Cardiovascular findings in patients with psoriasis

To the Editor: Psoriasis is a common, genetically determined, inflammatory and proliferative disease of the skin. The etiology of psoriasis has not exactly been determined.\textsuperscript{1} Besides atypical psoriasis, other forms have been observed, including forms with systemic symptoms, associations with some skin disorders, gout, hypocalcaemia, intestinal disease and malabsorption, anterior uveitis, myopathia and cardiovascular disorders.\textsuperscript{1-4} Variations in lipid metabolism, diabetes mellitus, renal failure and malignancies may be associated with psoriasis.\textsuperscript{5-7}

An increased incidence of occlusive vascular disease has been reported in psoriatic patients in retrospective studies. Because associations between psoriasis and cardiovascular disorders have been seen so often, we aimed to investigate cardiovascular findings in psoriatic patients. Thirty-six patients with histopathologically proven psoriasis, 21 female and 15 male, aged 13-77 years, applied to the dermatology outpatient clinic of Celal Bayar University and were enrolled in our study. Psoriasis area and severity index (PASI) values were calculated for all patients. Informed consent was obtained from each patient. Complete blood count (CBC), erythrocyte sedimentation rate (ESR), biochemical analysis, lipid levels, chest radiography, electrocardiography, echocardiography and exercise electrocardiography (according to the Bruce protocol) were performed on the patients. Diastolic and systolic functions were examined with echocardiography. For diastolic functions peak early (E) wave velocity, peak atrial (A) wave velocity, E/A ratios, E wave deceleration time (EDT) and isovolemic relaxation time (IVRT) were calculated. For systolic functions, end-systolic and end-diastolic volumes were calculated and then EF (ejection fraction) was determined. Ischemic findings were examined with electrocardiography and exercise electrocardiography. All tests were applied to the 20 volunteers in the control group and the results were compared with the patient group. Data obtained from the patient and control groups were analyzed by SPSS for Windows. In the statistical analyses, Fisher’s exact test and Student’s t test were used.

The mean age of psoriatic patients was 44.7 (±14.9) years and the median value was 46.5 years.
Duration of disease varied from 1-35 years. The range of PASI values were 0.7-23.6. Laboratory findings revealed anemia in three patients (8.3%), high ESR, triglyceride (TG), cholesterol and low density lipoprotein (LDL) levels in 4 (11.1%), 5 (13.9%), 14 (38.9%) and 14 (38.9%) patients, respectively. High density lipoprotein (HDL) levels were found to be low in 7 (19.4%) psoriatic patients. There was no anemia in the control group. ESR was high in 5% of cases, whereas high levels were also observed in TG (5%), cholesterol (35%), and LDL (35%). HDL levels were normal in all control cases. Chest radiograms were normal for both groups. Electrocardiographies were pathologic in three patients. One of them had P pulmonale and early repolarization at precordial derivations; the second had a 2 mm Q-wave at DII, DIII and aVF; the third had negativity of T at DI, aVL, V5-6 and an intraventricular conduction disorder. In the control group, electrocardiography was pathologic in one person. He had an absence of R at V1-2 and rS at DIII and aVF. EF values and systolic functions with echocardiography were normal for all cases. Diastolic dysfunction was determined in 15 (41.7%) patients, but in the control group it was seen in 5 (25%) persons. Ischemia was not seen in the electrocardiography and exercise tests in the patient group, but it was seen in one case (5%) in the control group. In the patient group, exercise times ranged between 2.34 and 14.59 minutes. Mean exercise time (MET) values were calculated for determining exercise performance. MET values varied from 4.6 to 17.2 minutes in the patient group and were normal in all patients. MET values were also normal in control cases. Both cardiac and exercise capacities were adequate in all cases. A hypertensive answer to exercise was seen in 14 (11.1%) psoriatic patients, but only in 1 (5%) control case.

Psoriasis is a disorder that is characterized by abnormal proliferation and regeneration of keratinocytes, acute and chronic inflammation and microangiopathic changes. Because of these microangiopathic changes, there are pathologic findings and complications at internal organs, causing cardiovascular disorders and variations in lipid metabolism. Altered renin-angiotensin system activity and increased endothelin levels disturb circulation in psoriatic patients, so that cardiovascular disorders may occur. Ena et al reported that the prevalence of hypertension, cardiovascular disorders and diabetes mellitus increased in psoriasis. Also, they found high cholesterol and triglyceride levels and low HDL levels. Seçkin et al attributed increased atherosclerosis risk to changes in lipid and lipoprotein composition in psoriatic patients and determined that lipoprotein (a) levels were increased in psoriasis, depending on the severity of the disease. Cardin et al found elevated blood cholesterol in children with psoriasis, as in adult subjects with psoriasis. Pietrzak et al demonstrated a statistically significant decrease in HDL cholesterol concentration and a statistically significant increase in triglyceride concentration in psoriatic patients. In our study, we found that 13.9% of our patients had high TG levels, 38.9% had high cholesterol, 38.9% had raised LDL levels, and 19.4% had low HDL levels. Low HDL levels were significant (P<0.05), whereas the differences between the TG, LDL and cholesterol levels in the two groups were not statistically significant (P>0.05). There was no correlation between lipid levels and PASI scores of psoriatic patients. The differences in CBC, ESR, urine analysis, electrocardiography and echocardiography findings were statistically insignificant (P>0.05).

Torok et al reported cardiovascular complications in 18 of 137 psoriasis patients in their study (3 myocardial infarction, 5 angina pectoris, 3 deep vein thrombosis, 6 superficial thrombophlebitis, and 1 sudden death). They proposed that psoriasis was not a predisposing factor for cardiovascular complications except for psoriatic arthritis. In our study, we found no ischemic findings in the patient group. Systolic functions and exercise capacities were adequate in all cases. According to echocardiography, there was diastolic dysfunction in 41.7% of patients. Although the electrocardiographic and echocardiographic differences were not significant between the two groups, diastolic dysfunction and a hypertensive answer to exercise were prominent in the patient group (41.7% versus 25%).

As a result, we want to draw attention to the low HDL levels and diastolic dysfunction in psoriatic patients in our study. Our data suggest that psoriasis patients must be considered as a group at risk for cardiovascular disease. Thus, regular cardiological follow-ups must be performed in psoriatic patients in order to eliminate the cardiovascular risk factors.
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