

An evaluation of hemoglobin and hematocrit levels among the patients with skin cancer and healthy individuals

[Cilt kanserli hastalardaki hemoglobin ve hematokrit seviyesinin sağlıklı kişilerle karşılaştırılması]

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ABSTRACT

Objective: Skin cancer, which is the most common form of all neoplasms worldwide. Most of patients with cancer may experience several hematological problems, low hemoglobin levels particularly. Although the prognosis of skin cancer is good, it is still unknown that whether skin cancer has an effect on blood parameters. In this study, we aimed to investigate possible differences in hemoglobin levels of patients with skin cancer and healthy individuals.

Methods: We retrospectively analyzed medical data of 538 patients with skin cancer and 227 healthy individuals who presented to Check-Up Outpatient Clinic between January 2005 and January 2013. Baseline hemoglobin and hematocrit levels in patients with skin cancer were recorded. Comparison was based on t-test, ANOVA and Chi-square.

Results: We observed a significant difference in hemoglobin and hematocrit levels between the groups ($p<0.001$).

Conclusion: We measured hemoglobin and hematocrit levels were found to be within normal range although we found a significant difference in hemoglobin and hematocrit levels among the patients with skin cancer and healthy individuals.

Key Words: Skin cancer, healthy, hemoglobin

Conflict of Interest: Authors do not have any conflict of interest.

ÖZET

Amaç: Cilt kanseri dünyada en sık görülen tümördür. Kanser hastalarında birçok hematolojik sorunların olduğu bilinmektedir. Hematolojik parametrelerle ilgili olarak hemoglobin düşüklüğü birçok kanserde görülmektedir. Her ne kadar cilt kanserinin prognozu iyi olsa da diğer kanserler gibi kan parametrelerinde değişiklik yapıp yapmadığı bilinmemektedir. Bu çalışmanın amacı, cilt kanserli hastalar ile sağlıklı kişilerin hemoglobin değerleri arasında bir fark olup olmadığı araştırıldı.

Metod: Ocak 2005-2013 yılları arasında merkezimizde teşhis ve tedavileri yapılan 538'i cilt kanserli hastaların ve check up polikliniğine başvuran 227 sağlıklı kişilerin verileri retrospektif olarak tarandı. Cilt kanserli olgulardaki kan örnekleri ameliyat olmadan hemen önce bakılan hemogram ve hematokrit değerleri dikkate alındı. Her iki grubun sonuçlarının karşılaştırılmasında t-testi, ANOVA ve ki-kare testi kullanıldı.

Bulgular: Cilt kanserli hastalar, sağlıklı bireylerden oluşan grupla karşılaştırıldığında hemogram ve hematokrit değerleri arasında anlamlı farklılık saptandı ($p<0.001$).

Sonuç: Çalışmamızda cilt kanserli hastalar ile sağlıklı kişiler arasında hemoglobin ve hematokrit değerleri arasında farklılık olmasına rağmen, ölçülen değerler normal sınırlarda bulundu.

Anahtar Kelimeler: Cilt kanseri, sağlıklı kişiler, hemoglobin

Çıkar Çatışması: Yazarların çıkar çatışması bulunmamaktadır.

Skin cancer, which is the most common form of all neoplasms worldwide, is a serious health condition with an increasing incidence [1]. However, we have limited statistical data on the accurate incidence of the disease due to the lack of a comprehensive registry system in Turkey. Diagnosis is typically based on physical examination and histopathological analysis. The incidences of basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and malignant melanoma (MM) can be ranked in descending order. The prognosis is excellent in BCC, while MM is the most aggressive type of skin cancer [2,3].

It is obvious that cancer has effects on peripheral blood cells (erythrocytes, leukocytes, platelets). However, the cause of these alterations isn't fully elucidated. Anemia, seen in 30-90% of patients with cancer, is characterized by decreased hemoglobin concentration, decreased number of red blood cells and decreased packed cell volume. National Cancer Institute suggests hemoglobin level as 12-16 g/dL for women and 14-16 g/dL for men [4]. The pathogenesis of anemia resulted from cancer is unclear. However, it is suggested that cytokines such as interleukin-1, interferon- γ , or tumor necrosis factor may have role in the cancer-related anemia. Increased levels of these cytokines decrease differentiation of precursor cells in bone marrow and affect normal iron use [5]. To best of our knowledge, there is no study in the literature, assessing anemia in patients with skin cancer. In this study, we aimed to investigate potential differences in hemoglobin levels of patients with skin cancer and healthy individuals.

Between January 2005 and January 2013, we retrospectively analyzed medical data of 538 patients with skin cancer including 366 with BCC and 172 with SCC. The control group consisted of 227 healthy individuals who presented to Check-Up Outpatient Clinic. Baseline hemoglobin and hematocrit levels in patients with skin cancer were recorded. Comparison was based on t-test, ANOVA and Chi-square test.

Hemoglobin and hematocrit levels were measured as 13.86 ± 1.8 g/dL and $41.5 \pm 5.3\%$ in BCC group, 13.69 ± 2.0 g/dL and $41.38 \pm 5.8\%$ in SCC group, and 13.27 ± 1.9 g/dL and $39.9 \pm 5.9\%$ in the control group, respectively. When patients with BCC were compared to healthy controls, a significant difference was detected in hemoglobin and hematocrit values ($p < 0.001$).

It is well-known that several hematological problems in patients with cancer. In hematological parameters, decreased hemoglobin level is observed in several cancers. In patients with cancer, anemia can be caused by several factors including cancer itself, cancer therapy, advanced age, low hemoglobin levels before treatment and comorbid diseases. It is important to recognize and prevent anemia in patients with cancer as it is most common complication in cancer and cancer therapy. Otherwise, it cannot only affect quality of life but also it can impede management of the patient [4-6]. In previous studies, it has been reported that decreased hemoglobin values are associated to poorer survival in several solid cancers including lung, stomach, rectum cancers [5-7]. Although skin cancer has good prognosis, it is unclear whether it alters blood parameters as in other cancer types. In our study, it was found that hemoglobin and hematocrit values were higher in BCC group when compared to healthy controls. Hemoglobin and hematocrit values were higher in patients with cancer, although they were within normal range. It is thought that this difference can be due to individual factors.

In conclusion, measured hemoglobin and hematocrit levels were found to be within normal range, although there were differences in hemoglobin and hematocrit values between patients with skin cancers and healthy individuals.

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