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血 UA 水平与急性脑梗死患者颈动脉斑块及梗死分型的关系

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摘要 目的:探讨血尿酸(UA)水平与急性脑梗死(ACI)患者颈动脉斑块及梗死分型的关系。**方法:**选择 2013 年 11 月~2016 年 5 月本院收治的 ACI 患者 200 例,依据牛津郡社区卒中研究分型(OCSP)标准将患者分为完全前循环梗死(TACI)组,部分前循环梗死(PACI)组、后循环梗死(POCI)组和腔隙性梗死(LACI)组;依据斑块性质将所有患者分为无斑块组、稳定斑块组和不稳定斑块组,分析不同梗死分型和斑块性质患者血 UA 水平差异。**结果:**TACI 组与 PACI 组、POCI 组与 LACI 组组间 UA 水平比较差异无统计学意义($P>0.05$),而 TACI 组和 PACI 组均高于 POCI 组和 LACI 组,差异有统计学意义($P<0.05$);UA 水平与 OCSP 分型存在相关性($r=0.237, P=0.001$);无斑块组 UA 水平与稳定斑块组的差异无统计学意义($P>0.05$);不稳定斑块组 UA 水平显著高于无斑块组和稳定斑块组,差异有统计学意义($P<0.05$),UA 水平与不同斑块性质分型存在相关性($r=0.356, P=0.000$);ACI 患者总体 OCSP 分型和斑块性质存在相关性($r=0.334, P=0.000$)。**结论:**血 UA 水平与 ACI 患者颈动脉斑块及梗死分型存在相关性,应重视 ACI 患者 UA 水平的检测,以预防脑梗死。

关键词:急性脑梗死;血尿酸;脑梗死分型;颈动脉斑块

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Relation of Blood Uric Acid Levels with Cerebral Infarction and Plaque Type of Acute Cerebral Infarction Patients

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ABSTRACT Objective: To explore the relation of blood uric acid levels with cerebral infarction and plaque type of acute cerebral infarction (ACI) patients. **Methods:** 200 ACI patients admitted to our hospital from November 2012 to May 2016 were selected, All patients were divided into total anterior circulation infarction group(TACI), partial anterior circulation infarction(PACI) group, posterior circulation infarction(POCI) group and lacunar infarction(LACI) group according to Oxfordshire community stroke project (OCSP) classification criteria;And all patients were divided into no plaque group, stable plaque group and unstable plaque group according to plaque type, the relation of blood uric acid levels with cerebral infarction and plaque type were analyzed. **Results:** The difference of UA level between TACI group and PACI group, POCI group and LACI group were both not statistically significant ($P>0.05$). The UA level of TACI group and PACI group were higher than those of POCI group and LACI group ($P<0.05$). UA levels and OCSP classification of ACI patients was correlated ($r=0.237, P=0.001$). The difference of UA level between no plaque group and stable plaque group was not statistically significant ($P>0.05$). UA level of unstable plaque group was significantly higher than those in no plaque group and stable plaque group, the difference was statistically significant ($P<0.05$). Plaque type and OCSP classification was correlated ($r=0.356, P=0.000$). OCSP classification and plaque type were correlated ($r=0.334, P=0.000$). **Conclusion:** Blood UA levels and cerebral infarction and plaque type of ACI patients were correlated, attentions should be paid to UA levels of ACI patients to preventive cerebral infarction.

Key words: Acute cerebral infarction; Uric acid; Infarction classification; Carotid artery plaque

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前言

急性脑梗死(Acute cerebral infarction, ACI)是指脑血供障碍引起的急性病变,包括脑血栓形成、脑栓塞和腔隙性梗死等^[1]。ACI 患者治疗后多伴有肢体活动受限、面瘫、梗死后遗症等并

发病,成为患者预后不良的重要病因。因此,早期发现血清特异性生物标记物,对于患者诊断和预后评估具有重要意义^[2]。尿酸(Uric acid, UA)作为体内嘌呤代谢的终产物,与多种疾病的发生与发展密切相关,如肥胖、2 型糖尿病、脂代谢异常及高血压等。但与 ACI 患者预后的关系尚不明确^[3]。颈动脉粥样硬化不仅可以是形成急性脑梗死的重要病因之一,而且可以反映全身的动脉粥样硬化程度^[4]。有研究指出,依据 ACI 的病因分型给予针对性的治疗,对于降低患者复发、改善预后积极意义^[5]。

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因此,本研究通过探讨血 UA 水平与 ACI 患者颈动脉斑块及梗死分型的关系,为相关研究提供依据。

