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OPEN PEER REVIEW

Effectiveness of TECAR Therapy on Clinical Symptoms and Neurophysiological Parameters of Patients with Carpal Tunnel Syndrome: A Randomized Clinical Trial

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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 · 24 Dec 2022 – 10 Jan 2023

Referee 1 Reviewer

MAJOR REVISION 24 Dec 2022

In the definition of the disease, the symptoms are repeated; repetition is not allowed.
“There are three types of diathermy: ultrasound, shortwave, and longwave diathermy”—please check this again.
For Gap, instead of explaining the TECAR device, the author should explain the mechanism of wave effects and describe its advantages and disadvantages compared to other treatment methods.
To determine the sample size, please mention the mean, deviation, and reference.
The device model, manufacturing company, and manufacturing country should be mentioned, respectively.
Abbreviations must be written in full the first time they are used: " medium CET ".
The NCV method should be described fully and in detail.
Please rewrite based on CONSORT 2010.
Which assumption and which variable is each statistical test used to evaluate?
The first paragraph of the results section is repetitive and should be deleted.
It is better to repeat the results once. The data is given both in the table and in the text.
The differences between the two groups in the Compression test and Phalen test at baseline are significant. Why?
Please check the p-values in the nerve conduction study table; significant values are not consistent with changes in the data.
Except for Figure 1, the rest of the figures should be removed.
Please correct the limitations.
Please rewrite your results in the abstract.

Referee 2 Reviewer

MAJOR REVISION 8 Jan 2023

This study investigated the effects of TECAR on CTS.
The second group is not mentioned in the methods section of the abstract. The intervention lasted 4 weeks, but the evaluations were done before and after 8 weeks. Explain the reason for this heterogeneity.
Keywords should be selected based on MeSH.
Introduction:
The English language of the text needs to be edited.
The topics of reference 3 and reference 4 overlap in lines 5-8; it is suggested that these topics be merged.
In the sentences related to reference number 8, since CTS is subjected to diagnostic tests as "a conduction block and entrapment neuropathy", it is better to remove "myelin and axonal loss" from the last sentence and replace it with the mentioned items.
It is recommended that the contents of the introduction section be presented in separate paragraphs according to the different areas.
Method:
State the diagnostic criteria for mild and moderate CTS based on NCV.
Please provide the reference for the inclusion and exclusion criteria.
Was the "Boston Questionnaire score" included in the inclusion criteria?
Please explain this sentence and the method in more detail: "The participants were enrolled using a consecutive sampling method"

The duration of the intervention was 4 weeks, or one month, but the evaluations were done after 2 months. What is the reason for that?
Explain the "reliability" of motor and sensory NCV measurements of the median nerve. The model of the device, the type of electrodes, and the measurement method should also be mentioned. The measured sensory and motor parameters of the median nerve should be stated precisely.
Regarding the statistical analysis, please indicate what each test was used to evaluate.
Findings:
Before the study, only pain was compared between the 2 groups. Please provide information on variables such as NCV and Boston Questionnaire score (each section separately) before the study in the two groups. Was the distribution of mild and moderate severity the same between the 2 intervention groups?
Please specify which outcomes were the primary and secondary outcomes of this research.
Please specify how the "special tests" were scored.

Tables
In Table 1, the grouping should be specified.
According to Table 2, there were many people whose clinical tests were negative before the study. This issue is contrary to the study inclusion criteria.
In Table 2, provide units for the electrodiagnostic variables.
In a table, please report the average differences in the variables along with 95% CI and F-statistics.

Discussion
In this research, pain, function, and electrodiagnostic changes in the median nerve were examined. In the discussion, you should discuss each variable and how TECAR can affect changes in these variables; this discussion is entirely missing.
Do the electrodiagnostic variables change within a month?

Associate Editor

MAJOR REVISION 9 Jan 2023

The article needs major revision.

Editor-in-Chief

MAJOR REVISION 10 Jan 2023

Dear Authors
According to the reviewers' and associate editor's comments, your article needs major revision. When revising your manuscript, please consider all issues mentioned in the reviewers' comments carefully: please outline every change made in response to their comments and submit the required files.

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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.

