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OPEN PEER REVIEW

Effect of Eight Weeks of Aerobic Interval Training on the Serum Concentrations of Alkaline Phosphatase, Osteocalcin and Parathyroid Hormone in Middle-aged Men

Mohammad Mosaferi Ziaaldini, Mehrdad Fathei, Keyvan Hejazi

SUBMITTED	REVISED	ACCEPTED	DOI
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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

4 comments · 17 Nov 2020 – 24 Nov 2020

Referee 1 Reviewer

MAJOR REVISION 17 Nov 2020

This is a well-written article. My comments and concerns are as follows:

1. The authors have to use consistent units of measurement throughout the manuscript. For example, "ccs" or "mL"?
2. Please reference each sentence appropriately. For example, there is no reference for "Fracture caused by 39 osteoporosis occurs in 60% of women and 30% of men over 60 years".
3. Did the authors plot a standard curve when performing ELISA assays? Please explain.
4. The authors should use at least five updated references, from 2017 to 2020.
5. In Table 1, please mention the p-value for the difference between the studied groups.

Abdulkerim Kasim Baltaci Reviewer

MAJOR REVISION 22 Nov 2020

Dear Editor
I am writing about the paper entitled “The Effect of Eight Weeks of Aerobic Interval Exercise on Serum Concentrations of Alkaline Phosphatase, Osteocalcin and Parathyroid Hormone in Middle-Aged Men”. The paper was evaluated, and my report is as follows.
Best regards,

Report:
The aim of this presented study was to evaluate the effect of eight weeks of aerobic interval exercise on serum concentrations of alkaline phosphatase, osteocalcin and parathyroid hormone in middle-aged men.
The presented article is of moderate quality, with limited originality.
First of all, there are important questions in the article that the authors must answer.
1. The authors present known physiological information in the introduction. However, the authors should focus on information from the literature on the subject.
Therefore, the introduction should be rewritten.
2. The subjects participating in the study are middle-aged and overweight. So is one of the aims of this study to control body weight with exercise? If so, the authors should change the title of the study and rewrite the purpose part.
3. The subjects participating in the study are between the ages of 40 and 47. Do these subjects have osteoporosis?
4. If the subjects do not have osteoporosis, what is the practical benefit of the study?
This article cannot be accepted in its current form. After the suggested revisions, it can be reviewed.

Associate Editor

MAJOR REVISION 24 Nov 2020

Based on the reviewers’ comments and my reading of this manuscript, it needs major revision and English language editing. The authors must revise it precisely and reply to the comments point by point.

Editor-in-Chief

MAJOR REVISION 24 Nov 2020

Based on the reviewers' comments and my reading, this manuscript needs major revision and English language editing. The authors must revise it precisely and reply to the comments point by point.

2

Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Reviewers' Comments:

Reviewer 1:
This is a well-written article. my comments and concerns are as follows;

1. The authors have to use consistent units of measurement throughout the manuscript. For example, "ccs" or "mL"?

In response to the respected reviewer: The requested corrections were made throughout the text of the article. Thank you.

2. Please reference each sentence appropriately. For example, there is no reference for "Fracture caused by 39 osteoporosis occurs in 60% of women and 30% of men over 60 years".

In response to the respected reviewer: The sentence in question was corrected in the Introduction section. Thank you.

3. Did the authors plot a standard curve when performing ELISA assays? Please explain.

In response to the respected reviewer: Information about the standard curve of the ELISA method was added to the Methods section. Thank you.

4. The authors should use at least five up-dated references, from 2017 to 2020.

In response to the respected reviewer: The sentence in question was corrected in the References section. Thank you.

5. In Table 1, please mention the p-value for the difference between the studied groups.

In response to the respected reviewer: In the first table, the between-group difference before the exercise intervention period was reported. Thank you.

