Tumor markers in psoriasis*

Leyla YILDIZ[1], Muammer PARLAK[2], Sevinç KUŞKAY[1], Fatih AKÇAY[1], Bekir Sami UYANIK[1], Ebubekîr BAKAN 1

Depts. of 1 Biochemistry and 2Dermatology, Medical School of Atatürk University, Erzurum, TURKEY

Most tumor markers are not specific for malignancies and may be elevated in several benign condition. We measured CA 19-9, CA 15-3, CA 125, AFP and CEA levels in serum samples from 25 patients with psoriasis (17 men, mean age 36. H19.9 years, range 11-78 years) and 25 healthy controls (13 men, mean age 37.3±12.5 years, range 25-65 years). Serum CA 19-9, CA 15-3, CA 125, AFP and CEA levels were determined by enzyme immunoassay methods (CIS bio international). As a result, we found higher levels ofCA 19-9, CA 125 and CA 15-3 in psoriatic patients (p<0.001, p<0.01, p<0.001, respectively) than in controls. [Turk J Med Res 1995; 13(2): 80-82]

Key Words: Psoriasis, Tumor markers

Tumor markers are expressed as the biologic substances synthesized and released by cancer cells or produced by the host in response to the presence of cancerous tissue. They may be present in circulation, body cavity and fluids plasma membranes, or in the cytosol (1-3). Markers produced by cancer cells include Immunglobulins, hormones, secreted serum proteins, enzymes and isoenzymes, cell surface markers, blood group'antigens, and extracellular matrix laboratory studies for monitoring the clinical staging of diseases, as prognostic predictors, and for early detection of disease recurrence (1-3,5). Alpha-fetoprotein (AFP), carcinoembriyonic antigen (CEA), cancer associated antigen (CA) 19-9, 125, and 15-3 and prostate-specific antigen (PSA) are commonly used as tumor markers in clinical biochemistry laboratories (1-3,6). Though the above markers are mostly elevated in some cancer type. High levels can also be found in several benign conditions (15). Tumor markers are analyzed by many different methods, including immunohistologic and immunocytologic methods, ELISA, RIA, and others (1-3).

Received: Dec. 9,1994 **Accepted:** Feb. 9,1995

Correspondence: Leyla YILDIZ
Dept. of Biochemistry
Medical School of Atatürk University
25240 Erzurum, TURKEY

** Presented in 12th National Congress of Biochemistry, Istanbul-Turkey. April 1994.*

Psoriasis is a multifactorial, genetic disease of unknown etiology that affects approximately 1-2% of the population in many countries (7,8). Singificantly increased number of proliferating keratinocytes, vascular expansion, fibroblast activation, and leukocytic infiltration are the common features of the disease (7,9).

Psoriatic patients are exposed to potential carcinogens during treatment (10). In addition, it is believed that psoriatic patients are at lower risk for developing cutaneous cancer due to rapid epithelial turnover (11). We could not find any report about tumor markers in psoriasis. Thus, we aimed to investigate some of the commonly used fumor markers levels in patients with psoriasis.

PATIENTS AND METHODS

This study included 25 psoriatic patients (17 males, 8 females, mean age: 36.1 ±19.9 years, ranging from 11 to 70 years) and 25 healthy volunteers (13 males, 12 females, mean age: 37.3±12.5 years, ranging from 25 to 65 years). Serum samples taken from each subject were stored at -20oC until assayed. Serum CA 19-9, CA 15-3, CA 125, CEA, and AFP levels were determined by enzyme immunoassay method (CIS bio international).

Of 25 psoriatic patients, 15 were treated with PUVA (Psorlens plus ultraviolet light) and 10 with systemic and/or local corticosteroids. None of the patients had malignant disease.

Values are given as mean±S.D. For statistical analysis. Mann-Whitney U test was used. P values

Table 1. Some serum tumor marker levels in the patient and control groups

	Patient (n-25) x±SD	Control (n-25) x±SD
CA 19-9 (U/ml)	63.5±47.5	8.8±2.9
CA 15-3 (U/ml)	32.6±8.7	11.0±2.8
CA 125 (U/ml)	22.3±5.3	16.4±6.5
CEA (ng/ml)	4.1 ±2.8	6.0±2.6
AFP (ng/ml)	6.1 ±2.8	5.4±5.2

Table2. The results of statistical analysis (Mann-Whitney U test)

	u	z	P
CA 19-9	460	5.6	<0.001
CA 15-3	480	5.6	<0.001
CA 125	377.5	3.6	<0.01
CEA	309.5	1.9	<0.05
AFP	270	0.98	>0.05

lower than 0.05 was accepted as statistically meaningful.

