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Different gradient altitude training on the impact of RET、 EPO and RBC

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Objective This study is based on the regional characteristics of Guizhou Province, athletes living in the subplateau and training in the plateau-plain and the high plateau-plain. The effects of altitude training on hematological indexes of EPO、RBC and RET. To evaluate the two training modes is more beneficial to endurance runners and explore which one is better. To provide scientific reference for sports training practice.

Methods Twenty male endurance runners and divided into two groups (all living on subplateau) : plateau-plain group and high plateau-plain. One group reached to the 1900 m plateau and the other one reached to the 2900 m plateau, training 3 weeks ; The two groups then reached to the plain for 3 weeks of training. Finally arrived at the sub-plateau for performance testing. Using multivariate analysis of variance to test significant differences between groups, The data are represented by the standard deviation of the average () . $P < 0.05$ is a significant difference, $P < 0.01$ is a very significant difference.

Results 1 EPO

There is no significant difference in EPO between 1900m plateau and 2900m plateau athletes. at the end of plain the amplitude of elevation and basic value of high altitude group is more than that of high altitude group.

2 RBC

Comparison of RBC between plateau group and high altitude group during the period of plateau, there is significant difference at the end of plateau ($P = 0.049 < 0.05$), and there is a significant difference between the two groups at the end of plateau training ($P = 0.043 < 0.05$). The change trend of the two groups is the same, but the increasing is more than the high plateau group, and the decreasing is relatively less during the plain period, and it showed an upward trend at the end of the plain period.

3 Ret

There is significant difference in RET between the two groups ($P = 0.018 < 0.05$) when the endurance runners arrived at the plateau at the first week. RET at 2900m altitude is significantly higher than that at 1900m altitude, and at the end of the plateau, the increase of RET in the high plateau group is still higher than that in the plateau group. There is no significant difference between the two groups during the plain period.

Conclusions The influence of altitude training on the EPO of the SUBPlateau athletes is more profound than that of the plateau group. During the first week of plateau, EPO decreased significantly, but it fluctuated up and down later, and the two groups are on upward trend during the period of plain. However, the percentage of elevation in the plateau is higher in the high altitude group than in the high altitude group.

After plateau training, chose 2900m plateau for training, and the hematopoietic function of bone marrow is improve greatly, nutrition supplement should be paid attention to after plateau training. To prevent the effect of RBC reduction.