	Q	R
	Dear reviewer 1 thanks for your valuable comments.	
1	In the abstract, please consider that TECAR is an abbreviation of transfer of energy Capacitive and Resistive.	Thank for your valuable comments. We corrected it.
2	In the abstract section- method please write which type of intervention was done in group 2	We corrected it.
3	In the introduction section, the writing is very ambiguous and there is no Paragraph. Please categorize the data which you give to your audiences.	We checked and corrected.
4	Please insert references for your eligibility criteria in the method section.	corrected it.
5	please Identify the methods apparatus (give the manufacturer's name and address in parentheses) and insert characteristics of the device which is used for NCV. Please Identify precisely the vitamin B used, including generic name(s), dose(s), and route(s) of administration.	We corrected it.
6	In the blinding section, is this study single-blind or double-blind?	Single blind which corrected again in text.
7	In the Statistical analysis, please inform the reader of the exact type of statistical test that you have used for every comparison.	We corrected it. We also assigned each p value associated with the test in the caption of Table 2.
8	Please insert a flowchart diagram for your RCT in the method section.	We have a flowchart (figure 1).
9	It seems that this sentence " In the study of S. Malay and et al. (21) MCID for SSS and FSS in nondiabetic patients after 3 months post carpal release, considered as 0.8 for SSS and 1.25 for FSS. In our study, wrist splint group	Thanks. We kept it in the result section but changed it

	….." isn't belong to the results section.	
10	You should begin with your valuable finding in the discussion section. It's very important.	Thanks, we revised the manuscript according to your comments.
11	In the discussion section:" M. Niajalili and et al. (23) evaluated the effectiveness of TECAR therapy in diabetic patients with peripheral neuropathy. Both groups experienced an improvement in pain management, with the intervention group experiencing greater recovery. " the reader of your manuscript doesn't know the intervention of both groups. Please inform the reader.	We corrected it.
12	In Study limitations, please insert that you had no follow-up assessment.	The need for a long follow-up was mentioned in the limitations section.
13	In the Conclusion please insert the exact type of future study which you can suggest to readers.	Thanks, We add this information in the conclusion part.
	Dear Reviewer 2 thanks for your valuable comments.	
1	The second group is not mentioned in the abstract of the methods section.	We corrected it.
2	The intervention lasted 4 weeks, but the evaluations were done before and after 8 weeks. Explain the reason for this heterogeneity.	It takes a long time to restore the nervous system. Thus, we did not expect to see significant changes in variables immediately after completion. The same was observed in several test samples. So we published the first review two months later. It would be better to conduct the research second review 6 months later, which was not conducted due to the time constraints of the researchers.
3	Keywords should be set based on MeSH.	Yes. Its based on MESH.

4	The English writing language of the text needs to be edited.	The English language has been checked by supervisor teachers and with Grammarly. Again, if there is a case, let us know to correct it. Thank you for your kind attention and valuable comment.
5	The topics of reference 3 and reference 4 overlap in lines 5-8, which is suggested to be merged.	We checked and corrected.
6	In the sentences related to reference number 8, since CTS is subjected to diagnostic tests as "a conduction block and entrapment neuropathy", in the last sentence, it is better to remove "myelin and axonal loss" and replace the mentioned items.	We corrected it.
7	It is recommended that the contents of the introduction section be given in separate paragraphs according to different areas.	Thanks, we revised the manuscript according to your comments.
8	State the diagnostic criteria for mild and moderate CTS based on NCV.	We corrected it.
9	Please mention the reference for inclusion and exclusion criteria	We added the reference.
10	Was the "Boston Questionnaire score" included in the inclusion criteria?	No, the Boston test is used to check symptoms (function and severity) evaluation and is not a diagnostic test. The definitive diagnostic test for CTS is EMG-NCS. And clinical tests may be positive or negative.
11	Please explain more about this sentence and its method: "The participants were enrolled using a consecutive sampling method"	The participants were enrolled using a consecutive sampling method, which is a non-probability approach to recruit all accessible subject.
12	The duration of the intervention was 4 weeks and actually one month, but the evaluations were done after 2 months. What is the reason for that?	It takes a long time to restore the nervous system. Thus, we did not expect to see significant changes in variables immediately after completion. The same was observed in several test samples. So we published the first review two months later. It would be better to conduct the research second review 6 months later, which was not

