

血清尿素氮水平与上消化道出血关系的研究*

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摘要:目的 探讨上消化道疾病患者血液中尿素氮(BUN)水平高低与上消化道出血的关系。方法 选择2012年1月~2015年1月上消化道疾病的116例患者为研究对象,根据血液中尿素氮水平将患者分成高BUN组和低BUN组,其中高BUN组患者76例,低BUN组患者40例,比较两组患者生化指标,并进行单因素logistic回归分析,并比较两组患者的消化道出血forrest分级与疾病严重程度的情况。结果 高BUN组患者血清白细胞计数、尿素氮、肌酐以及糖化血红蛋白水平 $[(9\ 593\pm 5\ 012)\times 10^2/\mu\text{L}, 368.1\pm 162.3\text{ mg/L}, 11.2\pm 3.7\text{ mg/L}$ 和 $6.38\%\pm 1.08\%]$ 显著高于低BUN组患者 $[(6\ 804\pm 2\ 087)\times 10^2/\mu\text{L}, 121.0\pm 39.3\text{ mg/L}, 8.1\pm 3.2\text{ mg/L}$ 和 $5.51\%\pm 0.42\%]$; $t=3.645\sim 12.659$, P 均 <0.05],高BUN组患者血红蛋白水平 $(87.3\pm 35.1\text{ g/L})$ 显著低于低BUN组患者 $(108.0\pm 31.2\text{ g/L})$; $t=3.252$, $P=0.032$]; logistic回归分析显示两组患者血红蛋白及糖化血红蛋白水平存在显著差异($P<0.05$),表明血红蛋白及糖化血红蛋白与BUN相关性最大;两组患者消化道出血forrest分级数据比较差异无统计学意义($P>0.05$);高BUN组患者胃溃疡比例显著高于低BUN组患者($\chi^2=39.655$, $P=0.000$)。结论 血清尿素氮高表达的患者上消化道出血更为严重,值得临床诊断过程中加以关注。

关键词: 血尿素氮; 血红蛋白; 白细胞计数; 上消化道出血

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Research on Relationship of Serum Urea Nitrogen Level and Upper Gastrointestinal Bleeding

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Abstract: **Objective** To examine characteristics of patients with blood urea nitrogen (BUN) levels higher and lower than the normal limit. **Methods** During January 2012 to January 2015, 116 patients with upper gastrointestinal diseases were selected to study, according to the patient's blood urea nitrogen level, all the patients were divided into high BUN group and low BUN group, and there were 76 patients in the high BUN group, and 40 patients in low BUN group, compared the biochemical indices, gastrointestinal bleeding forrest grading and disease severity of the two groups, and univariate logistic regression analysis. **Results** The serum white blood cell count, blood urea nitrogen, creatinine and glycosylated hemoglobin levels in patients of high BUN group $[(9\ 593\pm 5\ 012)\times 10^2/\mu\text{L}, 368.1\pm 162.3\text{ mg/L}, 11.2\pm 3.7\text{ mg/L}$ and $6.38\%\pm 1.08\%]$ were significantly higher than that of low BUN patients $[(6\ 804\pm 2\ 087)\times 10^2/\mu\text{L}, 121.0\pm 39.3\text{ mg/L}, 8.1\pm 3.2\text{ mg/L}$ and $5.51\%\pm 0.42\%]$ ($t=3.645\sim 12.659$, all $P<0.05$), and the hemoglobin levels $(87.3\pm 35.1\text{ g/L})$ of the patients in high BUN group was significantly lower than that of the low BUN patients $(108.0\pm 31.2\text{ g/L})$ ($t=3.252$, $P=0.032$). Logistic regression analysis showed the presence of hemoglobin and glycosylated hemoglobin levelst of wo groups of patients was significantly different ($P<0.05$), and showed that showed the highest correlation with BUN. Gastrointestinal bleeding forrest hierarchical data of the two groups of patients showed no significant difference ($P>0.05$). The proportion of patients with gastric ulcers of high BUN patients was significantly higher than that of the low BUN patients ($\chi^2=39.655$, $P=0.000$). **Conclusion** Patients with high expression of serum urea nitrogen had more severe upper gastrointestinal bleeding, and it is worthy of attention in the process of clinical diagnostic.