1 资料与方法

1.1 一般资料

选择 2013 年 11 月~2016 年 5 月本院收治的 200 例 ACI 患者,作为研究对象,所有患者均为首次发病;诊断标准参考《各类脑血管疾病诊断要点》^[6]中关于 ACI 的相关记录,且经过脑部 CT 确诊。并排除合并脑出血、急性心梗、恶性肿瘤以及其他血液系统、免疫系统疾病患者。其中男 130 例,女 70 例;年龄 43~81 岁,平均(63.30±11.07)岁;病程 2 h~3 d,平均(19.04±5.26)h;本研究所有的研究过程经我院医学伦理委员会批准,征得患者及其家属的同意,并签署知情同意书。

1.2 研究方法

依据牛津郡社区卒中研究分型(OCSP)标准将所有病例分为 4 组:完全前循环梗死组(TACI)39 例,部分前循环梗死组(PACI)53 例、后循环梗死组(POCI)62 例和腔隙性梗死组(LACI)46 例。同时,依据斑块性质将所有患者分为 3 组:无斑块组 81 例、稳定斑块组 56 组和不稳定斑块组 63 例。

1.2.1 OCSF 分型标准 ① TACI:存在空间定向力障碍、意识障碍等高级神经功能障碍,上肢、下肢、对侧面至少两个存在运动或感觉功能障碍,同向性偏盲。② PACI:存在两种以上上述特征,或感觉运动缺损较 TACI 局限,或有高级神经功能障碍。③ POCI:存在交叉性损害,双眼协同运动障碍,双侧运动感觉障碍。④ LACI:包括单纯运动性轻偏瘫、单纯感觉性脑卒中、运动感觉性脑卒中、构音障碍等^[7]。

1.2.2 根据颈动脉斑块性质分组 对所有患者的颈动脉进行彩色多普勒超声检查,观察其颈动脉斑块情况,扫描方向为沿着颈动脉至锁骨内侧,从上至下分别对颈总动脉、颈总动脉分叉处和颈内动脉的纵切面和横切面连续扫查。根据超声检查结果,将回声正常病例纳入无斑块组,将低回声、混合回声斑块为主的病例纳入不稳定斑块组,稳定斑块组患者包括中等回声及强回声斑块。

1.2.3 UA 水平检测 所有患者于入院次日清晨空腹抽取肘静脉血 5 mL,并采用全自动生化分析仪检测血液中的 UA 水平。

1.3 统计学分析

采用 SPSS16.0 进行统计学分析。计数资料采用百分比(%)表示,计量资料采用均数±标准差($\bar{x} \pm s$)表示,多组间差异性比较采用方差分析,两组间比较采用 t 检验;采用 Pearson

相关分析法进行相关性分析。以 $P < 0.05$ 为差异与统计学意义。

2 结果

2.1 不同 OCSF 分型患者 UA 水平比较

不同 OCSF 分型组 UA 水平的总体差异有统计学意义($F=4.567, P=0.004$)。TACI 组和 PACI 组的 UA 水平均高于 POCI 组和 LACI 组(均 $P < 0.05$),而 TACI 组与 PACI 组、POCI 组与 LACI 组组间比较差异无统计学意义($P > 0.05$);ACI 患者的 UA 水平与 OCSF 分型存在显著的正相关($r=0.237, P=0.001$)。见表 1。

表 1 不同 OCSF 分型组 UA 水平比较

Table 1 Comparison of UA levels in different OCSF type groups

OCSF type	n	UA($\mu\text{mol/L}$)
TACI group	39	426.34±129.1*
PACI group	53	409.96±151.71*
POCI group	62	356.48±100.64
LACI group	46	356.21±73.48

NOET: compared with POCI group and LACI group, * $P < 0.05$.

2.2 不同斑块性质组 UA 水平比较

不同斑块性质组 UA 水平的整体差异有统计学意义($F=17.289, P=0.000$)。无斑块组 UA 水平与稳定斑块组的差异无统计学意义($P > 0.05$)。不稳定斑块组 UA 水平显著高于无斑块组合稳定斑块组,且差异均具有统计学意义(均 $P < 0.05$)。相关性分析中,ACI 患者的 UA 水平与不同斑块性质分型存在显著性正相关($r=0.356, P=0.000$)。见表 2。

表 2 不同斑块性质组 UA 水平比较

Table 2 Comparison of UA levels in different plaque type groups

Plaque type	n	UA($\mu\text{mol/L}$)
No plaque group	81	352.76±105.35*
Stable plaque group	56	363.89±84.28*
Unstable plaque group	63	449.45±115.87

Note: Compared with Unstable plaque group, * $P < 0.05$.

