The Role of αFP and CEA in Diagnosis Patients with GIT, Thyroid and Ovary Tumors

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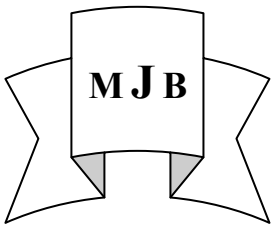

Abstract

The aim of this study is to determine the importance of simultaneous blood αFP and CEA in 60 patients with GIT, thyroid ,ovary diseases .The positive value of αFP and CEA tumor markers in female were 14(23%), 18(30%) respectively and male 4(6.66%),13(21.66%) respectively and diagnosed as age ≤ 25 years 2(3.33%),1(1.66%) and ≥25years were 16 (26.66%),30(50%) respectively. The αFP, CEA in GIT were 6(10%),20(33.33%) respectively ,in thyroid malignancy were 4(6.66%),5(8.33%) respectively and in ovary tumor were 8(13.33%),6(10%) respectively. It is important to use more than one tumor marker to determined tumors in the patients and αFP,CEA levels showed no significant correlation between αFP and CEA in the patients with GIT, significant at thyroid, ovary diseases according gender, age, GIT, thyroid malignancy and ovary tumors.

دور αFP و CEA في تشخيص امراض الجهاز الهضمي الغدة الدرقية والمبيض

الخلاصة

الهدف من الدراسة تحديد اهمية تزامن αFP و CEA في الدم في ٦٠ مريض مصابين بأمراض الجهاز الهضمي ،الغدة الدرقية والمبيض .كانت قيم الواسمات الورمية الموجبة في الاناث ١٤(٢٣%) و ١٨(٣٠%) على التوالي وفي الذكور ٤(١٠%) و١٣(٢١%) على التوالي اذ تم تشخيصها في اعمارأصغر من ٢٥ سنة وفي اعمار أكبر من ٢٥ سنة .كانت قيم CEA و αFP في امراض الجهاز الهضمي ٦ (١٠%) ،٢٠(٣٣,٣٣%) على التوالي وفي اورام الغدة الدرقية ٤(٦,٦٦%) و٥ (٨,٣٣%)على التوالي وفي اورام المبيض ٨(١٣,٣٣%) و ٦ (١٠%)على التوالي .من الضروري استخدام أكثر من واسم ورمي لتحديد الاورام في المرضى واظهرت مستويات وجود ارتباط معنوي بين AFP و CEA في مرضى الجهاز الهضمي و معنوي في الغدة الدرقية و المبيض طبقا الى الجنس ، العمر وأورام الجهاز الهضمي ،الغدة الدرقية والمبيض.

Introduction

Alpha fetoprotein (αFP) is a glycoprotein normally produced in large quantities during embryonic life in the fetal yolk sac and liver . Synthesis of αFP increases in a variety of diseases, markedly so in malignant tumors of patients such as certain germ cell tumours ,and hepatoblastoma , in hepatocellular carcinoma (HCC) [1].

CEA is a β-1 glycoprotein with a high molecular weight (180 kDa) that is produced in adenocarcinomas such as gastrointestinal cancer, lung cancer, breast cancer, pancreatic cancer and ovarian cancer [2,3].

Carcinoembryonic antigen (CEA) was first described in 1965 by Gold and Freedman [4].

It was given the name carcinoembryonic antigen, or CEA ,because the protein was detected in only cancer and embryonic tissue, [5]. The serum concentration of several tumour markers may be a reliable

diagnostic aid in advanced stages, so rather insensitive for the early diagnosis of cancer, [6,7].

Serum carcinoembryonic antigen (CEA) is a well established method for the detection of local tumor recurrence and metastases in the postoperative supervision of colorectal carcinoma patients [8,9].

The aim of present study was to verify the values of αFP and CEA in the detection of different tumors in patients ,in addition to histopathological specimens.

Patients and Methods

Blood samples were taken from 60 suspected patients, whose age range 20–85 years, the samples were collected during May to Augest 2011 at Al-Hussein hospital in Kerbala city. All of GIT,thyroid,ovary diseases), and 6 normal individuals as control. The blood was spun at 3,000 rpm and the serum separated. The sera were stored at -20°C till testing. 60 Serum specimens were tested , alpha-Fetoprotein, and CEA levels were measured by ST AIA-PAK αFP supplied by TOSOH BIOSCIENCE, USA and CEA ELISA KIT respectively according to manufacturer's instructions using ELISA.

Statistical analysis

The data were analyzed by using T-Test using SPSS 18 with $p< 0.05$ considered as statistically significant. Analysis included the following variables: αFP and CEA levels, patient gender, age, tumor location statistics at Probability values were considered to be.

Results and Discussion

Our study was revealed in Table -1 ,the ratio of αFP in female patients were 14(23%) compared with male 4(6.66%) wherse the CEA in the female patients were 18(30%) compared with male 13(21.66%) , this results were agreed with [10] that revealed (60.27,39.72)% in female and male patients respectively.

In other study it found to reveal (40.62,59.37)% in female and male respectively[11].

When present in stress and shock environments, full-length αFP undergoes a conformational change which provisional converts the growth enhancing oncofetal protein to a growth inhibitory form referred to as ―transformed αFP[12,13].

αFP-producing gastric cancers have an hostile behavior with a high metastatic potential to the liver. In addition, their clinicopathological features are quite different from the more common αFP-negative gastric cancer[14] .

CEA, on the other hand, plays an important role in tumor metastasis, especially to the liver, where it mediates tumor cell adhesion to new sites[15].

The CEA level was high significant in patients compared with the healthy groups.

Table .1 was showed the serum levels of αFP and its relationship with different stages, tumor size, node and tumor grade in patients with GIT, thyroid and ovary tumors. The serum αFP levels of patients do no significant change in GIT, significant change in thyroid tumors but no significant change in ovary tumors. the serum levels of CEA and its relationship with different stages, tumor size, node and tumor grade in patients with GIT, thyroid and ovary tumors. The serum CEA levels of patients do high significant change in GIT,thyroid tumors but no significant change in ovary tumors.

Diagnosis the cases with tumor marker was useful in determing ovarian cancer [16].

In other study, serum CEA levels showed no significant changes with any of the parameters[17].

The concentration of tumor markers in human sera is affected not only by malignant diseases, but also by many benign diseases [18] .

Conclusion

This study was indicated that αFP and CEA play role for detected GIT,thyroid and ovary tumors in the patients that suffering of cancer indications in addition to histopathological specimens.

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Table 1 correlation between α FP and CEA in patients with GIT,Thyroid malignancy,and Ovary tumors according sex and ages.

Features		Patients with αFP9.5 ng/dl	Mean	P value	Patients with CEA 5.8 ng/ml	Mean	P value
Healthy groups		6	2.93	0.006	6	2.06	0.01
Gender	Female	14(23%)	124.36	0.05	18(30%)	20.68	0.001
	Male	4(6.66%)	37.70	0.07	13(21.66%)	26.20	0.01
Age	≤ 25	2(3.33%)	413.10	0.48	1(1.66%)	19	0.000
	≥25	16(26.66%)	132.22	0.05	30(50%)	24.38	0.001
Tumor location	GIT	6(10%)	60.03	0.15	20(33.33%)	23.10	0.02
	Thyroid malignancy	4(6.66%)	34.15	0.05	5(8.33%)	33.45	0.01
	Ovary tumor	8(13.33%)	85.82	0.07	6(10%)	45.47	0.09
Total		18(30%)			31(51.66%)		