DOI:10.16016/j.1000-5404.2001.01.052
第23卷第1期 第三军医大学学报 Vol. 23, No. 1
112 2001年1月 ACTA ACADEMIAE MEDICINAE MILITARIS TERTIAE Jan. 2001

论著

文章编号:1000-5404(2001)01-0112-02

胰弹力蛋白酶Ⅰ和核糖核酸酶检测的临床价值

达四平,徐纬中,于世远,赵晓晏,李宜辉,郭 萍 (第三军医大学附属新桥医院消化内科,重庆 400037)

提 要:目的 探讨人胰弹力蛋白酶Ⅰ(Human pancreatic elastase 1,HPE_1)放射免疫测定(Radioimmunoassay,RIA)和核糖核酸酶(Ribonuclease,RNase)活性检测的临床价值。方法 参照Satake等建立的改良HPE1 RIA和Thomas等的改良酸溶性产物法检测82例正常成年人和222例各类患者血清并分析结果。结果 82例健康成人HPE1值为23.8(3.4 ng/L),RNase活性为57.03(12.16 μ/ml);急性胰腺炎和胰腺癌HPE_1值明显高于其他疾病($P<0.01$)。联合检测HPE_1、RNase活性可提高胰腺癌的检出率(92.47%)。结论 HPE_1 RIA对急性胰腺炎有诊断价值,联合检测HPE_1、RNase活性检测对胰腺癌诊断有一定的临床价值。

关键词:人胰弹力蛋白酶Ⅰ;核糖核酸酶;急性胰腺炎;胰腺癌
中图法分类号:R446.62;R446.9 文献标识码:A

Clinical value of serum human pancreatic elastase 1 level and ribonuclease activity in patients with pancreatic diseases

DA Si-ping, XU Wei-zhong, YU Shi-yuan, ZHAO Xiao-yan, LI Yi-hui, GUO Ping (Department of Gastroenterology, Xinqiao Hospital, Third Military Medical University, Chongqing 400037, China)

Abstract: Objective To explore the clinical value of serum human pancreatic elastase 1 (HPE_1) level and ribonuclease (RNase) activity in patients with pancreatic diseases. Methods A total of 222 patients were subjected in the study, including 23 of acute pancreatitis, 12 of chronic pancreatitis, 93 of pancreartic cancer, 24 of metastatic cancer of pancreas, 50 of other cancer and 20 of peptic ulcer. Eighty two healthy individuals were served as control. Serum HPE_1 level was determind by Satake's modified RIA and RNase activity by Thomas' modified method. Results The serum contents of HPE_1 and Rnase were 23.8(3.4 ng/L and 57.03(12.16 μ/ml respectively in 82 normal persons. Serum level of HPE_1 was much higher in patients with acute pancreatitis or pancreatic cancer than in others diseases ($P<0.01$). Combined detection of serum HPE_1 level and Rnase activity increased the positive rate to 92.47% in the diagnosis of pancreatic cancer. Conclusion HPE_1 RIA has the value for diagnosing acute pancreatitis, and the combined determination of serum HPE_1 level and RNase activity is valuable in the diagnosis of pancreatic cancer.

Key words: human pancreatic elastase 1; ribonuclease; acute pancreatitis; pancreatic cancer

胰腺癌临床症状隐匿,诊断困难。急性胰腺炎血清学诊断主要依靠淀粉酶酶活性测定,影响因素较多。HPE_1 RIA和RNase活性测定在国外已经广泛应用于胰腺疾病临床。本实验利用我科实验室参照国外方法建立的改良HPE_1 RIA和改良RNase活性测定方法测定了82例正常成年人、222例各类患者血清并分析结果,讨论上述方法对急性胰腺炎和胰腺癌的诊断价值。

1 材料与方法

1.1 研究对象

健康成人组:82例,男45例,女37例,年龄23~62岁,平均44.3岁;急性胰腺炎组:23例(符合日本厚生省急性胰腺炎诊断标准),男14例,女9例,年龄19~64岁,平均31.0岁;慢性胰腺炎组:12例(诊断标准:手术及/或病理证实为慢性胰腺炎和BT-PABA排泄试验6 h尿PABA排泄率<45%),男6例,女6例,年龄30~75岁,平均48.4岁;消化性溃疡组:20例,男13例,女7例,年均35.1岁;胰腺癌组:93例(我科实验室收集重庆市6所医院胰腺癌血清),男68例,女25例,年龄38~67岁,平均48.6岁;转移性胰腺癌组:24例(来源于大肠癌16例、胃癌5例、肝癌3例),男14例,女10例,年龄35~61岁,平均年龄47.0岁;非胰腺肿瘤组:50例(原发性肝癌20例,胃癌20例,食道癌10例),男38例,女12例,平均年龄49.6岁。肿瘤病例均经手术和病理检查证实。

1.2 HPE_1 RIA

参照Satake等[1]的改良HPE_1 RIA,建立HPE_1 RIA并做方法学鉴定。

1.3 RNase活性测定

参照Thomas等[2]的改良酸溶性产物法测定,并做方法学鉴定。

1.4 统计学处理

采用t检验、χ^2检验和相关分析。

2 结果

各组HPE_1值,见表1。相关分析表明,胰腺癌组HPE_1值

作者简介:达四平(1960-),男,主治医师,副教授,天津市人,主要从事胰腺癌免疫诊断方面的研究,发表论文6篇。电话:(023)68755604

收稿日期:2000-09-13;修回日期:2000-11-20

?1994-2016 China Academic Journal Electronic Publishing House. All rights reserved. http://www.cnki.net

