Applied Research of CA19-9 in the diagnosis of early pancreatic cancer

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Abstract: Objective To investigate the tumor marker carbohydrate antigen CA19-9 in the diagnosis of early pancreatic cancer (PCA) and to find the value and significance of early diagnosis. **Methods** In our hospital from February 2010 to October 2012, 35 patients among treated with pancreatic cancer, it is set to the observation group, while 40 patients healthy subjects were set as the reference group. Chemiluminescence immunoassay method for the observation group and the reference group of healthy patients with pancreatic cancer by measuring tumor markers carbohydrate antigen CA19-9 levels, and clinical correlation. **Results** The group of 35 patients with serum CA19-9 levels were significantly higher than the reference group of healthy subjects, the positive rate of 86.9% of the observation group, the positive rate of 7.3% in the reference group, two groups, the difference was statistically significant sex significance (P <0.05). **Conclusion** Early diagnosis of pancreatic cancer, on the determination of CA19-9 is very important in the clinical value, is deemed reliable indicators can improve the early diagnosis of pancreatic cancer.

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Key words: early pancreatic cancer; tumor markers carbohydrate antigen CA19-9; early diagnosis

Clinically, pancreatic cancer is more common and is a highly malignant tumor, currently, the incidence rate showed an increasing trend, mainly in the treatment of pancreatic cancer surgical excision, but according to reports, and clinical information related study found that surgical resection the success rate is low, only about 30% [1], and postoperative survival rate is low, and thus the means of diagnosis of pancreatic cancer, pancreatic cancer and high-risk groups for analysis, while improving early diagnosis of pancreatic cancer is particularly important. However, pancreatic cancer is a malignant tumor can not easily be detected early, which is not obvious early symptoms of pancreatic cancer, and physiological and pathological features associated with [2]. Currently, early diagnosis of pancreatic cancer is still lacking, but clinical determination of tumor markers of clinical methods have begun to be widely accepted, the paper tumor marker carbohydrate antigen CA19-9 measurement results were analyzed to investigate the early pancreatic cancer diagnosis value and significance. Specific summary analysis are as follows:

1. Materials and Methods

1.1 Clinical data This data in our hospital from February 2010 to October 2012 are treated 35 patients with pancreatic cancer, all patients were confirmed by B-ultrasound and CT examination confirmed early pancreatic cancer combined, including 22 males and 13 females patients aged 22 years -77 years, mean age (57.8 ± 1.6) years old, set in the observation group. While the other 40 patients healthy subjects as the reference group, including 25 males and 15 females, aged 23 years old -76 years, mean age (58.6 ± 1.4) years, the two groups in age, no significant gender differences, with comparable. While the observation group stage, can be in accordance with the International Union Against Cancer (UICC-Union for International Cancer Control) is divided into seven cases of stage I, II of 12 cases, III of nine cases, IV of seven cases.

First episode of clinical symptoms manifested, upper abdominal fullness feeling, fatigue, no incentive abdominal pain, weight loss, anorexia, individual patients have skin itching, jaundice. Detailed in Table1.

Table 1. the first attack symptoms [case]

Symptoms	bloating	Stomachache	Fatigue	Back pain	emaciate	Jaundice	Pruritus
yes	24	28	20	25	28	19	22
no	11	7	15	10	7	16	13

1.2 Methods Specific detection methods for the collection of patient fasting blood 3ml, to be solidified, the need for testing on the same day, the choice of Beijing Tai Geke letter Biotechnology Co., Ltd. produces chemiluminescence immunoassay analyzer, reagent select the appropriate reagents, for observation group of patients and the reference group of healthy subjects serum CA19-9 levels were

measured, the normal reference value of less than 18.2u/ml.

1.3 Statistical methods In this article studies the data are used for statistical analysis SPSS13.0 statistical software package, using the mean ± s, the data using the X2 test, P <0.05 indicates the difference is statistically significant presence.

2. Results

2.1 Observe the group of 35 patients with serum CA19-9 levels were significantly higher than the reference group of healthy subjects, the positive rate of 86.9% of the observation group, the positive rate of 7.3% in the reference group, two groups, the difference was statistically significant with (P <0.05). detailed in Table 2.

Table 2 Serum CA19-9 levels were measured in comparison (±s, %)

Group	cases	CA19-9(U/ml)	Positive rate(%)
Observation group	35	379.8±303.1	86.9
Reference group	40	18.2±20.0	7.3
X^2 Value		21.07	15.03
P value		<0.05	<0.05

2.2 Pairs of stages I-Ⅳ serum CA19-9 were measured and found serum CA19-9 were significantly increased, indicating that early pancreatic CA19-9 levels rise has appeared in the early diagnosis, has a very important significance and serum CA19-9 levels did not appear due to the different stages of a significant increase in the emergence of the phenomenon, namely the various stages of serum CA19-9 level difference was no statistically significant difference (P> 0.05), concrete results shown in Table 3.

