

## 糖尿病伴有细菌性肝脓肿临床特征分析

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**【摘要】目的** 化脓性肝脓肿是一种危及生命的疾病，往往伴有慢性疾病或危险因素，本文回顾性分析36例诊断为化脓性肝脓肿的临床特征，比较糖尿病及非糖尿病肝脓肿患者临床特征的差异性，以期为临床管理提供依据。**方法** 收集2016年2021年9月于本院住院诊断为PLA患者共44例一般资料、临床资料，根据患者是否伴有糖尿病分为两组，统计的临床资料包括：人口学特征、基础疾病、临床表现、实验室检查、影像学检查、伴发病、治疗方法、住院天数等。**结果** 最终36例患者纳入本研究，男女比例为25/11，平均年龄为(63.92±13.05)岁。其中糖尿病组20例，在糖尿病组中男女比例为15/5，平均年龄为(62.2±14.12)岁；非糖尿病组16例，在非糖尿病组中，男女比例为10/6，平均年龄为(66.06±11.58)岁；两组间年龄及性别无显著性差异。两组患者既往病史、临床症状及伴发疾病的比较中，两组间腹部手术史( $P_{\text{腹部手术}}=0.049$ )、是否伴有其他慢性疾病史( $\chi^2_{\text{慢性疾病史}}=10.89$ ,  $P_{\text{慢性疾病史}}=0.002$ )以及是否伴有肺部感染( $\chi^2_{\text{肺部感染}}=5.63$ ,  $P_{\text{肺部感染}}=0.03$ )上存在显著性差异；两组间白细胞计数、中性粒细胞计数、血小板计数、C反应蛋白、降钙素原均无显著性差异；两组间血糖、糖化血红蛋白存在显著性差异( $P_{\text{HbA1c}}<0.001$ ;  $P_{\text{Glu}}<0.001$ )；两组间血白蛋白、碱性磷酸酶、丙氨酸氨基转移酶、门冬氨酸氨基转移酶、谷氨酰转氨酶、总胆红素、直接胆红素、间接胆红素、尿素氮及肌酐无显著性差异；两组间尿酸( $P_{\text{UA}}=0.01$ )、尿酸/肌酐( $t_{\text{UA/Cr}}=2.77$ ,  $\text{PUA/Cr}=0.009$ )存在显著性差异；两组间在是否为肺炎克雷伯杆菌感染上存在显著性差异( $\chi^2_{\text{肺炎克雷伯杆菌}}=5.14$ ,  $P_{\text{肺炎克雷伯杆菌}}=0.04$ )；两组病人肝脓肿的位置均在肝右叶，其中在非糖尿病组中有1例为多发，糖尿病组中4例为多发，但两组间并无统计学差异；两组间在脓肿大小的构成比上无统计学差异( $P_{\text{大小}}=0.89$ )；在糖尿病组中14例(70%)的病人入院诊断未确定未收入专科诊治延误治疗，非糖尿病组中5例(31.23%)出现了上述情况，两组间存在显著性差异( $\chi^2_{\text{延误}}=5.14$ ,  $P_{\text{延误}}=0.02$ )；糖尿病组患者平均住院天数为(16.75±3.54)天，非糖尿病组住院天数(13.31±4.39)天，两组间住院天数有显著性差异( $t_{\text{住院天数}}=2.60$ ,  $P_{\text{住院天数}}=0.014$ )。**结论** 糖尿病伴有肝脓肿的患者临床症状及体征无特异性，但常伴有肺部感染，且腹部手术史较少，炎症指标、肝功能还有影像学检查并无特异性；尿酸和尿酸/肌酐的变化在糖尿病肝脓肿患者中较其他炎症指标变化更为敏感；糖尿病肝脓肿患者更容易感染肺炎克雷伯杆菌，这可能与患者血糖控制欠佳有关；糖尿病伴有肝脓肿的患者更容易被延误，且住院周期更长。

**【关键词】**糖尿病；肝脓肿；尿酸

### Analysis of clinical features of diabetes mellitus with bacterial liver abscess

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**【Abstract】Objective** Purulent liver abscess is a life-threatening disease, often accompanied by chronic diseases or risk factors. This paper retrospectively analyzed the clinical characteristics of 36 cases diagnosed with suppurative liver abscess, and compared the clinical characteristics of diabetic and non-diabetic patients with liver abscess. The differences in characteristics are expected to provide a basis for clinical management. **Methods** The general and clinical data of 44 patients with PLA who were hospitalized in our hospital in September 2016 and 2021 were collected and divided into two groups according to whether the patients were accompanied by diabetes.