Reviewer 2:
-
Reviewer 3:
Dear Editor
I am writing about paper entitled as “The Effect of Eight Weeks of Aerobic Interval Exercise on Serum Concentrations of Alkaline Phosphatase, Osteocalcin and Parathyroid Hormone in Middle-Aged Men”. Paper was evaluated and my report as following.
Best regards,
Report:
The aim of this presented study was to evaluate the effect of eight weeks of aerobic interval

exercise on serum concentrations of alkaline phosphatase, osteocalcin and parathyroid hormone in middle-aged men.
The presented article is of moderate quality, limited in originalty. First of all, there are important questions in the article that authors must answer

1. The authors present known physiological information in the introduction. Whereas, authors should focus on literature information on the subject.
Therefore, the introduction should be rewritten.

In response to the respected reviewer: Appropriate background literature was cited in the Introduction section of the article. Thank you.

2. The subjects participating in the study are middle-aged and overweight. So is one of the aims of this study to control body weight with exercise? If so, the authors should change the title of the study and rewrite the purpose part.

In response to the respected reviewer: The main focus of the present study is the effect of eight weeks of aerobic interval training on the levels of bone markers in inactive men, and the topic of overweight has not been addressed in the Introduction and Discussion sections of the article. Thank you.

3. The subjects participating in the study are between the ages of 40-47. Do these subjects have osteoporosis?

In response to the respected reviewer: Given the title of the article, which examined the effect of eight weeks of aerobic interval training on some bone biomarkers in middle-aged men, the researcher does not seek to examine osteoporosis in these subjects, and the aim of this research is to answer the question of whether or not performing this type of training can affect these indices. If a positive result is obtained in the percentage changes of the variables in question, it could possibly be suggested that this type of training can also be used in future research to prevent the occurrence of osteoporosis. Thank you.

4. If osteoporosis is not available, what is the practical benefit of the study?
This article cannot be accepted in its current form. After suggested revisions, it can be reviewed.

In response to the respected reviewer: In view of the response to the previous comment, additional explanations were given there. Thank you.

With many thanks

2 Revision 1

2 comments · 16 Dec 2020 – 20 Dec 2020

Referee 2 Reviewer

MINOR REVISION 16 Dec 2020

Dear Author

The manuscript could be accepted as an original article for publication after Minor revision as follows:

Comments:
1. The English language, in general, is not good. Please edit the whole manuscript for correct English structure.
2. In the introductory part, the review of studies and the statement of the problem are fragmentary and irrelevant. The studies do not correspond to the purpose of the study and need to be rewritten.

3. The epidemiology of changes in bone biomarkers should be mentioned in the introduction.

4. The need for this research is not well stated in the introduction.

5. Phrases like “minutes” are mentioned repeatedly in the text. It is better to write them out in full first and then use abbreviations.

6. There are extra spaces in the text.

7. The possible mechanisms of the effect of periodic training on bone biomarkers are discussed in the discussion.

8. Mention the method for determining the maximum oxygen consumption in the materials and methods section.

Editor-in-Chief

MINOR REVISION 20 Dec 2020

Based on the reviewers’ and AE’s comments about this manuscript, revisions were made, but it still needs minor revision. Precise revision and a point-by-point reply to the reviewers’ comments are necessary.

3

Revision 2

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Reviewers' Comments:

Reviewer 1:

Dear Author

The manuscript could be accepted as an original article for publication after Minor revision as follows:

Comments:
1. The English language, in general, is not good. Please edit the whole manuscript for English structure.

In response to the respected reviewer: The requested changes were applied throughout the article. Thank you.

2. In the introductory part, reviewing studies and expressing the problem is fragmentary and irrelevant. The studies do not correspond to the purpose of the study and need to be rewritten.

In response to the respected reviewer: The requested changes were applied in the Introduction of the article. Thank you.

3. The epidemiology of changes in bone biomarkers should be mentioned in the introduction.

In response to the respected reviewer: The requested changes were applied in the Introduction of the article. Thank you.

4. The need for this research is not well stated in the introduction.

In response to the respected reviewer: The requested changes were applied in the Introduction of the article. Thank you.

5. Phrases like “minutes” are mentioned repeatedly in the text. It is better to mention it in full first and then as an abbreviation.

In response to the respected reviewer: The requested changes were applied in the article. Thank you.

6. There are extra spaces in the text.

In response to the respected reviewer: The requested changes were applied in the article. Thank you.

