

尿蛋白定性与 ICU 危重患者预后的相关性研究

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摘要 目的 探讨尿蛋白定性结果在 ICU 危重患者病情和预后的预测价值。方法 对 2008 年 1 月~2011 年 5 月我院 ICU 收治的 190 例患者,按照尿蛋白定性分为尿蛋白阴性组和尿蛋白定性阳性组,分别比较两组患者的肾功能不全、多器官功能衰竭、病死率及 APACHE II 评分,并进一步分析尿蛋白含量与上述指标的关系。结果 190 例患者尿蛋白定性为阳性的为 124 例患者,阴性的 66 例患者,经过比较发现 ARF 发生率、MODS 发生率、病死率、APACHE II 评分,阳性组患者均明显高于阴性组患者,差异有显著的统计学意义($P<0.01$);并且经过比较发现 ARF 发生率、MODS 发生率、病死率、APACHE II 评分不同组尿蛋白阳性组之间差异有显著的统计学意义($P<0.01$)。随着尿蛋白+的增加,ARF 发生率、MODS 发生率、病死率、APACHE II 评分逐渐增加。结论 尿蛋白定性能很好的预测 ICU 危重患者肾功能不全、多器官功能衰竭和死亡的发生,反应患者病情的严重程度。

关键词 尿蛋白定性;多器官功能衰竭;肾功能不全;危重症

中图分类号 R459.7 R446.12 文献标识码 A 文章编号 1673-6273(2012)04-693-03

The Research of Correlation between Qualitative Urine Protein and Prognosis of Critically Ill Patients in ICU

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ABSTRACT Objective: To investigate the prognostic value of qualitative results of urine protein for critically ill ICU patient's condition and prognosis. Methods: Retrospectively analysed 190 patients in ICU from January 2008 to May 2011, divided into protein urine protein-negative group and the positive group. Two groups were respectively compared renal insufficiency, multiple organ failure, mortality and APACHE II score, and further analysis of urine protein content and the relationship between these indicators. Results: 190 patients were defined as positive urine protein of 124 patients, 66 patients were negative, found that positive patients were significantly higher than negative patients in the incidence of ARF, MODS, mortality, APACHE II score, the difference were statistically significant ($P<0.01$). And by comparison found that the incidence of ARF, MODS incidence, mortality, APACHE II score of different groups of urinary protein were significantly different in the statistical significance ($P<0.01$), with the increase in urine protein +, ARF incidence and MODS incidence, mortality, APACHE II score increased gradually. Conclusion: Qualitative urinary protein is a good performance prediction in critically ill ICU patients with renal failure, multiple organ failure and mortality, response to the severity of the patient's condition.

Key words: Qualitative urinary protein; Multiple organ failure; Renal insufficiency; Critically ill patients

Chinese Library Classification(CLC): R459.7 R446.12 Document code: A

Article ID:1673-6273(2012)04-693-03

前言

重症监护病房(intensive care unit ICU)是医院内危重患者最多的科室,其中相当一部分 ICU 患者并发生多器官功能衰竭(Multiple Organ Dysfunction Syndrome MODS),并且 MODS 是这部分患者最主要的致死原因导致^[1-2],其中急性肾功能衰竭(acute renal failure ARF)是 MODS 最重要的组成部分之一,并且 ARF 是感染、创伤、休克的最为严重的后果,ARF 会对其他器官功能和内环境产生严重影响,并且当 MODS 并发 ARF 时,死亡率会进一步增高到 70%^[3-5]。因此寻找早期肾功能损害的诊断指标对降低 ICU 患者 ARF 及 MODS 有重要的临床价

值,为此本研究对 2008 年 1 月~2011 年 5 月我院 ICU 收治的 190 例患者进行尿蛋白定性研究,现报道如下:

1 对象与方法

1.1 研究对象

2008 年 1 月~2011 年 5 月我院 ICU 收治的 190 例患者,其中男性患者 138 例,女性患者 70 例,年龄 19 岁~79 岁,平均年龄 52.3 ± 23.6 岁,其中原发病情况:创伤 42 例,颅脑损伤 35 例,肠梗阻 28 例,消化道出血 29 例,慢性阻塞性肺部疾病 23 例,急性有机磷农药中毒 18 例,急性心肌梗死 15 例。所有入选对象均符合:尿隐血试验,尿胆红素,尿白细胞等阴性,尿 pH 值 3.0~8.0 左右。并且所有研究对象排除高血压,糖尿病,肾脏等病史及入 ICU 前一周及在 ICU 住院期间应用过肾毒性药物的患者。根据患者进入 ICU 后尿蛋白定性结果将 190 例患者分为两组:尿蛋白阳性组和阴性组。两组患者年龄、性别、基

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(收稿日期 2011-07-03 接受日期 2011-07-24)

础疾病,病情差异无明显的统计学意义 $P > 0.05$,具有可比性。

1.2 检验方法及诊断标准

①检验方法 血清肌酐、尿素氮定量测定使用日立 7600 全自动生化分析仪,试剂盒由北京利德曼生化股份有限公司提供,操作严格按照试剂盒说明进行,尿蛋白定性检测在尿分析仪优立特 500B 上测定。②诊断标准:肾功能不全判定标准为 $Ccr < 90 \text{ ml/min}$, Ccr 计算公式:男性 $=(140 - \text{年龄}) \times \text{体重}(\text{kg}) / 72 \times \text{Scr}(\text{mg/dl})$;女性 $=(140 - \text{年龄}) \times \text{体重}(\text{kg}) / 85 \times \text{Scr}(\text{mg/dl})$; MODS 诊断标准:依据胡森等^[6]1995 年提出的诊断标准:诱发因素 + 全身炎症反应综合征(SIRS) + 器官功能不全。