Keywords: blood urea nitrogen; hemoglobin; leukocyte count; upper gastrointestinal bleeding

上消化道出血是指发生在近端 Treitz 韧带部 疡、十二指肠溃疡以及胃癌,上消化道出血的死亡 位的出血,导致上消化道出血的原因主要包括胃溃 率约为 5%^[1,2]。上消化道出血可通过内窥镜检查

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来确诊,临床上常用双电极凝血发来治疗上消化道出血,但有一部分患者治疗效果不佳,因其不稳定的血流动力学,可导致该部分约40%的患者死亡^[3]。出血位置的判断对于临床的治疗非常重要,因此,早期内窥镜检查,并给予准确诊断,是降低死亡率的关键^[4]。而血液检查相比于内窥镜检查具有成本低、风险小的优点。尿素氮是蛋白质代谢的终端产物,急性上消化道出血常伴有血清尿素氮水平变化^[5]。为了探讨上消化道疾病患者血液中尿素氮水平高低与上消化道出血关系,我院在2012年1月~2015年1月期间对收治的116例上消化道出血患者进行研究,现将相关内容报道如下。

1 材料和方法

1.1 研究对象 选择2012年1月~2015年1月在我院就诊并确诊为上消化道疾病的116例患者为研究对象,所有患者经诊断确诊为上消化道出血,根据血液中尿素氮水平将患者分成高BUN组(≥ 21.0 mg/dl)和低BUN组(< 21.0 mg/dl),将患者的上消化道出血进行Forrest分级,Ⅰa:食管粘膜内镜下表现喷射性;Ⅰb:溃疡底部或周边渗血;Ⅱa:溃疡底血管显露,无活动出血;Ⅱb:溃疡覆盖血凝块,无活动出血。其中高BUN组患者76例,年龄50~76岁,平均年龄 63.4 ± 7.3 岁,Forrest分级为Ⅰa 2例,Ⅰb 23例,Ⅱa 34例,Ⅱb 17例;低BUN组患者40例,年龄53~78岁,平均年龄 62.7 ± 7.8 岁,Forrest分级为Ⅰa 1例,Ⅰb 10例,Ⅱa 20例,Ⅱb 9例。本研究经医院伦理委员会讨论后通过,所有参与研究的患者均在术前告知其详细的治疗方案,并得到了患者及家属的同意,签署知情同意书。

1.2 研究方法 所有患者均接受上消化道内镜筛查,检查腹部症状以及出血情况。所使用的内窥镜设备为日本奥林巴斯公司生产,型号为GIFN260H。

空腹抽取患者静脉血15 ml,处理后分析相关生化指标,包括白细胞计数(WBC),血红蛋白(Hb),C-反应蛋白(CRP),血小板(Plt),总蛋白(TP),清蛋白(Alb),总胆红素(TBil),碱性磷酸酶(ALP),尿酸(UA),尿素氮(BUN),肌酐(CRE),血糖(BG)和糖化血红蛋白(HbA1c)。

1.3 统计学分析 所有数据均采用SPSS19.0进行统计分析。采用 χ^2 检验分析两组间的生化指标数据差异以及血中尿素氮水平与消化道出血forrest分级和消化道溃疡或癌变的相关性,采用Logistic回归分析两组相关生化指标的相关性,以 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两组患者相关生化指标比较 高BUN组患者血清白细胞计数、尿素氮、肌酐以及糖化血红蛋白水平显著高于低BUN组患者,差异均具有统计学意义($P < 0.05$);高BUN组患者血红蛋白水平则显著低于低BUN组患者,差异有统计学意义($P < 0.05$),详见表1。

表1 两组患者相关生化指标比较

项 目	高BUN组 (n=76)	低BUN组 (n=40)	t	P
年龄(岁)	63.4±7.3	62.7±7.8	0.469	0.742
WBC($\times 10^3/\mu\text{l}$)	9.593±5.012	6.804±2.087	4.218	0.005
Hb(g/L)	87.3±35.1	108.0±31.2	3.252	0.032
CRP(mg/L)	16.3±21.3	10.9±8.4	1.136	0.152
Plt($\times 10^4/\mu\text{l}$)	23.5±8.6	28.4±11.8	1.867	0.072
TP(g/L)	57.4±9.1	61.1±7.1	1.769	0.098
Alb(g/L)	33.4±0.7.1	35.4±6.1	0.869	0.332
TBil(mg/L)	6.4±4.2	7.2±6.1	0.567	0.621
ALP(IU/L)	179±51	254±131	1.112	0.142
UA(mg/L)	57.8±13.7	52.3±15.3	0.875	0.386
BUN(mg/L)	368.1±162.3	121.0±39.31	2.659	0.000
Cre(mg/L)	11.2±3.7	8.1±3.2	9.754	0.009
BG(mg/L)	1.612±390	1.273±350	1.867	0.072
HbA1c(%)	6.38±1.08	5.51±0.42	3.645	0.021

2.2 两组患者相关生化指标 logistic 回归分析

logistic回归分析显示两组患者血红蛋白及糖化血红蛋白水平存在显著差异,表明这两项指标与BUN相关性最大,数据比较差异有统计学意义($P < 0.05$),见表2。