The statistical clinical data included: demographic characteristics, underlying diseases, clinical Manifestations, laboratory examinations, imaging examinations, concomitant diseases, treatment methods, length of hospital stay, etc. **Results** Finally, 36 patients were included in this study, with a male to female ratio of 25/11 and an average age of (63.92±13.05) years. Among them, there were 20 cases in the diabetes group, the ratio of male to female in the diabetes group was 15/5, and the average age was (62.2±14.12) years; there were 16 cases in the non-diabetic group, and the ratio of male to female in the non-diabetic group was 10/6, and the average age was (66.06±11.58) years old; there was no significant difference in age and gender between the two groups. In the comparison of past medical history, clinical symptoms and concomitant diseases between the two groups, the history of abdominal surgery between the two groups ( $\chi^2$  abdominal surgery=0.049), the history of other chronic diseases ( $\chi^2$  chronic disease history =10.89,  $P$  history of chronic diseases) = 0.002) and with or without pulmonary infection ( $\chi^2$  pulmonary infection = 5.63,  $P$  pulmonary infection = 0.03); white blood cell count, neutrophil count, platelet count, C-reactive protein between the two groups There was no significant difference in blood sugar and glycosylated hemoglobin between the two groups ( $P$ HbA1c<0.001;  $P$ Glu<0.001); serum albumin, alkaline phosphatase, alanine aminotransferase between the two groups, aspartate aminotransferase, glutamyl transpeptidase, total bilirubin, direct bilirubin, indirect bilirubin, urea ammonia and creatinine had no significant difference; uric acid ( $P$ UA=0.01), There was a significant difference in uric acid/creatinine ( $t$ UA/Cr=2.77,  $P$ UA/Cr=0.009); there was a significant difference in whether the two groups were infected with *Klebsiella pneumoniae* ( $\chi^2$  *Klebsiella pneumoniae* =5.14,  $P$  *Klebsiella pneumoniae* = 0.04); the location of liver abscesses in both groups was in the right lobe of the liver, of which 1 case was multiple in the non-diabetic group, and 4 cases were multiple in the diabetic group, but there was no statistical difference between the two groups. There was no statistical difference in the composition ratio of abscess size between the two groups ( $P$  size = 0.89); 14 patients (70%) in the diabetes group had an undetermined admission diagnosis and were not admitted to specialist diagnosis and treatment and delayed treatment, and in the non-diabetic group 5 cases (31.23%) had the above situation, and there was a significant difference between the two groups ( $\chi^2$  delay =5.14,  $P$  delay=0.02); the average length of hospital stay in the diabetic group was (16.75±3.54) days, and the length of hospital stay in the non-diabetic group was (13.31±4.39) days, there was a significant difference in hospital days between the two groups ( $t$  hospital days = 2.60,  $P$  hospital days = 0.014). **Conclusion** The clinical symptoms and signs of diabetic patients with liver abscess are not specific, but they are often accompanied by pulmonary infection, and have less history of abdominal surgery. The inflammatory indicators, liver function and imaging tests are not specific; uric acid and uric acid/creatinine Changes in creatinine are more sensitive than changes in other inflammatory markers in patients with diabetic liver abscess; patients with diabetic liver abscess are more likely to be infected with *Klebsiella pneumoniae*, which may be related to poor glycemic control; patients with diabetes and liver abscess are more prone to delayed and longer hospital stays.

**【Keywords】** Diabetes; Liver Abscess; Uric Acid

## 前言

化脓性肝脓肿 (Pyogenic liver abscess; PLA) 是一种危及生命的疾病, 发病率和死亡率较高<sup>[1]</sup>。PLA 往往伴有慢性疾病或危险因素, 这些危险因素包括糖尿病, 一些研究表明, 糖尿病是大约 29.3-44.3% 的 PLA 病例的伴发疾病<sup>[2, 3]</sup>。本文回顾性分析 2016 年 1 月-2021 年 9 月蚌埠医学院第二附属医院收治

的 36 例诊断为化脓性肝脓肿的临床特征, 比较糖尿病及非糖尿病肝脓肿患者临床特征的差异性, 以期 为临床管理提供依据。

## 1 资料与方法

### 1.1 研究对象

收集 2016 年 2021 年 9 月于本院住院诊断为 PLA 患者共 44 例。44 例患者均符合以下标准: 1)

发热、寒战、腹痛；2)有血液和脓液微生物学鉴定；3)通过腹部超声(US)、计算机断层扫描(CT)或磁共振成像(MRI)判断肝脏脓肿影像检查。排除1)诊断为阿米巴肝脓肿或感染性肝囊肿的患者；2)无明确记录或未接受任何治疗的患者；3)怀孕。