7. The possible mechanisms of the effect of periodic training on bone biomarkers are discussed in the discussion.

In response to the respected reviewer: The effect of exercise on the mechanism of .osteocalcin production was applied in the Discussion of the article. Thank you

8. Mention the method for determining the maximum oxygen consumption in the materials and methods section.

In response to the respected reviewer: The method of obtaining maximum oxygen consumption is available in a paragraph in the Methods section of the article. Thank .you

Reviewer 2:
All requested comments were made correctly by the authors.
It is now ready for acceptance.

3 Revision 2

3 comments · 4 Jan 2021 – 18 Jan 2021

Ebrahim Norouzi Reviewer

REJECT 4 Jan 2021

Dear Author,
The manuscript entitled "The Effect of Eight Weeks of Aerobic Interval Training on Serum Concentrations of Alkaline Phosphatase, Osteocalcin and Parathyroid Hormone in Middle-Aged Men" presents a topic that may interest readers of the "Gene, Cell and Tissue Panel" journal. 24 male participants with osteoporosis were divided into two groups: control (n=12) and aerobic interval training (n=12), for 8 weeks. Blood samples were analyzed for concentrations of calcium, phosphorus, alkaline phosphatase, osteocalcin, and parathyroid hormone before and after completion of the intervention. The results showed that maximum oxygen consumption and levels of calcium, phosphorus, alkaline phosphatase, osteocalcin, and parathyroid hormone increased only in the aerobic interval training group. Although I consider the topic interesting, the claims based on the results of the present study are very strong and are not consistent with the small sample size and research methods. Moreover, I would like to make some comments about the present manuscript below:

The quality of English writing is NOT good, and it is really difficult for me to understand the text. There are a number of grammatical errors in the manuscript. The authors may wish to have the manuscript proofread for clarity by a native English speaker.

Keywords
1. The keywords are few and very similar. Please revise them. It is recommended to use MeSH (Medical Subject Headings) to select keywords.

Introduction
1. In the introduction, the authors need to be more explicit about the justification for the review. Also, why is a study of this topic essential? Why osteoporosis and not another disease?
2. The main purpose of the study was to examine the effects of the sport-based intervention on serum concentrations of alkaline phosphatase, osteocalcin, and parathyroid hormone. However, when you read the introduction, it is not clear what the study is about!
3. Page 2, to be honest, the introduction is not comprehensive. I think you can revise the introduction as follows: 1) define osteoporosis, 2) define bone resorption, 3) mention the effects of osteoporosis and its negative effects on general health, 4) describe the prevalence of osteoporosis in the general population and in middle-aged men in particular, 5) describe interventions to improve bone health in people with osteoporosis, 6) then describe the novelty of your study. This might concern the physiological mechanism of a sport-based intervention; for example, your study may be aimed at objective examination, unlike previous studies that focused only on subjective measures.
4. I did not see the review article in the introduction. It would be helpful if you mentioned the review article.

Method
1. You have used "available and purposive sampling methods"! This type of sampling method is biased.
2. Was a clinical trial code received? If yes, mention its number.
3. Please provide details of the implementation method. For example, what was the timing of each assessment?
4. Please provide the complete criteria for inclusion and exclusion of participants. Did the participants have osteoporosis?

Results

1. In my opinion, the statistical method is not correct. The use of two dependent t-tests increases the error. It would be better to use ANOVA with repeated measures!

Discussion

1. The discussion is very vague. Could the authors please lengthen this section and add some thoughts to ensure that the discussion adds novelty to the manuscript?

Referee 2 Reviewer

MAJOR REVISION 5 Jan 2021

The manuscript has been uploaded with track changes. Typing and writing errors can still be seen in the newly uploaded file. The manuscript cannot be published in the uploaded form.

Editor-in-Chief

MAJOR REVISION 18 Jan 2021

Based on the reviewers' and AE's comments, this manuscript needs major revision, and a point-by-point reply to the comments is required.

4

Revision 3

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Reviewers' Comments:

Reviewer 1:
The manuscript has been uploaded with track changes. Typing and writing errors can still be seen in the newly uploaded file. The manuscript cannot be published in the uploaded form.