表2 两组患者相关生化指标 logistic 回归分析

变量	χ^2	OR(95%CI)	P
WBC	0.112	0.992(0.867~1.267)	0.742
Hb	6.223	0.562(0.348~0.867)	0.016
CRE	3.334	478.322(235.6~746.3)	0.073
HbA1c	4.785	13.782(9.564~17.649)	0.028

2.3 两组患者消化道出血 forrest 分级比较 两组患者消化道出血 forrest 分级数据比较差异无统计学意义($P > 0.05$),见表3。

表3 两组患者消化道出血 forrest 分级比较

分级	高BUN组(n=76)	低BUN组(n=40)	χ^2	P
Ⅰa	2	1	0.413	0.937
Ⅰb	23	10		
Ⅱa	34	20		
Ⅱb	17	9		

2.4 两组患者消化道溃疡或癌变情况比较 高BUN组76例患者中57例患者患有胃溃疡、1例患者为癌,低BUN组40例患者中13例患者为胃溃疡,19例患者为癌。高BUN组患者胃溃疡比例显著高于低BUN组患者,数据比较差异有统计学意义($\chi^2=39.655, P=0.000$)。

3 讨论 尿素氮是人体蛋白质代谢的主要终端产物。尿素氮在肝脏产生,经循环,通过肾脏排泄到尿液中,尿素氮的浓度可反映人体蛋白摄入量、蛋白质代谢机能以及肾功能等生理反应^[6]。当患者出现上消化道出血时,血液进入肠道,血液中的蛋白经蛋白酶水解,分解成氨基酸,然后经还原性脱氨基作用生成氨,循环进入血液,合成尿素,引起血液中的尿素氮水平升高^[7]。而下消化道出血后进入肠道的血液较少,血液中蛋白质的分解产物较少经过肠道吸收过程^[8]。此外,血清尿素氮有随年龄变化的趋势^[9],本研究为排除该影响因素,对两组患者的年龄进行统计分析,以排除干扰。

高水平的血液尿素氮与上消化道出血密切相关,相关研究认为低血红蛋白水平与上消化道的出血严重程度相关联^[10],因此,可以推测高水平的血液尿素氮伴随着低血红蛋白水平,但没有直接证据。本研究结果显示,高BUN组患者血红蛋白水平显著低于低BUN组患者($P<0.05$),logistic回归分析也表明,较高BUN水平和较低的血红蛋白之间的相关性最强,表明高BUN组患者的出血比低BUN组患者更为严重,上消化道出血产生的大量血红蛋白是血液中高水平BUN的来源。

本研究发现高BUN组患者血清白细胞计数、尿素氮、肌酐以及糖化血红蛋白水平显著高于低BUN组患者。导致白细胞数量急剧上升的主要原因是炎症,胃溃疡是一种类似于炎性肠病的炎症,可导致白细胞上升^[11]。有研究表明,高水平的WBC与上消化道出血的严重程度以及死亡率密切相关^[12]。当患者的WBC $>12\ 000/\mu\text{l}$ 时,急需上消化道检查治疗^[13]。此外,有学者认为尿素氮与肌酐的比值也是用于诊断上消化道出血的有效方法,但存在相反意见^[14]。本研究是以医院为基础的病例研究,收集的病例来源单一,且病例数仅为116例,具有一定的局限性,后续研究还需进一步扩大样本量以及样本来源。

综上所述,血清尿素氮高表达的患者($\geq 21\text{ mg/dl}$)上消化道出血更为严重,值得临床诊断过程中加以关注。

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理生理信号的综合反映,主要由心肌、机械和神经刺激分泌而来^[7],有研究表明心力衰竭患者的BNP水平升高,并且NT-proBNP比BNP升高更为显著,能对心衰的早期诊断及预后提供有价值的信息^[8]。而心脏功能与急性脑梗死有密切的关系,心房颤动、高血压等诸多急性脑梗死常见的危险因素均可以导致心功能改变。本研究发现实验组患者治疗前NT-proBNP的水平明显高于对照组和治疗后,因此,NT-proBNP可以作为急性脑梗死发生发展及预后的判断指标。凝血和纤溶是反映血栓性疾病的两种病理生理过程。凝血指标主要有APTT,INR,纤溶指标主要有PAI-1,t-PA。本研究发现实验组患者治疗前APTT明显短于对照组和治疗后,而PAI-1,t-PA的水平明显高于对照组和治疗后,与人的健康状态呈现出负相关的联系。因此凝血纤溶指标可以作为急性脑梗死的辅助指标。

综上所述,B型脑钠肽、同型半胱氨酸及凝血纤溶指标与急性脑梗死的发生发展有着密切的联系,通过对各项检测指标进行分析研究,有助于为临床提供科学准确的诊断及治疗的依据。

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