### 1.2 研究方法

收集上述患者一般资料、临床资料，根据患者是否伴有糖尿病分为两组，统计的临床资料包括：人口学特征、基础疾病、临床表现、实验室检查、影像学检查、伴发病、治疗方法、住院天数等。

### 1.3 统计学方法

采用SPSS 22.0 软件进行统计分析。符合正态分布的计量资料用均数±标准差( $\bar{x} \pm s$ )表示，两组间比较采用t检验；偏态分布的计量资料两组间比较采用Mann - Whitney U检验；计数资料用率表示，两组间比较采用 $\chi^2$ 检验或Fisher精确检验。 $P < 0.05$ 为差异有统计学意义。

## 2 结果

### 2.1 两组间临床特征比较

44例患者中有8例血培养或穿刺液培养未发现细菌，将其排除。最终36例患者纳入本研究，男女比例为25/11，平均年龄为(63.92±13.05)岁。其中糖尿病组20例，在糖尿病组中男女比例为15/5，平均年龄为(62.2±14.12)岁；非糖尿病组16例，在非糖尿病组中，男女比例为10/6，平均年龄为(66.06±11.58)岁；两组间年龄及性别无显著性差

异。两组患者既往病史、临床症状及伴发疾病的比较中，两组间腹部手术史( $P_{\text{腹部手术}}=0.049$ )、是否伴有其他慢性病史( $\chi^2_{\text{慢性病史}}=10.89$ ,  $P_{\text{慢性病史}}=0.002$ )以及是否伴有肺部感染( $\chi^2_{\text{肺部感染}}=5.63$ ,  $P_{\text{肺部感染}}=0.03$ )上存在显著性差异(详见表1)。

### 2.2 实验室检查结果

两组间在白细胞计数、中性粒细胞计数、血小板计数、C反应蛋白、降钙素原均无显著性差异；两组间血糖、糖化血红蛋白存在显著性差异( $P_{\text{HbA1c}} < 0.001$ ;  $P_{\text{Glu}} < 0.001$ )；两组间血白蛋白、碱性磷酸酶、丙氨酸氨基转移酶、门冬氨酸氨基转移酶、谷氨酰转氨酶、总胆红素、直接胆红素、间接胆红素、尿素氮及肌酐无显著性差异；两组间尿酸( $P_{\text{UA}}=0.01$ )、尿酸/肌酐( $t_{\text{UA/Cr}}=2.77$ ,  $P_{\text{UA/Cr}}=0.009$ )存在显著性差异。

### 2.3 微生物检查结果的比较

糖尿病组中20例病人中，15例微生物检查(穿刺液或血培养)结果为肺炎克雷伯杆菌(75%)感染，3例为大肠埃希菌(15%)，1例为A群链球菌(5%)，1例为植生拉乌尔菌(5%)；在非糖尿病组中6例为肺炎克雷伯杆菌(37.5%)，6例为大肠埃希菌(37.5%)，2例为粪肠球菌(12.5%)，1例为A群链球菌(6.25%)，1例为溶血性葡萄球菌(6.25%)，两组间在是否为肺炎克雷伯杆菌感染上存在显著性差异( $\chi^2_{\text{肺炎克雷伯杆菌}}=5.14$ ,  $P_{\text{肺炎克雷伯杆菌}}=0.04$ )。

表1 临床资料及伴发疾病比较

既往病史/症状/体征/伴发疾病	糖尿病组 (n=20)	非糖尿病组 (n=16)	$\chi^2$	P
胆道疾病	6 (30%)	7 (43.8%)	0.728	0.493
肝病	3 (15%)	2 (12.5%)	-	1.00
腹部手术史	2 (10%)	7 (43.8%)	-	0.049*
发热、乏力	17 (85%)	14 (87.5%)	-	1.00
寒战、畏寒	9 (45%)	7 (43.8%)	0.006	1.00
恶心、呕吐、食欲不振	7 (35%)	4 (25%)	-	0.72
黄疸	0	0	-	1.00
咳嗽咳痰	1 (5%)	1 (6%)	-	1.00
上腹痛	7 (35%)	4 (25%)	-	0.718
肝区叩痛	3 (15%)	4 (25%)	-	0.675
其他慢性病史(高血压、冠心病、脑梗死)	16 (80%)	4 (25%)	10.89	0.002*
肺部感染	10 (50%)	2 (12.5%)	5.63	0.03*