RESULTS

Serum concentrations of CA 19-9, CA 15-3, CA 125, CEA and AFP were given in Table 1. The results of statistical analysis were shown in Table 2. Mean serum CA 19-9 and CA 15-3 levels were significantly higher in the psoriatic patients than those of the controls (z-5.6, p<0.001 for CA 19-9 and z-5.64, p<0.001 for CA 15.3). In addition, CA 125 level was found to be higher in the patients (**Z**--3.6, p<0.01). Interestingly CEA levels were lower in the psoriatic patients than those of the controls (z-1.9, p<0.05). No statistically significant difference was present in AFP levels between the groups (z=0.98, p>0.05). There was no significant difference related to sex in serum CA 125 and 15-3 levels. CEA and AFP values were found to be lower in the patients treated with local corticosteroids. But no statistical significance was achieved. In addition, young patients (age<30 years) had lower CEA and AFP levels.

DISCUSSION

It was previously believed that psoriatic patients developed cutaneous, perhaps noncutaneous, cancers at a lower rate than general population due to increased epithelial turnover (11,12). However, we know that psoriatic patients are exposed to potential carcinogens, such as UV, PUVA, ionised radiation, tar, systemic chemotherapy and arsenic, during their treatments. These agents may result in mitosis, altered DNA synthesis, and cell proliferation that may lead to cancer (11-13). It was reported that patients receiving excessive amounts of drug or UV develop severe cutaneous burns (13) and that chronic PUVA therapy may lead to an increased incidence of cutaneous squamous cell carcinoma (13).

We could not find any report about tumor markers in psoriasis. Pancreatic hepatobiliary and gastric cancers in which CA 19-9 is an important tumor marker (1,14) are frequently seen in the psoriatic patients. We found considerably increased serum CA 19-9 levels in the psoriatic group. Serum CA 15-3 that is markedly increased in gastric, pancreatic, biliary tract, colon, thyroid, pulmonary, and gynecologic cancers (1,2,6) was found to be high in the psoriatic cases in our study. Serum CA 125 being a very useful tumor marker in the patients with most forms of ovarian cancer (1,3) was significantly high in the patients in our study. We should also keep in mind that acute cholangitis and cirrhosis are two benign conditions that may have significantly elevated CA 19-9 values (15) Likewie, CA 15-3 can be elevated in chronic hepatitis, liver cirrhosis, sarcoidosis, tuberculosis and systemic lupus erythematosus (15). Cardiac or liver disease can also elevate CA 125 levels (15). Elevated serum CEA is often found in non-neoplastic intestinal diseases and breast and lung cancers (3,4,6). In the present study, serum CEA levels were in normal ranges in the patients and were higher in the controls than that of the patients. Serum AFP levels did not show any difference between the groups.

As a result, we found increased levels of some tumor markers such as CA 19-9, CA 125, CA 15-3 in psoriatic patients.

Whether these elevated tumor markers were related to secondary cancers in our psoriatic patients need further clinical evaluation.

Psoriaziste tumor marker düzeyleri

Tümör markerleri malignitelere ve özgül olmayıp birçok beniyn hastalıkta da yükselebilir. Yirmibeş psöriazisli (17 erkek ve 8 kadın, ortalama yaş 36.1 ±19.9 yılı, alt üst sınır 11-70 yaş) ve 25 sağlıklı kontrol (13 erkek ve 12 kadın, ortalama yaş 37.3±12.5 yıl, alt üst sınır 25-65 yaş)'den elde edilen serumlarda karbonhidrat antijen 19-9, 15-3, 125 (CA 19-9, CA 15-3, CA 125), alfa fetoprotein (AFP) ve karsinoembriyonik antijen (CEA) düzeyleri enzim immunoassay yöntemle ölçüldü (CIS bio international kit). Sonuç olarak, psoriasislilerde CA 19-9, CA 125, CA 15-3, gibi tümör markerlarını kontrollere nazaran yüksek bulduk (sırasıyla p<0.001, p<0.01, p<0.001).
[Turk JMedRes 1995; 13(2): 80-82]