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PTH、BUN 及 CRe 联合检测对早期肾功能衰竭的诊断价值*

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摘要 目的:探讨甲状旁腺激素、尿素氮及肌酐联合检测在肾功能衰竭患者早期诊断中的临床意义。**方法:**选取 2012 年 1 月-2013 年 8 月在我院接受治疗的 80 例肾功能衰竭患者作为研究对象,另选同期体检正常人 40 例为对照组,选用我院全自动化学分析仪器及电化学发光免疫分析测量仪器检测患者血清中甲状旁腺激素、尿素氮及肌酐水平。**结果:**与对照组患者比较,观察组患者血清样本中甲状旁腺激素水平、尿素氮水平与肌酐水平呈显著增高趋势,有统计学意义($P < 0.05$)。肾功能衰竭患者在其代偿期血清内三项水平呈显著增高趋势,而在氮质血症期间,血清内三项要素水平升高现象更为显著,而在尿毒症期间,对比氮质血症期间同样有其上升的表现,突出表现为显著的增高态势。**结论:**在临床诊断中,可将血清样本中甲状旁腺激素水平作为判定其肾功能衰竭严重程度的关键指标。

关键词:早期诊断;肾功能衰竭;尿素氮;甲状旁腺激素;肌酐

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Clinical Significance of Joint Detection of Parathyroid Hormone Urea Nitrogen, Creatinine in the Diagnosis of Early Renal Failure*

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ABSTRACT Objective: To study the clinical significance and correlation of joint detection of parathyroid hormone, urea nitrogen and creatinine in the diagnosis of early renal failure patients. **Methods:** 80 patients with renal failure from January 2012 to August 2013 in our hospital were selected as the research object. Using the automatic chemical analysis instrument and the electrochemical luminescence immunoassay measuring instrument, the level of parathyroid hormone in serum, urea nitrogen and creatinine was detected. **Results:** Compared with the control group patients, the levels of parathyroid hormone, urea nitrogen and creatinine in serum samples significantly increased in observation group with obvious statistical significance($P < 0.05$). In the compensatory phase of renal failure, the three levels in serum significantly increased, and during the period of azotemia, the elevated levels were more pronounced, and during the period of uremia, the level of parathyroid hormone, urea nitrogen and creatinine also had a significant rise in comparison to the period of azotemia. **Conclusion:** In clinical diagnosis, the serum level of parathyroid hormone can be a key indicator of the severity of renal failure.

Key words: Early diagnosis; Renal failure; Urea nitrogen; Parathyroid hormone; Creatinine

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前言

一般来说,肾功能衰竭患者的一个较为显著的特征是其往往会出现不同程度的肾性营养不良症状^[1-3]。通常而言,肾功能衰竭患者身体缺乏 25- 二羟基维生素 D₃,致使其体内磷、钙等元素代谢较为混乱,进而引发患者出现继发性的甲状旁腺功能亢进现象^[4-6]。同时也有报道显示,在肾功能衰竭患者的早期诊断中,甲状旁腺激素水平的测量的重要性十分突出^[7]。基于此,

为探讨针对肾功能衰竭患者的早期有效诊断方案,我院对 80 例肾衰竭患者血清中尿素氮、肌酐、甲状旁腺激素水平进行了检测分析,现整理报道如下。

1 资料与方法

1.1 一般资料

选择我院于 2012 年 1 月-2013 年 8 月共收治肾功能衰竭患者 80 例作为研究对象,其中男 42,女 28 例;年龄 38-67 岁,

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平均(49.3± 9.1)岁;严格按照最新内科学诊断标准,将 80 例肾功能患者进行肾功能不全分期,随后整理处于不同期患者的检验标本。同时选择 40 例健康者作为对照组,其中男 18 例,女 21 例;年龄 39-66 岁,平均(48.9± 8.9)岁,所有纳入研究的正常人其尿液及肝肾功能检测均显示为正常、健康。

1.2 检测方法

对于纳入研究的所有患者均在其入院后,择早晨,叮嘱患者空腹,抽取其静脉血液,对每位患者的血液样本做好标记,加入离心仪器中分离器血清与血浆,并选用全自动生化分析仪配合电化学发光免疫仪器,检测患者血液样本中的甲状旁腺激素水、尿素氮及肌酐水平。同时保持在同样的条件下,测量正常健康的 40 例对照组血液样本中的三项水平,进行对比观察。

表 1 观察组与对照组血清中甲状旁腺激素、尿素氮、肌酐水平比较($\bar{x} \pm s$)

Table 1 Comparison of levels of PTH, BUN and Cre in serum of patients between two groups($\bar{x} \pm s$)