1.3 统计学方法

所有数据经过校对后输入计算机,采用 spss11.5 建立数据

库,比较两组之间肾功能不全发生的率、MODS 发生率、病死率的差异,计量资料用 t 检验,计数资料采用卡方检验,以 $P < 0.05$ 认为有统计学差异。

2 结果

2.1 两组患者肾功能不全,多器官功能衰竭,病死率及 APACHE II 评分比较

190 例患者尿蛋白定性为阳性的为 124 例患者,阴性的 66 例患者,经过比较发现 ARF 发生率,MODS 发生率,病死率,APACHE II 评分阳性组患者均明显高于阴性组患者,差异有显著的统计学意义 $P < 0.01$,详见表 1。

表 1 两组患者肾功能不全,多器官功能衰竭,病死率及 APACHE II 评分比较(n%)

Table 1 Comparison of renal insufficiency, multiple organ failure, mortality and APACHE II scores in two groups patients (n%)

Group	ARF rate	MODS rate	case-fatality rate	APACHE II scores
Urine protein negative group	0(0.00)	7(10.61)	13(19.69)	42.76± 32.64
Urinary protein positive group	71(57.26)	67(54.32)	56(45.16)	64.23± 22.34
t/X ²	60.34	34.16	12.08	18.64
P	<0.01	<0.01	<0.01	<0.01

2.2 不同尿蛋白阳性组之间肾功能不全,多器官功能衰竭,病死率及 APACHE II 评分比较

对不同蛋白阳性组患者经过行 χ^2 列表资料的卡方检验和 t 检验,经过比较发现 ARF 发生率,MODS 发生率,病死率,APACHE II 评分不同组尿蛋白阳性组之间差异有显著的统计学意义 $P < 0.01$,随着尿蛋白 + 的增加,ARF 发生率,MODS 发生率,病死率,APACHE II 评分逐渐增加,详见表 2。

表 2 不同蛋白阳性组之间肾功能不全,多器官功能衰竭,病死率及 APACHE II 评分比较

Table 2 Comparison of renal insufficiency, multiple organ failure, mortality and APACHE II scores in different Urinary protein positive groups(n%)

Group	n	ARF rate	MODS rate	case-fatality rate	APACHE II scores
±	32	7(21.88)	5(21.88)	4(21.88)	51.23± 23.34
+	45	23(51.11)	28(21.88)	19(21.88)	62.36± 32.34*
++	47	39(82.98)	35(21.88)	33(21.88)	72.34± 28.67* #
t/X ²		29.39	28.17	25.85	11.23
P		<0.01	<0.01	<0.01	<0.01

Note: * Compared with ± group, the difference was significant statistically significant, $P < 0.01$.# Compared

with ± +group, the difference was significant statistically significant, $P < 0.01$

3 讨论

ICU 患者多是危重病患者,这些患者的由于受到原发疾病的影响机体的器官、组织、细胞各方面功能迅速发生一系列病理生理学改变并,常常伴有神经代谢障碍,缺血再灌注损伤等病理生理现象,造成大量的炎症递质,氧自由基损伤各个脏器,当这些因素致肾小球滤过膜通透性及电荷屏障受损或肾小管对蛋白质重吸收障碍时,尿中则出现蛋白,因此有研究认为尿蛋白定性可以反映 ICU 危重症患者的病情严重程度,预测患者预后^[6]。

本研究通过对 190 例患者尿蛋白定性检验并分析尿蛋白定性与患者预后的分析发现:尿蛋白阴性组 ARF 发生率为 0,而尿蛋白阳性组发生率为 57.26,差异具有显著的统计学意义 ($X^2=60.34$ $P < 0.01$),同样 MODS 发生率和病死率尿蛋白阳性

组发生率均多于尿蛋白阴性组发生率,差异有显著的统计学意义 ($P < 0.01$),并且 APACHE II 评分尿蛋白阳性组为 64.23± 22.34,明显高于尿蛋白阴性组 42.76± 32.64,差异具有显著的统计学意义(t 值 =18.64 $P < 0.01$),并且本研究进一步研究发现尿蛋白阳性组,随着尿蛋白含量增加,ARF 发生率,MODS 发生率,病死率,APACHE II 评分,也随着增加。这说明尿蛋白含量与 ARF 和 MODS 发生密切相关,可以很好的预测两种并发症的发生,并且本研究显示尿蛋白含量与 APACHE II 评分也密切相关,APACHE II 评分是 ICU 长用的预测危重患者危重程度的模型,该评分是建立在急性病的危重程度可以通过多种生理指标来衡量的标准上,以往的国内外研究均认为 APACHE II 评分是评价危重患者病情及死亡率的可靠指标^[7-14],这说明尿蛋白定性可以很好的反应 ICU 危重症患者的病情严重

程度,并且本研究显示随着尿蛋白含量的增加,死亡率也在增加,更说明这一点。

综上所述,笔者认为虽然尿蛋白定性实验在反映肾脏损害方面不如尿微量蛋白^[15]准确,但尿蛋白定性具有试验简单、快速、容易在基层医院普遍推广的优势,并且本研究显示尿蛋白定性能很好的预测ICU危重患者肾功能不全,多器官功能衰竭和死亡的发生,并且尿蛋白定性可以很好反应患者病情的严重程度,因此本研究认为尿蛋白定性在ICU危重症患者中具有较高的临床价值,值得推广应用。

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