Use of Radiofrequency for Chronic Low Back Pain with Sciatica: A Systematic Review

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ABSTRACT

Introduction: Chronic low back pain is a global health problem with a substantial occupational burden. Treatment is multidisciplinary and multimodal, combining pharmacological measures, rehabilitation, and minimally invasive therapies such as radiofrequency treatment. **Objective:** To determine the efficacy of radiofrequency treatment in patients with chronic low back pain and sciatica through a review of the scientific literature. **Materials and Methods:** A systematic review was conducted in accordance with the PRISMA methodology and registered in the PROSPERO database. The selected studies were evaluated by the investigators and screened using Rayyan software to verify the inclusion criteria and conduct the subsequent analysis. **Results:** Nineteen studies involving 3,591 participants were included. Short-term success rates for facet joint pain ranged from 47.68% to 70%, but robust evidence of long-term efficacy is lacking. For discogenic pain, radiofrequency treatment targeting the dorsal root ganglion had a 1-year success rate of 86.9%. However, the lack of high-quality evidence and its use in combination with other therapies limit the recommendation of radiofrequency treatment as monotherapy. **Conclusions:** Radiofrequency treatment is a therapeutic option for the short-term management of facet joint and discogenic pain. There is no high-quality evidence indicating that it provides sustained pain relief in patients with chronic low back pain and sciatica. Its high cost and the short duration of its benefits require rigorous selection of patients for this treatment.
Keywords: Radiofrequency therapy; denervation; low back pain; sciatica.
Level of Evidence: II

Uso de radiofrecuencia para la lumbociatalgia crónica: revisión sistemática

RESUMEN

Introducción: La lumbalgia crónica es un problema de salud mundial con una carga laboral importante. El tratamiento es multidisciplinario y multimodal, combina medidas farmacológicas, rehabilitación y terapias mínimamente invasivas, como la radiofrecuencia. **Objetivo:** Determinar la eficacia de la radiofrecuencia en pacientes con lumbociatalgia crónica mediante una revisión de la literatura científica. **Materiales y Métodos:** Revisión sistemática basada en la metodología PRISMA. Se registró en la base de datos PROSPERO. Los estudios seleccionados fueron evaluados por los investigadores y se filtraron en el programa Rayyan para la validación de los criterios de inclusión y el posterior análisis. **Resultados:** Se incluyeron 19 estudios con 3591 participantes. El éxito a corto plazo para el dolor facetario oscila entre el 47,68% y 70%, pero carece de evidencia sólida a largo plazo. En el dolor discogénico, el abordaje del ganglio de la raíz dorsal tiene una tasa de éxito del 86,9% al año. No obstante, la falta de pruebas de alta calidad y el uso con terapias combinadas limitan la recomendación de radiofrecuencia como monoterapia. **Conclusiones:** La radiofrecuencia es una opción terapéutica para el control del dolor facetario y discogénico a corto plazo. No hay pruebas de alta calidad que indiquen que la radiofrecuencia proporciona un alivio del dolor prolongado en pacientes con lumbociatalgia crónica. Su alto costo y el corto tiempo de su beneficio exigen una selección rigurosa de los pacientes a quienes aplicar este tratamiento.
Palabras clave: Terapia de radiofrecuencia; desnervación; dolor lumbar; ciática.
Nivel de Evidencia: II

INTRODUCTION

Lumbago with sciatica is defined as pain localized between the lower margin of the ribs and the lower border of the gluteal region, radiating to the posterior aspect of the thigh, leg, and foot, and may be associated with motor and sensory disturbances.[1] It is considered chronic when it persists for more than three months and does not respond to

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treatment.[2] It is a global public health problem, particularly among adults, with a peak incidence between 45 and 59 years of age. Approximately 70-85% of the population has experienced low back pain at some point in their lives.[3,4]

Lumbago with sciatica encompasses different types of pain, including somatic pain, neuropathic (radicular) pain radiating to the lower extremities, and, in some cases, nociplastic pain.[5] The most common cause of radiculopathy is irritation of a specific nerve as a result of compression within the thecal sac, which may be associated with disc herniation, facet joint or ligamentous hypertrophy, neoplastic processes, spondylolisthesis, or infectious processes. Forty percent of low back pain cases are of discogenic origin.[3,6]