Group	Case	PTH(pg/mL)	Cre(μ mol/L)	BUN(mmol/L)
Control group	40	49.7± 15.8	81.2± 25.3	4.9± 1.5
Observation group	80	599.2± 71.1	1127.1± 118.2	26.5± 2.3
t	-	-48.19	-55.26	-53.88
P	-	<0.05	<0.05	<0.05

2.2 不同分期肾功能衰竭患者血清 PTH, BUN 和 Cre 水平比较

结果显示,肾功能衰竭患者在其代偿期血清内三项水平呈显著增高趋势,而在氮质血症期间,血清内三项要素水平升高

1.3 统计学方法

采用软件 SPSS19.0 对数据进行分析处理,计量资料采取($\bar{x} \pm s$)表示,组间数据对比采用 t 检验;计数资料采取率(%)表示,组间率对比采取 χ^2 检验,以 $P < 0.05$ 为有显著性差异和统计学意义。

2 结果

2.1 两组患者血清中各项指标水平的比较

相较对照组患者而言,观察组患者血清样本中甲状旁腺激素(PTH)、尿素氮(BUN)与肌酐(Cre)水平呈显著增高趋势, $P < 0.05$,有其明显的统计学意义,如表 1 所示。

现象更为显著,而在尿毒症期间,对比氮质血症期间同样有其上升的表现,突出表现为显著的增高态势($P < 0.05$)。见表 2。

表 2 不同分期患者血液样本中三项要素水平变化比较($\bar{x} \pm s$)

Table 2 Comparison of levels of PTH, BUN and Cre in serum of patients with different pathological stages($\bar{x} \pm s$)

Group	Case	PTH(pg/mL)	Cre(μ mol/L)	BUN(mmol/L)
Renal compensatory	16	276.7± 62.1	581.1± 145.9	15.3± 5.7
Azotemia	23	393.1± 85.9	777.1± 139.2	19.9± 3.5
uremia	41	609.2± 157.3	990.5± 183.4	25.5± 4.9
*t,P	-	-4.64, < 0.05	-4.24, < 0.05	-3.12, < 0.05
Δ t,P	-	-6.09, < 0.05	-4.85, < 0.05	-4.83, < 0.05

注:*表示代偿期与氮质血症期对比; Δ 表示氮质血症期与尿毒症期对比。

Note:* Means comparison of renal compensatory with Azotemia; Δ Means comparison of Azotemia with uremia.

3 讨论

通常来说,任何能够导致人体肾实质受到毁损的有其原发或继发特征的肾脏疾病,最后均有极大的可能演变为肾功能衰竭,导致患者的肾脏器官并不能正常维持其各项基本性的功能^[8-11],包括调节水电解质平衡、保持体内酸碱度均衡及新陈代谢的正常性等,进而造成患者出现多样化的临床症状,降低其生活质量^[12,13]。

人体血清内甲状旁腺激素包含超过 80 个氨基酸残基,其相对分子量十分庞大,甲状旁腺激素的生物活性是由其氨基端

首位到 27 位氨基酸残基所决定的,它在人体内主要起到保持血液及钙质的均衡、稳定状态,能够有效提升人体的血钙水平,同时降低其血磷水平^[14-16]。甲状旁腺激素承担了人体血运中重要的代谢及分解功能,其所造成的新陈代谢紊乱同样可导致肾脏排泄异常、血液浓度升高,致使人体甲状旁腺激素亢奋,对人体心血管系统均有关键的影响^[17]。还有研究显示,血清内高甲状旁腺激素水平与患者的病死率有着直观的联系,已发展为影响肾功能衰竭患者生活质量与生命安全的重要指标,显示患者体内重要毒素水平的核心标准,同时能够导致患者临床症状的变化,改变其病理机制^[18]。而尿素氮则是蛋白质代谢的重要产

物,而肾脏作为排泄的重要部位,当尿素排除时,若肾小球过滤出现异常,会导致人体肾脏功能出现毁损。此外,肌酐则是肌肉代谢的一个关键产物,与人的肌肉量有其紧密的联系,同样可通过人体肾小球滤过,而当患者肾脏功能受损时,肌酐将会长时间在体内聚集,进而形成对人体健康造成威胁的毒素。

本研究结果显示,观察组患者血清 PTH、BUN、Cre 均显著性高于健康人群,且随疾病病程的发展,上述三项检测结果还进一步变现出逐渐增长的趋势,氮质血症期患者数据显著性高于代偿期患者,同时尿毒症期患者数据又显著性高于氮质血症期患者。此结果与国外多项研究结果类似^[19,20],提示此类现象存在一定的普遍适应性,值得临床关注。

综上所述,针对肾功能衰竭患者的早期诊断与治疗,应选择血清三项联合诊断的方式,遵循降低血清内甲状腺激素水平的原则,均衡患者体内甲状腺激素水平,保持代谢平衡。

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