Lu Chuanzhen and Xiao Baogao. Institute of Neurology, Shanghai Medical University. Shanghai. 200040*

Two hundred and twenty-four samples of sera from 162 patients with myasthenia gravis (MG) were detected for antibodies to Acetylcholine receptor (AChR) by Avidin-Biotin complex enzyme linked immunoabsorbent assay (ABC—ELISA). The results showed that the positive percentage of the antibodies to AChR was 80.2% for MG, 27% for other diseases, none in healthy subjects. The antibodies level in simple ocular type of MG was significantly lower than that in other types of MG patients. It was also found that neither plasmaphoresis nor steroid treatment can influence the positive rate of the antibodies to AChR. We considered that the antibodies to AChR in MG were very important parameters for diagnosis and autoimmune pathogenetic studies, although there was no correlation between AChRab and clinical status.

Key Words Myasthenia gravis Acetylcholine receptor antibody

(Original article on page 211)

The disorders of attention, memory and the ability of information processing and their recovery in patients with brain injury. *Yan Xiwei. Beijing Neurosurgical Institute, Tang Cimei. Institute of Psychology, Chinese Academy of Sciences. Beijing. 100050*

Attention, the ability of information processing and memory were investigated with Cancellation Test, Paced Auditory Series Addition Test and Clinical Memory Scale in 105 patients with brain injury. All of these tests were repeated 5 months

later. Forty-nine normal subjects matched with age and education level were taken as control group. The results showed that attention, the ability of information processing and memory were markedly impaired in patients with brain injury. Recovery of these disorders mentioned above was observed in the patients with moderate brain injury 5 months later. There was only a significant improvement but not total recovery in the patients with severe brain injury.

Key Words Brain injury Attention
Memory Information processing
(Original article on page 214)

The change of acid-base balance in blood and CSF after severe brain injury. *Li Mu, et al. Department of Neurosurgery, Huan Hu Hospital. Tianjin. 300060*

The P_{O_2} , P_{CO_2} , pH, and HCO_3^- level in arterial blood and cerebrospinal fluid (CSF) were determined in 14 patients with severe brain injury. It was shown that metabolic acidosis appeared in CSF, systemic respiratory alkalosis and hypoxaemia occurred at the acute stage after severe brain injury. Significant negative correlation was found between intracranial pressure and CSF pH. CSF pH had important value to indicate the prognosis of brain injury.

Key Words Brain injury Acid-base
balance Cerebrospinal fluid Acidosis
Intracranial pressure
(Original article on page 218)

A sleep research on paranoid schizophrenics. *Sun Xueli, et al. Department of Psychiatric Research, West China University of Medical Sciences. Chengdu. 610041*

By comparing 30 paranoid schizophrenics with 30 normal subjects, it was found that REM sleep latency showed a tendency to shorten and REM activity, REM intensity and REM density showed a tendency to increase in some patients. On the other hand, there were 2 characteristics of the polysomnogram in schizophrenics. Firstly, the

variation of variables, especially the variables of REM sleep was larger among the schizophrenic patients; secondly, insertion of REM sleep during awakening stage was found in 10 patients, the number of insertion is 1~4 and the time is 0.8~20.6 minutes. The results showed that REM sleep of schizophrenics had a tendency to escape from normal control. This tendency may concern with hyperactivity of dopaminergic neurons in central nervous system. Thus, "the insertion of REM sleep" may represent a biological characteristic of some paranoid schizophrenic patients and is significant for clinical diagnosis and aetiological research of schizophrenia. Moreover, the variation of sleep variables among the patients may support the hypothesis on the biological heterogeneity of schizophrenia.

Key Words Schizophrenia Polysomnogram
REM sleep
(Original article on page 221)

Clinical analysis of 104 cases with heroin dependence in Guangzhou. *Pang Tianjian. Guangzhou Psychiatric Hospital. Guangzhou. 510370*

One hundred and four heroin addicts (97 males, 7 females) in Guangzhou were first admitted to our department for detoxification. The mean age was 27.6 ± 4.5 years. 84.6% of them were owners of individual enterprise. The duration of heroin taking was less than 3 years in 89.4% of the cases. Before being in hospital 68 addicts took heroin by smoking (in cigarettes) or "chasing dragon," while the others (36) by intravenous or intramuscular injections. The withdrawal symptoms subsided after various medication and the duration of staying in hospital averaged 7.7 ± 3.3 days. Many of the cases readdicted in short time after discharging from hospital. Long-term rehabilitation and aftercare were imperative in order to prevent them from readdicting.

Key Words Heroin Dependence Addict
Withdrawal symptom Detoxification
(Original article on page 225)