Table 3 stages of pancreatic cancer serum CA19-9 Comparison of measured

group	cases	CA19-9(U/ml, $\bar{x}$ ±s)
I	7	409.8±453.1
II	12	397.8±345.6
III	9	348.2±329.0
IV	7	410.2±357.4
X^2value		10.57
P value		>0.05

Note: The analysis of the outcome by measuring the various stages of serum CA19-9 levels, the difference was not statistically significant (P <0.05).

3. Discussion

Clinically, the early diagnosis of pancreatic cancer is difficult, our current basis for the early diagnosis of pancreatic cancer that is a diameter of not more than 2cm [3], and found no lymph node metastasis, invasive pancreatic capsule was not found, the standard source of pancreatic cancer in Japan handling practices. Difficulties in early diagnosis of pancreatic causes one of the reasons, the deep parts and the pancreas are closely related to the physiological and anatomical parts of the pancreas with specificity, resulting in the patient's early symptoms not obvious clinical lack of specificity, when there is significant symptoms , pancreatic cancer has changed, the majority of pancreatic invasion has begun outside, or start disseminated, it also gives clinical surgery brought greater difficulties, the cure rate is not high, and the success rate is low.

General clinical practice, early diagnosis of pancreatic cancer, multiple choice imaging method, by gastrointestinal diseases, retroperitoneal tumors and pancreatitis removed, can be confirmed. Using imaging methods such as CT or MRI [4], which is a more direct and effective method of diagnosis, but imaging of pancreatic cancer is not high sensitivity and specificity in pancreatic tumors <1.5cm, the found that it is difficult to diagnose, and on the nature of the specific reaction mass is not high.

Currently, patients are opting for tumor markers in the early diagnosis of pancreatic cancer line, this article is for tumor markers carbohydrate antigen CA19-9 levels were measured, as a method of early diagnosis of pancreatic cancer. The detection of tumor markers, only to lower costs, and the method of operation is relatively simple, easy to promote the use of technology, such as more frequent use of clinical CA19-9, CA50, CEA, etc. [5], in particular, CA19-9, is a very good tumor markers, especially high sensitivity of pancreatic cancer, adenocarcinoma was also higher in the other, CA19-9 is a human colon cancer cell lines after hybridization with myeloma tumor-associated carbohydrate antigen reacts to form. In this paper, two sets of data show that for pancreatic cancer patients was measured and found CA19-9, CA19-9 positive serum higher, 86.9%, while the specificity is high, at 90.7%, this set of data associated with reported almost unanimously [6-7], but compared with the reference group, patients with pancreatic cancer serum CA19-9 levels were significantly higher, significantly more than the normal reference values 18.2U/ml, and through the various stages of pancreatic cancer patients CA19 -9 levels were measured discovery, I phase of serum CA19-9 levels have begun to rise significantly, and in no significant increase in the next few stages (P> 0.05). The results thus show that the determination of serum CA19-9, early diagnosis of pancreatic cancer is a significant sense.

In addition, in clinical practice, diagnosis of

pancreatic cancer, selectively combined determination of tumor markers, such as the joint CEA, etc. [8], but the joint determination of the diagnosis rate was not significantly increased, and the increase of related operations, to patients with came many burdens, the findings from this study, for the diagnosis of pancreatic cancer, especially early diagnosis, easy choice for the determination of serum CA19-9, as a diagnostic method, this method deserves promotion in clinical applications.

References

[1] Gu Zhiling, ZHANG Hongyan, Liu Chang, Wang Li, Chai Lina, Zhang Xia, Yu Zhong and serum tumor markers in the diagnosis of pancreatic cancer detection application [J]. Journal of Practical Diagnosis and Therapy, 2011, 11(2): 232-233.

[2] Niederhuber JE, Brennan MF'Menck HR. The national c. llcer data basereport On panci-Pxltic cancer [JI. Cancer, 2008, 55(5):1351-1352.

[3] Yang Heng Xuan, Yanzhi Han, Min Peng autumn. Pancreatic cancer diagnosis and preoperative evaluation of the spiral[J]. Chinese Journal of Medical Imaging, 2009, 12(3): 255-256.

[4] Chenyu Qiang, Zhang Yanling CAl9-9 and CA5O as pancreatic tumor marker of recent research[J]. Foreign Medical: Surgery volumes, 1990, 17: 203.

[5] SoIlg MM, Nio Y, Sato Y, et a1. Clnicopathological significance of Ki-raspoint mutation and p21 expression in benign and malignant exoerinetumors of the human pancreaas[J]. J Pancreatol, 2008, 20(2): 89-93.

[6]Motojima ILTsunoda T, Kanematsu T'et a1. Distinguishing pancreaticcarcinoma from other Izriampullarycarcinomasbymlysisofmutationsinth e Kirsten ras oncogene [J]. ArmSurg, 2009, 14(5): 637-638.

[7] Ding-hua, Wang Rensheng. Tumor markers carbohydrate antigen cAl9-9 Progress in clinical application [J]. Guangxi Medical Journal, 2008, 33(6): 692-695.

[8] Zhu Liangru, HOU Xiaohua. Tumor markers in the digestive system and its clinical application[J]. Chinese Journal of Internal Medicine, 2008, 33 (6): 533-534. 7/11/2013.

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