



Role of Microwave Diathermy in Temporomandibular Joint Disorders

Author

Aavrati Rastogi

BPT, MPT (Musculoskeletal) Tutor, Department of Physical Medicine and Rehabilitation, King George Medical University, Lucknow, Uttar Pradesh, India

Abstract

Aim And Objective: *The purpose of study was to evaluate the effectiveness of microwave diathermy and active exercises in management of TMJ disorders.*

Method: *In this study we include 60 patients in which 30 patients under therapeutic exercise interventions and manual therapy and other 30 were advised electrophysical therapy in which sittings of microwave diathermy were given in combination with therapeutic exercises and manual therapy.*

Result: *On evaluation we found that those patients who were advised only therapeutic exercise and manual therapy, the evidence were in support of exercise to reduce pain and to improve function and oral opening but slightly relief. Whereas on the other side those patients who were advised active exercise manual therapy in combination with sitting of electrophysical modality microwave diathermy shows more improvement in functional and oral opening.*

Conclusion: *We can say combination therapy of exercise, manual therapy, and microwave diathermy shows good results in temporomandibular joint disorder.*

Keywords: *Electrophysical modalities, Manual therapy, Therapeutic exercises, Temporomandibular joint disorder.*

Introduction

Temporo mandibular joint disorder is a hinge joint that connects the jaw to the skull in front of ears. TMJD condition that limits the natural function of the jaw.

TMJD is common condition. The TMJ plays vital role in ability to eat and do daily activities such as yawning. TMJD can result in pain with a wide range of daily activities. It can also affect sleep. Temporomandibular disorder (TMD_s), also referred to as craniaomandibular disorders, consist of a group of pathologies affecting the masticatory muscles, the temporomandibular joint (TMJ) and related structures.¹

Temporomandibular disorder is considered a musculoskeletal disorder of the masticatory system that affects more than 25% of the general population.² Temporomandibular disorder is usually manifested by one or more of the following signs or symptoms, pain joint sounds, limitation in jaw movement, muscle tenderness, and joint tenderness.³ It is also commonly associated with other symptom affecting the head and neck region such as headache, ear-related symptoms, and cervical spine disorders.^{2,4}

Material and Method

The present clinical study was conducted on 60 patients were included in the study TMJD

Diagnosed in OPD DPMR, KGMU, LKO. The treatment was provided in Physiotherapy unit KGMU Lucknow speedy duration was off from November 18 to Jan 18.

Inclusion Criteria

- Both male and female included with age 40-50 years.
- Participant report with at least one of the three cardinal, sign or symptoms of in capital T MD jaw pain Limited mouth opening or TMJ noise.

History

1. No lifetime history of TMD symptoms (control group).
 - a) Absence of TMJ noise, locking or catching of the jaw
 - b) Absences of pain in the jaws are the temporal area.
 - c) Absence of headaches affected by Jaw movements, functions or parafunction
2. Prior History of TMD symptoms (experimental group)
 - a) In the last 6 months, no history of TMD symptoms
 - b) Prior to 6th month ago-
- i. No more than 5 isolated episode of tmj nose, with each episode lasting less than one day and not associated with jaw pain or Limited mouth opening.
- ii. No more than 1-2 isolated episode after locking or catching of the jaw wide open position.
- iii. No headaches in the temporal area affected by the jaw movement, function or para function

Exclusion Criteria

1. TMJ surgery.
2. Trauma to jaw In the last two month (exclusion regardless of time :jaw trauma from auto accident)
3. Presence of non TMD orofacial pain disorders.

4. Pregnancy
5. Unable to participate due to language barrier or mental/ intellectual incompetence.
6. Use of narcotics pain medication, muscle relaxant or steroids therapy unless discontinued for 1 week prior to examination.
7. Use of antidepressant drugs unless the participants has been on a stable dose for 60 days
8. Drug abuse
9. Ongoing dental treatment
10. Contraindication for imaging
11. Wearing of dentures
12. Ongoing TMD treatment unless on a stable regimen for at least 2 months
13. Unable or unwilling to give informed consent

Clinical Examination

- Any pain produced by procedures must be non familiar
- No TMJ clicking, popping or snapping noises with more than 1 movement.
- No coarse crepitus with any movement
- Presence of non TMD orofacial pain disorders