Treatment of lumbago with sciatica depends on the underlying cause. Conservative treatment is aimed at controlling pain and promoting early return to work and includes analgesics, neuromodulators, muscle relaxants, physical therapy, and exercise. Epidural injection of a local anesthetic and corticosteroids in the region of the affected lumbar nerve root is recommended for patients with severe acute sciatica that does not respond to these strategies. Discectomy may be considered when conservative treatment fails, neurological deficits progress, and pain persists for more than 12 weeks.[7]

Radiofrequency therapy is based on the use of electromagnetic waves generated by the passage of alternating current through an electrode. This current causes ionic friction, which increases temperature and, when temperatures exceed 50-60 °C, results in coagulative tissue necrosis.[8]

Radiofrequency is applied to specific anatomical structures according to the source of pain. For facet-mediated pain, the current is generally applied to the lumbar medial branch that innervates the facet joints; this branch gives rise to fibers that extend to the joint capsule, posterior portion of the annulus fibrosus, and posterior portion of the disc via the sinuvertebral nerve. For discogenic pain, radiofrequency may be applied intradiscally, to the dorsal root ganglion, or to the sinuvertebral nerve.[9,10]

The effectiveness of radiofrequency in the treatment of chronic lumbago with sciatica remains controversial.[11] An overall 130.6% increase in the overuse of radiofrequency procedures has been reported, with a corresponding increase in costs.[12]

The objective of this study was to determine the efficacy of radiofrequency in patients with chronic lumbago with sciatica through a review of the scientific literature.

MATERIALS AND METHODS

A systematic review was conducted according to the PRISMA guidelines.[13] The PubMed database was searched. Search terms were based on Medical Subject Headings (MeSH) and included: "Radiofrequency Therapy" OR "Therapies, Radiofrequency" AND "Denervation" OR "Denervations" AND "Low Back Pain" OR "Pains, Low Back" AND "Sciatica" OR "Neuralgia, Sciatic" NOT "pediatrics."

The inclusion criteria were: 1) randomized controlled trials and analytical studies; 2) patients with chronic lumbago with sciatica (>3 months) with facet-mediated or discogenic pain who had previously been treated with analgesics, weak or strong opioids, and blocks, with or without a positive response; 3) clinical trials comparing the effects of radiofrequency denervation with placebo or other treatments, with no restriction on the temperature used and including both pulsed and continuous radiofrequency; 4) studies published between 2015 and 2025; and 5) studies published in any language.

The exclusion criteria were: 1) studies involving patients with acute trauma, patients <18 years of age, pregnant women, or patients with fractures, inflammatory or rheumatic diseases, neoplasms, or psychiatric disorders; 2) literature reviews, systematic reviews, and meta-analyses; and 3) editorials or narrative reviews without verifiable evidence.

The research question was: What is the efficacy of radiofrequency in patients with chronic lumbago with sciatica according to the available scientific evidence?

Data Collection and Processing

The following data were collected: year of publication, author, and country of the study; methodology, including a description of the methods used and the procedure performed or compared; and results, including the effect on pain reduction, treatment safety, and adverse events.

The review was conducted according to the PRISMA methodology (Figure). Data were obtained from the articles identified through the search using Boolean operators and the eligibility criteria. The protocol was registered in the *Prospective Register of Ongoing Systematic Reviews* (PROSPERO) under ID CRD420251062928.