2.3 OCSF 分型与斑块性质相关性分析

TACI 组、PACI 组中无颈动脉斑块的患者和稳定性斑块的患者所占比例均低于 POCI 组、LACI 组(均 $P < 0.05$)。ACI 患者总体 OCSF 分型和斑块性质存在显著的正相关($r=0.334, P=0.000$)。

表 3 OCSF 分型与斑块性质相关性分析[n(%)]

Table 3 Correlation analysis of OCSF type and plaque type[n(%)]

Groups	n	No plaque group	No plaque group	Unstable plaque group
TACI	39	11(28.21)	8(20.51)	20(51.28)
PACI	53	21(39.62)	14(26.42)	18(33.96)
POCI	62	25(40.32)	19(30.65)	18(29.03)
LACI	46	24(52.17)	15(32.61)	7(15.22)

3 讨论

ACI 是常见的临床疾病之一,具有发病率高、病死率高的特点,患者若得不到及时妥善的治疗,会危及生命。颈动脉粥样

硬化斑块多形成于颈总动脉分叉处,同时可以在颈内、颈外动脉起始段形成^[8]。1991年,英国学者 Bamford 等人在脑卒中群体研究中提出 OSCP 分型^[9],通过对脑血管疾病引起最大功能缺损的临床症状为依据,对 ACI 进行分型。该分型方法操作简单,不需要通过辅助检查结果分析,同时可以在影像学检查中未发现病灶时对 ACI 患者进行准确分型,并对病灶的部位和大小具有提示作用,具有显著的临床信度和效度,已在临床广泛应用。

UA 是嘌呤代谢的最终产物,作为水溶性抗氧化剂,UA 能够清除氧自由基和过氧化氢,阻断硝基酪氨酸生成,在帕金森病中具有保护作用^[10,11]。但 UA 在血液中不易溶解,当血 UA 含量过高时,可引起高 UA 血症,促进血小板黏附和聚集、脂质过氧化、参与炎症反应,促进血栓形成和动脉粥样硬化^[12]。UA 通过氧化作用提高动脉粥样硬化发生的机率,增加机体的抗氧化能力,导致血 UA 进一步提高。在分解结晶的过程中,造成血管损伤^[13]。血 UA 作用于 ACI 的具体机制尚不明确,可能为:①直接激活血小板,致使血小板释放三磷酸腺苷和 5-羟色胺等物质,加速活化血小板。②影响嘌呤的代谢进程,改变机体的凝血和纤溶功能,加速形成血栓。③UA 结晶析出后在血管壁上沉积,对血管内膜造成损伤,加重动脉硬化程度。④随着 UA 水平的升高,氧自由基大量生成诱发炎症反应,促进动脉粥样硬化进程^[14,15]。有研究发现高血 UA 水平是脑梗死患者预后不良的独立危险因素,预示着更高的心脑血管事件的发生风险^[16]。Van 等^[17]研究表明脑梗死患者血 UA 水平与颈动脉狭窄数目和程度有关。Klotz^[18]等研究显示,血 UA 水平是急性卒中患者不良预后的独立危险因素,且能预测将来的心脑血管事件。

本研究结果显示,而 TACI 组与 PACI 组、POCI 组与 LACI 组患者之间的差异无统计学意义($P>0.05$),但是与 POCI 组和 LACI 组相比,TACI 组和 PACI 组的 UA 水平均明显升高,ACI 患者的 UA 水平与 OSCP 分型呈现显著正相关,提示 UA 水平在一定程度上可以对 ACI 患者进行诊断和预测,与相关研究结果一致^[19]。无斑块组 UA 水平与稳定斑块组的差异无统计学意义。不稳定斑块组 UA 水平显著高于无斑块组合稳定斑块组,差异有统计学意义。随着 ACI 患者的 UA 水平的升高,斑块的性质从稳定发展到不稳定,提示 UA 水平越高,不稳定斑块风险越高。可能是因为稳定斑块血管内胶原含量丰富,脂质核心较小,纤维帽厚,炎症轻。不稳定斑块纤维帽较薄,斑块较易脱落,引起动脉血栓,血栓反复脱落形成多个栓子,容易导致血管栓塞,进而出现大面积的脑梗死^[20]。因此,应重视 ACI 患者 UA 水平的检测,积极预防脑梗死。

综上所述,血 UA 水平与 ACI 患者颈动脉斑块及梗死分型存在相关性,应重视 ACI 患者 UA 水平的检测,以预防脑梗死。

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