Imaging

- TMJ MRI negative for anterior disc displacement and positive for pathology.
- TMJ CT is negative for osteoarthritis
- Panoramic radiograph is positive for osseous(non TMJ related) or odontogenic lesions

Tests and Measures⁵

Participant demographic data and baseline measures

Demographic measures of the study population including gender, age ,race, education level and income ⁵baseline measures to describe the clinical characteristics pain intensity ^{5,6}duration of pain,depression^{5,7,8}, nonspecific physical symptoms^{5,7,8}, graded chronic pain scale scores^{5,6} and the number of RCD/TMD Axis I diagnosed present for each case.

Group A

Muscular disorders, Myofascial pain, Myofascial pain with limited opening.

Group B

Arthralgia, arthritits, arthrosis, osteoarthritis.

Intervention

30 patients both male and female were taken satisfying inclusion criteria were divided under two groups. Group A and Group B patients were evaluated towards day 0 and follow up 2nd and 4 weeks with numeric pain rating scale (NPRS)

Group A (Control Group)

Patient in this group received 4 weeks conventional rehabilitation program includes

Observation**Table 1:** Age &Sex Distribution of patients

Age Group	Male	Female	Total	Percentage
32-40	8	16	24	40
42-50	10	21	31	51
50-60	3	2	5	8
Total	21	39	60	100

The patients were mostly age of 31-60 years and females were more affected in comparison of females.

Table 2: Different treatments given to the patients

Treatment	Number of cases	Percentage
therapeutic Exercise and manual therapy	29	45
exercise therapy + manual therapy+ MWD	31	48
total	60	100

The treatment of patients were same but with some alternations.

Result

Treatment given to the patient	Excellent	Good	Fair	Poor	Worst	Total
Therapeutic Exercise and manual therapy	0	7	-	7	-	29
Therapeutic Exercise manual therapy +MWD	12	23	10	1	-	31
Total	12	30	10	8	-	60

Almost, 70% patients had excellent to good and 17 % has fair result 13 % of cases poor prognosis.

Conclusion

According to the treatment protocol it was found the patients who were given combination therapy in which there was therapeutic exercise manual therapy and MWD shows excellent result whereas

therapeutic exercise interventions and manual therapy.

Group B (Experimental group)

Patients in this group but also treated identically to that of the control group that is with conventional rehabilitation program which includes electro physical therapy in which microwave diathermy was given in combination with therapeutic exercise and manual therapy duration of microwave diathermy was 10 min per day for 10 days skipped for one week because every electro physical therapy is contraindicated if is given more than 10 days continuously and one week microwave diathermy sitting was start again.

the Patients who were given therapeutic exercise and manual therapy shows fair result.

References

1. Carmeli E, Sheklow SL, Bloomenfeld I. Comparative study of repositioning spint therapy and passive manual range of motion techniques for anterior displaced temporomandibular discs with unstable excrusive reduction. *Physiotherapy* 2001;87:1-45.
2. Gremillion HA. The prevalence and etiology of temporomandibular disorders and orofascialpain .*Tex Dent* .2000;117:30-39.
3. Benoit P. History and physical examination for TMD. In: Kraus S L.,ed. *Temporomandibular Disorders* .2nded.New York ,NY: Churchill Livingstone;1994:71-98.
4. De.Wijer A, de Leenuw JR, Steenks MH, Bosman F. Temporomandibular and cervical spine disorder: self -reported signs and symptoms *Spine* . 1996;21:1638-1646.
5. Dworkin SF, Le Resche L. Research diagnostic criteria for temporomandibular disorders: Review criteria, examinations and specifications, critique .*J of Craniomandib Dis* .1992;6:301-355.
6. Von Korff M, Ormel J, keefe FJ, Dworkin SF . Grading the severity of chronic pain . *Pain* 1992;50:133-149.[Pub Med:1408309]
7. Derogatis L.SCL -90-R: Symptom Checklist -90- R . Administration, Scoring and Procedure manual. *Pschopharmacol Bull*.1994;9:12-28.
8. Derogatis LR, Lipman RS , Covi L.SCL-90:an outpatient psychiatric rating scale - preliminary report .1973;9:13-28.