与 RNase 活性间无明显相关($r=-0.1360$)。HPE_1 RIA 与 RNase 活性测定联合检测胰腺癌组的阳性率, 见表 2。

表 1　各组 HPE_1、RNase 活性检测结果

Tab 1　Result of HPE_1 and RNase activity determination

Group	n	HPE_1(ng/L)	RNase activity(u/ml)
Control	82	23.8±3.4	57.03±1
Pancreatic cancer	93	83.3±73.4 *	96.45±28.87 *
Metastatic cancer of pancreas	24	31.2±7.4	66.98±24.83
Other carcer	50	25.7±6.7	63.07±23.15
Acute pancreatitis	23	218.6±163.2 *	67.97±27.84 **
Chronic pancreatitis	12	30.9±7.8	69.11±29.05 **
Peptic ulcer	20	24.0±5.8	61.34±22.30

*: $P<0.01$,　**: $P<0.05$ *vs* control

表 2　HPE_1 与 RNase 活性联合检测胰腺癌的阳性率

Tab 2　Positive rate of HPE_1, RNase activity and combined assay in pancreatic cancer patients

	n	Positive case	Positive rate (%)
HPE_1	93	62	66.67 *
RNase activity	93	70	75.27 *
Combined assay	93 *	86	92.47

*: $P<0.01$ *vs* combined assay

3　讨论

用两种方法检测 304 份血清(82 例健康成人和 222 例各类病人血清)的 HPE_1 值和 RNase 活性, 健康成人组血清 HPE_1 值、RNase 活性, 男、女间差异均无显著性($P>0.05$)。急性胰腺炎组和胰腺癌组 HPE_1 值均明显高于健康成人组($P<0.01$); 急性胰腺炎组、慢性胰腺炎和胰腺癌组 RNase 活性均明显高于健康成人组($P<0.01$, $P<0.05$)。

以 $\bar{x}+2s$ 为正常上限(HPE_1 值为 30.6 ng/L, RNase 活性为 81.35 μ/ml), 超过此值为阳性。急性胰腺炎组和胰腺癌组 HPE_1 RIA 阳性率为 100%和66.67%; 急性胰腺炎组、慢性胰腺炎和胰腺癌组 RNase 活性测定阳性率分别为30.43%、33.33%和 75.27%。

HPE_1 的临床应用价值早已引起国内外学者的重视[1,3~6]。急性胰腺炎时胰腺腺泡细胞破坏, 胰酶释放入血, 血清中 HPE_1 值升高; 胰腺癌患者 HPE_1 值升高可能是因癌肿阻塞胰管, 引起继发性胰腺炎所致[3~5]。本组资料显示 HPE_1 RIA 对急性胰腺炎诊断价值较大, 可做为该病诊断的辅助检查之一; 在胰腺癌组中, 8 例肿瘤直径小于 3 cm 的胰头癌 HPE_1 值(151.2±62.4 ng/L)和 6 例肿瘤直径小于 2 cm 的胰腺癌的 HPE_1 值(1225±1218 ng/dl)明显高于胰腺癌各分组中任何一组的血清 HPE_1 值($P<0.01$), 与国外报道相符[5,6]。HPE_1 RIA, 提示对胰腺癌诊断有一定价值(急性胰腺炎与胰腺癌临床表现差异较大, 临床鉴别不难)。

国内外学者已经证实 RNase 活性测定对胰腺癌有一定诊断价值, 且具有敏感性较高特异性强等优点[7,8]。本组资料证实 HPE_1 RIA 和 RNase 活性测定联合检测胰腺癌组的阳性率高达 92.47%, 说明联合检测优于 HPE_1 RIA 或 RNase 活性测定, 对胰腺癌临床筛选有一定价值。

综上所述, 急性胰腺炎患者血清 HPE_1 值升高明显, 可做为该病诊断的辅助检查之一; HPE_1 RIA 和 RNase 活性测定联合检测胰腺癌组的阳性率高, 可用于胰腺癌的临床筛选。

参考文献:

[1] Satake K, Chung Y, Umeyama K. Serum elastase 1 levels in pancreatic disease[J]. Am J Surg, 1982, 144(2): 239-242.

[2] Thomas J M, Eigen H, Hodes M E. Isozyme of ribonuclease in human serum and urine[J]. Clin Chim Acta, 1981, 111(2-3): 185-195.

[3] Millson C E, Charles K, Poon P, *et al*. A prospective study of serum pancreatic elastase-1 in the diagnosis and assessment of acute pancreatitis[J]. Scand J Gastroenterol, 1998, 33(6): 664-668.

[4] Nakae Y, Naruse S, Shibata T, *et al*. Early detection of pancreatic cancer by serum markers[J]. Rinsho Byori, 1994, 42(2): 139-142.

[5] 戴晓晶, 于世远, 郭　萍. 胰弹力蛋白酶 I 对胰腺癌诊断价值的探讨[J]. 中华消化杂志, 1989, 9(5): 229.

[6] Hayakawa T, Kondo T, Shibata T, *et al*. Prospective trial for early detection of pancreatic cancer by elevated serum immunoreactive elastase[J]. Gastroenterol Jpn, 1990, 25(6): 727-731.

[7] 王源敏, 于世远, 郭　萍. 血清核糖核酸酶及其同功酶对胰腺癌诊断的初步探讨[J]. 中华消化杂志, 1988, 8(3): 134-137.

[8] Kemmer T P, Malfertheiner P. Serum ribonuclease activity in the diagnosis of pancreatic disease[J]. Int J Pancreatol, 1991, 8(1): 23-33.

(编辑　潘式文)

?1994-2016 China Academic Journal Electronic Publishing House. All rights reserved.　http://www.cnki.net