THE EFFECT OF HIGH-LOAD LONG-TERM EXERCISE ON THE SALIVA QUANTITY AND QUALITY OF ATHLETES

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يوم البحـــث العلمـــي السنـــوي السادس لـكلية طب الأسنـــان بجامعـــة أم القرى
The 6th Annual Research Day of Umm Al-Qura University College of Dentistry

INTRODUCTION

Little attention has been directed towards identifying the relationship between long-term high-load exercise athletes and their oral health, dental hard tissue wear and saliva quantity and quality which has to be in normal value in order to maintain a good oral health condition. The relation between the systemic condition and the oral health could be an indicator for the general health.

OBJECTIVES

This study was carried out to compare the oral health condition (the saliva pH, salivary flow rate, wear, DMFS) and the general health vital signs (heart rate, systolic and diastolic blood pressure, in addition to pulse pressure) of the high-load long-term exercise athletes compared to normal healthy individuals.

METHODOLOGY

A case control study conducted in Makkah, KSA. A sample size of 15 high-load long-term exercise athletes for group 1 (G1) and 15 non athletes healthy individuals for group 2 (G2) (control group). Inclusive criteria: male participants without any systemic disease aged from 18 to 40 years old. Non-smokers and they were exercising for more than 5 years. Questionnaire was prepared and filled by the participants including their medical and dental history, eating and drinking habits, oral hygiene habits, period of years they have trained and training hours per week. Oral examination was carried out to examine heart rate, blood pressure, DMFS, and presence of wear lesions. Upper/lower incisors and upper/lower molars were examined for the presence of wear legions as (occlusal attrition facets and erosive wear cupping lesions). The participants were fully informed of the process of the saliva collection, instructed about saliva collection technique which was spitting method (4). After collection, the amount of saliva was measured to an accuracy of 0.1 ml and flow rate (ml/min) was determined for each saliva sample. Data of both groups was collected and statistical analysis has been performed by SPSS using SPSS for Windows (version 22, IBM, Corp., Chicago, IL, USA) employing t-test ($P < 0.05$).

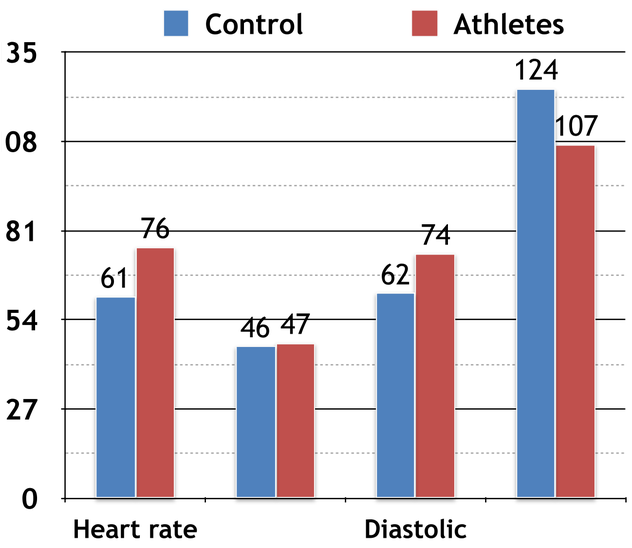
RESULT

The results showed that the systemic condition, as indicated by vital signs, showed a highly significant difference between the two groups in the heart rate, systolic blood pressure and diastolic blood pressure, while the pulse pressure was insignificant (table1).

Mean while, there was a significant differences between the two groups in all variables except for the pulse pressure which showed insignificant difference between the two groups. Saliva tests result, wear and DMFT are represented in (table2).

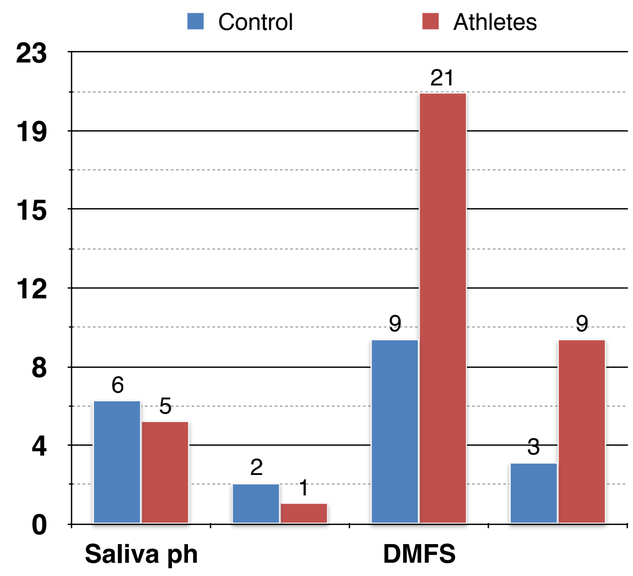
	G1	G2
Heart rate	61.27 ± 8.146	76.20 ± 9.704
Diastolic BP	62 ± 5.18	76.8 ± 8.48
Systolic BP	108.6 ± 10.81	124.2± 9.4
Pulse pressure	46.6 ± 7	47.4 ± 8.9

Table 1



	G1	G2
pH	5.83 ± 0.40	6.3 ± 0.50
Flow rate	1.65ml/min ± 0.4	2.75ml/min ± 0.8
DMFS	21 ± 15.152	9.53 ± 9.378
Wear	9	3

Table 2



CONCLUSION

In conclusion, this study showed that the high-load long-term exercises has an effects on the athletes' saliva, that the saliva pH decreased to approach the normal enamel demineralization pH, more over, saliva flow rate decrease might explain the high score of DMFS of the athletes' group. The results also showed a significant differences in the vital signs of the athletes which need more research to figure out the effects of this kind of exercise on the systemic heath.

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