		conducted due to the time constraints of the researchers.
13	Explain about the "reliability" of motor and sensory NCV measurement of the median nerve. The model of the device, the type of electrodes, and its measurement method should also be mentioned. The measured sensory and motor parameters of the median nerve should be stated precisely.	Thanks, we add this information in the method part.
14	Regarding the statistical analysis, please indicate what subject each test was used to evaluate.	We corrected it. We also assigned each p value associated with the test in the caption of Table 2.
15	Before the study, only the pain between the 2 groups was examined. Please provide information on variables such as NCV and Boston Questionnaire score (each section separately) before the study in two groups	Thanks. In the method section, we described the Boston questionnaire and mentioned the measurement of NCV. In table number two and three, the results before and after the intervention are described separately. Need more information?
16	Has the distribution of mild and moderate severity been the same between the 2 intervention groups?	Yes, its comparison is in table 1
17	Please specify which were the primary and secondary outcomes of this research?	The VAS is primary and others is secondary outcomes of study.
18	Please specify how the "special tests" were scored?	These are the positive and negative tests listed in Table 2.
19	In Table 1, the grouping should be specified.	We corrected it.
20	According to Table 2, there were many people whose clinical tests were negative before the study. This issue is contrary to the study inclusion criteria.	Not all tests are positive for carpal tunnel syndrome. These tests are for screening, and the EMG-NCS test is definitely a diagnostic test. We do not use clinical tests for inclusion.

21	In Table 2 put unit for the electrodiagnostic variables.	Corrected it.
22	In a table, please report the average differences of variables along with 95% CI and F-statistics	Corrected it.
23	In this research, the variables of pain, function, and electrodiagnostic changes of the median nerve have been examined. In the discussion, you should discuss each variable and how Tecar can affect the changes of these variables, which is completely empty.	The available studies on TECAR are very limited, however, they were revised as much as possible. Thanks for value opinion.
24	Do the electrodiagnostic variables change within a month?	We expect that the nerve repair process will continue for a year after the treatment. It is not clear exactly when the parameters start to change, but we usually need more time to see the changes.
	Dear Reviewer 3 thanks for your valuable comments.	
1	In the definition of the disease, the symptoms are repeated, repetition is not allowed	Thank for your valuable comments. We corrected it.
2	“There are three types of diathermy: ultrasound, shortwave, and longwave diathermy” please check it again.	The sentence was deleted.
3	For Gap, instead of explaining about the TECAR device, the author should explain about the mechanism of wave effects and describe its advantages and disadvantages compared to other treatment methods.	This information has been obtained according to the limited articles about Tecar therapy and was searched again and there was no additional information to provide. This study is one of the leading studies in the field of Tecar therapy in neuropathic diseases.
4	To determine the sample size, please mention the mean, deviation and reference.	Thanks, we add this information in the mehod part.
5	The device model, manufacturing	Corrected it.

	company, and manufacturing country should be mentioned respectively.	
6	Abbreviations must be written in full at first time " medium CET ".	Corrected it.
7	NCV Method should be described fully and in details.	Thanks, we revised the manuscript according to your comments.
8	Please rewrite based on consort 2010.	Thanks, we revised the manuscript according to your comments.
9	Each statistical test is used to evaluate which assumption and which variable?	Thanks, the statistics section was corrected
10	The first paragraph of the result section is repetitive and should be deleted.	The paragraph was deleted.
11	It is better to repeat the results once. The data is given both in the table and in the text.	Corrected it.
12	The difference between the two groups in Compression test and Phalen test in pre are significant. Why?	These tests are used for screening and are not definitive diagnostic tests and may be positive in some patients and not in others and may differ even before the study**.**
13	Please check p-value in nerve conduction study table, Significant values are not consistent with changes in data.	It's statistically significant, but clinically you're right, so we don't consider it significant. Thank you for your valuable opinion.
14	Except for Figure 1, the rest of the figures should be removed	Thanks. We sent them as separate files and if they are not needed, we ask the editor to delete them.
15	Please correct limitation.	Thanks, we revised the manuscript according to your comments.
16	Please rewrite your result in abstract.	Thanks, we revised the manuscript according to your comments.

2 Revision 1

5 comments · 24 Feb 2023 – 28 Feb 2023

Referee 2 Reviewer — ACCEPT 24 Feb 2023

The corrected article is acceptable.

Referee 1 Reviewer — ACCEPT 25 Feb 2023

It is corrected.

Referee 3 Reviewer — ACCEPT 25 Feb 2023

In the Name of God

Dear Editor,
Thank you for considering me as a reviewer for this publication in your esteemed journal "The Middle East Journal of Rehabilitation and Health Studies." This paper has the potential to be accepted.
With the best regards

Associate Editor — ACCEPT 25 Feb 2023

It is accepted.

Editor-in-Chief — ACCEPT 28 Feb 2023

Dear Authors
We are pleased to inform you that your article is accepted for publication in the MEJRHS. We hope to receive other qualified articles from your group.