In response to the respected reviewer: The requested corrections were applied in the .text of the article. Thank you

Reviewer 2:
Dear Author,
The manuscript entitled "The Effect of Eight Weeks of Aerobic Interval Training on Serum Concentrations of Alkaline Phosphatase, Osteocalcin and Parathyroid Hormone in Middle-Aged Men" presents a topic that may interest readers of the "Gene, Cell and Tissue Panel" journal. 24 male with osteoporosis as participants were divided to two groups, including control (n=12) and aerobic interval training (n=12) for 8 weeks. Blood samples were analyzed for concentrations of calcium, phosphorus, alkaline phosphatase, osteocalcin and parathyroid hormone before and after completion of intervention. The results showed that maximum oxygen consumption, amounts of calcium, phosphorus, alkaline phosphatase, osteocalcin, parathyroid hormone increased only in the aerobic interval training group.

Although I consider an interesting topic, however, results of present study have very strong claim which are not consistent with this small sample number and research methods. Moreover, I would like to make some comments about the present manuscript below:

The quality of English writing is NOT good and it is really difficult for me to understand the text. There are a number of grammatical errors in the manuscript. The authors may wish to have the manuscript proofread for clarity by a native English speaker.

In response to the respected reviewer: Grammatical points were checked throughout .the text of the article. Thank you

Keywords
1. The keywords are few and very similar. Please revise and It is recommended to use MeSH (Medical Subject Headings) to select keywords.

In response to the respected reviewer: The requested corrections were applied in the .Abstract section of the article. Thank you

Introduction
1. In the introduction, the authors need to be more explicit about the real justifications of the review. Also, why is essential a study of this topic? Why the osteoporosis and not other disease?
2. The main purpose of the study was to examine the sport based intervention on

serum concentrations of alkaline phosphatase, osteocalcin and parathyroid hormone. However, when you read the introduction it is not clear the study is about!
3. Page 2, to be honest, the introduction is not comprehensive. I think you can do revise the introduction as follows 1) define osteoporosis, 2) define bone resorption 3) mention effects of osteoporosis and its negative effects on general health, 4) prevalence of osteoporosis in general population and in mid-aged men in particular, 5) interventions to improve bone health in people with osteoporosis, 6) then novelty of your study; It might be that physiological mechanism of sport based intervention and for example your study is aimed at objective examination regardless previous studies that focused only on subjective measure.
4. I did not see the review article in the introduction. it would be helpful if you mentioned review article.

In response to the respected reviewer: The Introduction of the article was rewritten based on the guidance provided. Thank you.

Method

1. you have used "available and purposive sampling methods"! this type of the sampling method is biased.

In response to the respected reviewer: To homogenize the research samples, the researcher selected the samples based on inclusion and exclusion criteria. However, the samples were randomly assigned to the experimental and control groups. Thank you.

2. Clinical trial code received? If yes, mention its number.

In response to the respected reviewer: A clinical trial code was not obtained for this project, but the work was approved by the ethics committee. Code R.IAU.BOJNOURD.REC.2015.1224

3. Please provide details of the implementation method. For example, what was the time of each assessments?

In response to the respected reviewer: The requested corrections were applied in the Methods section. Thank you.

4. Please mention the criteria for inclusion and exclusion of participants completely. had participants osteoporosis?

In response to the respected reviewer: The requested corrections were stated in the Methods section. The subjects participating in the present study did not have osteoporosis. Thank you.

Results
1. in my opinion, the statistical method is not correct. The use of two dependent t-tests increases the error. It would better to use ANOVA with repeated measure!

In response to the respected reviewer: The requested corrections were applied in the .Methods and Results sections. Thank you

Discussion
1. the discussion is very vague, please could the authors lengthen this section and add some thoughts to ensure the discussion is added novelty to the manuscript.

In response to the respected reviewer: The requested corrections were applied in the .Discussion section of the article. Thank you

4 Revision 3

2 comments · 6 Feb 2021 – 7 Feb 2021

Referee 3 Reviewer

ACCEPT 6 Feb 2021

In my opinion, this study is a quasi-experimental study and is not considered a clinical trial.

Editor-in-Chief

ACCEPT 7 Feb 2021

Revisions were done well. Thus, this manuscript can be accepted for publication in GCT.