表 2 实验室相关指标的比较

实验室指标	糖尿病组	非糖尿病组	t	P
WBC (x10 <sup>9</sup> /L)	12.07±3.50	16.05±11.76	-	0.35
NC (x10 <sup>9</sup> /L)	10.49±3.27	13.60±10.64	-	0.67
RBC (x10 <sup>9</sup> /L)	4.13±1.21	3.81±0.58	0.95	0.35
PLT (x10 <sup>9</sup> /L)	182.65±93.77	223.5±98.99	-1.28	0.21
CRP (mg/L)	120.93±69.83	83.27±65.58	1.65	0.11
PCT (ng/mL)	26.22±41.10	8.59±11.23	-	0.65
HbA1c (%)	9.81±2.40	5.45±0.98	-	<0.001*
Glu (mmol/L)	13.05±8.36	8.36±2.65	-	<0.001*
ALB (IU/L)	31.06±5.24	27.65±5.37	1.92	0.06
ALP (IU/L)	209.60±153.78	202.56±153.42	0.14	0.90
ALT (IU/L)	94.65±113.58	118.94±146.71	-0.56	0.58
AST (IU/L)	105.5±157.18	175.38±291.70	-0.92	0.36
GGT (IU/L)	177.65±164.42	247.19±155.01	-1.30	0.21
STB (umol/L)	23.77±17.86	21.40±11.78	0.44	0.66
SDB (umol/L)	12.54±11.98	10.43±8.31	0.60	0.55
SIB (umol/L)	11.23±6.83	10.97±7.04	0.12	0.91
Cr (umol/L)	73.35±28.57	100.87±76.05	-1.37	0.19
Bun (mmol/L)	6.09±2.31	7.16±5.25	-0.75	0.46
UA (umol/L)	274.25±50.07	234.94±75.26	-	0.01*
UA/Cr	4.20±1.60	2.88±1.16	2.77	0.009*

注：WBC=白细胞计数；NC=中性粒细胞计数；RBC=红细胞计数；PLT=血小板计数；PCT=降钙素原；HbA1c=糖化血红蛋白；Glu=葡萄糖；ALB=白蛋白；ALT=丙氨酸氨基转移酶；AST=门冬氨酸氨基转移酶；GGT=谷氨酰转肽酶；ALP=碱性磷酸酶；ALB=血清白蛋白；STB=总胆红素；SDB=直接胆红素；SIB=间接胆红素；BUN=尿素氮；Cr=肌酐；UA=尿酸；UA/Cr=尿酸/肌酐。

#### 2.4 影像学检查结果的比较

两组病人肝脓肿的位置均在肝右叶，其中在非糖尿病组中有1例为多发，糖尿病组中4例为多发，但两组间并无统计学差异；对两组中最大脓肿的直径进行统计，在2型糖尿病组中，3例患者脓肿小于5cm（15%），13例患者脓肿为5-10cm（65%），4例脓肿大于10cm（20%），在非糖尿病组中4例患者脓肿小于5cm（25%），9例患者脓肿为5-10cm（56.25%），3例脓肿大于10cm（18.75%），两组间在脓肿大小的构成比上无统计学差异（ $P_{大小}=0.89$ ）。

#### 2.4 治疗及转归

在糖尿病组中14例（70%）的病人入院诊断未确定未收入专科诊治延误治疗，非糖尿病组中5例

（31.23%）出现了上述情况，两组间存在显著性差异（ $\chi^2_{延误}=5.14$ ， $P_{延误}=0.02$ ）。36例患者中，仅1例未进行穿刺，余病人均进行穿刺引流的治疗，36例患者均联合应用抗生素进行治疗；糖尿病组患者平均住院天数为（16.75±3.54）天，非糖尿病组住院天数（13.31±4.39）天，两组间住院天数有显著性差异（ $t_{住院天数}=2.60$ ， $P_{住院天数}=0.014$ ）；36例细菌性肝脓肿患者经治疗，腹痛、寒战、发热等症状缓解，上腹部压痛、叩痛等体征阴性，复查实验室检查无明显异常，B超提示脓腔缩小后出院。

#### 3 讨论

综上所述，糖尿病伴有肝脓肿的患者临床症状及体征无特异性，但常伴有肺部感染，且腹部手术史较少，炎症指标、肝功能还有影像学检查并无特

异性；尿酸和尿酸/肌酐的变化在糖尿病肝脓肿患者中可能较其他炎症指标变化更为敏感；糖尿病肝脓肿患者更容易感染肺炎克雷伯杆菌，这可能与患者血糖控制欠佳有关；糖尿病伴有肝脓肿的患者更容易被延误，且住院周期更长。

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