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Effect of One Period of Selective Aerobic Training on Serum Iron, Serum Ferritin and Transferrin of Girls

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Abstract: Effect of one period of selective aerobic training on serum, Iron, serum ferritin andtransferrin of girls The aim of this research is finding of the effect of eight weeks selective training on hematological indexes of girls. 13 girls of university students were selected none randomly. In this research effect of eight weeks aerobic training which including 40 minutes running twice a week with%60 to%65 reserve heart rate on serum Iron, serum ferritin andtransferrin were examined. Subjects performed eight weeks trainings. Automatic machines for measuring of iron and ferritin IRMA kit for measuring of ferritin concentration were used. It was seen significant decrease in serum Iron, serum ferritin transferrin in girls (P%5).In final, data were analyzed by t student method. These results were obtained: eight weeks aerobic training caused decrease in serum iron, serum ferritin andtransferrin concentration and serum ferritin in girls (p%5).

Key words: Hematological · Index · Heart reserve · Running

INTRODUCTION

Blood is a tissue which has a lot of elementsand compounds.These elements and compounds are affected by internal body factors and external environment. A lot of observations show that blood compounds change by exercise [1]. Exercise leads to some changes in body for example in erytrosyst system of environmental blood. Body compounds change by exercise. Some of These changes cause anemia. The reason of anemia is iron deficiency. The process which empties iron reserves may occur very fast and depends on balance between received iron and iron needs. Observations show that iron receipt is not enough in a lot of women which exercise ordinary [2]. Although significant progresses are done in a lot of exercise and hematology fields, but long period effect of aerobic trainings on hematology was examined a little and yet effect of exercise on hematology is not clear completelyand there are a lot of contradictions. The researcher's search show the blood tissue change by exercise training.Therefore, one of the questions which always repeat is this: what changes cause a period of aerobic training in the blood hematological index especially in girls?

MATERIALS AND METHODS

16 girls (18 to 22 years) were selected none randomly from university students. Three of samples refrained from attending in examinations. The samples didn't have any disease. They weren't smokers. Standard measure of hematological factors of samples was these: iron 37 to 165microgram in deciliter. Ferritin 7/4 to 73 nano grams in milliliter. Transferrin 240 milligram in deciliter.The samples are asked to go to laboratory in 9 clocks at morning for performed blood examination. Getting blood sampling was performed one week before exercise training and one week after exercise training.Getting blood sampling was performed in seventh day of girls' follicular period. The aerobic t raining was eight weeks and twice in each week and each session was 40 minutes running with%65 of reserve heart impulse for women.Ferritin method was used for examine of iron and for measuring of ferritin serum, Ferritin IRMA kit was used. Raw information was considered by using of descriptive statistics methods which conclude of tables, means and standard deviation. Also deduction statistic method which was concluded student of associate groups was considered. Level (%5) was used for refusing or accepting of hypothesis.

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Table 1: Effect of aerobic training on hematological indexes of girls

N = 13 before		After training	Value	p	Training
Iron serum	mean standard deviation	19/51 88/84	75/92 19/38	2/612	%23
Transferrin concentration Percent	mean + Standard deviation	7/93 27/38	7/61 24/39	2/510	%26
Ferritin serum	mean + standard deviation	7/63 24	9/36 18/76	2/764	%19

RESULTS AND DISCUSSION

Table 1 has shown + value, free degree and p value of blood samples in related to hematological indexes such as iron serum, transferrin percentage, ferritin serum.As is shown in table 1, selective aerobic training causes significant decrease in iron serum, transferrin percentage and ferritin serum of girls.This research is performed in under maximal of aerobic training.Therefore the result of this research will compare with similar researches which performed under maximal aerobic training.

The result of this research agrees with some of the researches [4]. Probably reason of decreasing of RBC andconsequently decreasing of HB is due to decreasing of iron serum. When the level of iron serum is decreased, body will use from transferrin as reserving iron which can be probably reason of decreasing of transferring concentration percent. Decreasing of serum ferritin may be excreting iron in training and may be non-substitute from nutrition. The reason of difference of results of this research with other researches may be the variables such as sex, age, training intensity, training period length, samples diffusion from point of view of social situation, economic nutrition. In sum of, one period of aerobic training cause decrease in serum iron, transferrin concentration percent and serum ferritin in girls.If exercise is performed somehow body contact with rigid substances like running, then Hb and enzymes will produce more. In result red blood cell will analyze faster. From other side, Hb, RBC, transferrin and ferritin serum level is dependent to existence. It seems decreasing of plasma volume is a useful mechanism in related to agreement with endurance situations. In normal situation also decreasing in serum iron, transferrin concentration percent and ferritin shows, but this is because of blood concentration. Opposite of existence information, there is one point that is not exactly answer to it: what volume of exercise training intensity can have the best effect on hematological indexes in increasing of probably changes in hematological indexes in response to body training and exercise.

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