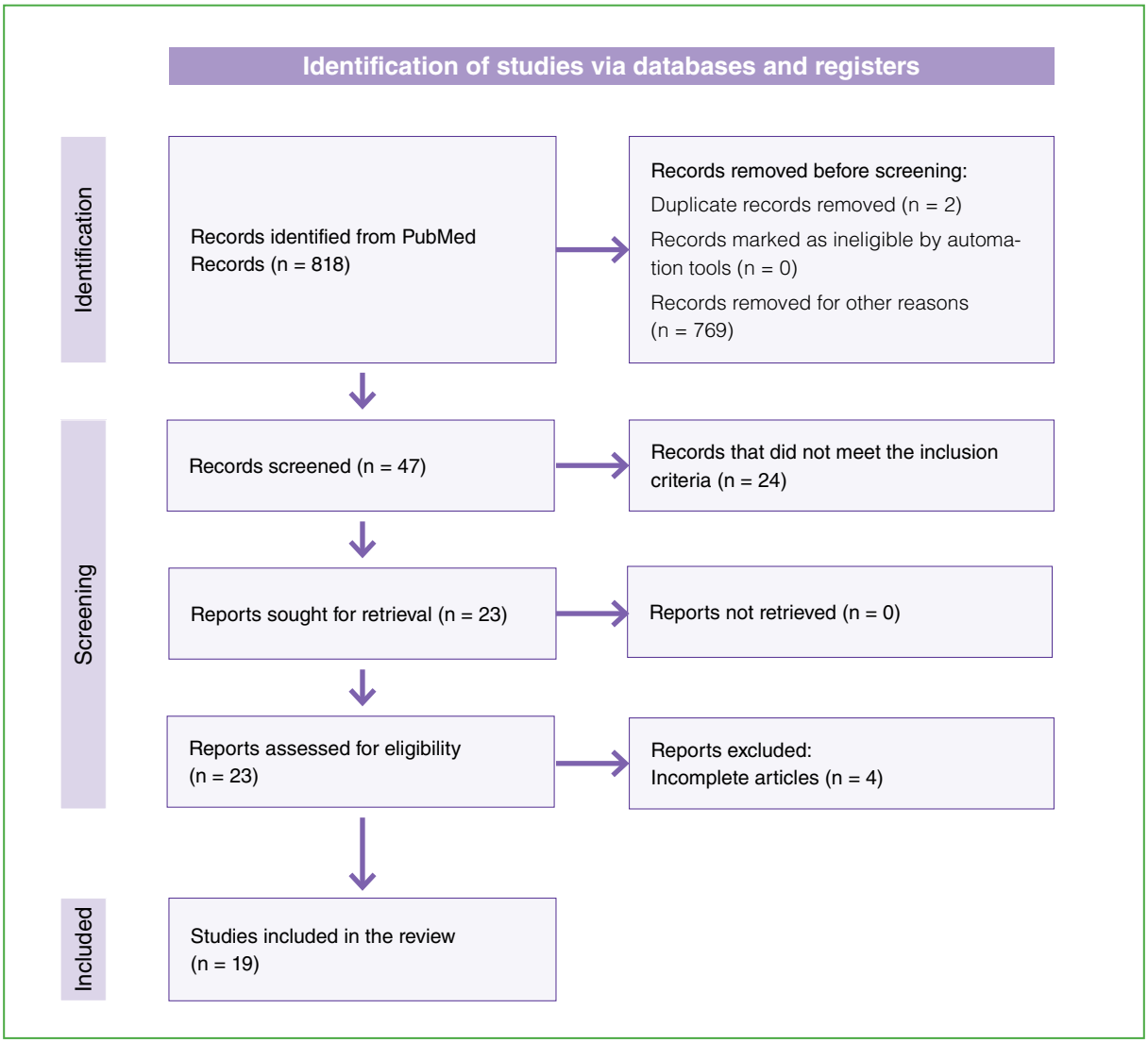

Figure. PRISMA flowchart.

The selected studies were independently evaluated and reviewed by the investigators. They were subsequently screened using Rayyan based on titles and abstracts, and the studies selected for inclusion underwent full-text review to confirm that they met the inclusion and exclusion criteria.

The PubMed search using the terms "Radiofrequency Therapy" AND "Low Back Pain" yielded 781 results; after filters based on the inclusion criteria were applied, 45 articles remained. Similarly, the search using "Radiofrequency Therapy" AND "Sciatica" yielded 37 publications; after the filters were applied, two results remained.

The results were uploaded to Rayyan, and two duplicate articles were removed.

Assessment of Risk of Bias

Risk of bias was assessed individually using the RoB 2 tool (Table 1), which consists of five domains rated as low, moderate, or high risk of bias.[14]

The quality of the selected studies was assessed using the *Grading of Recommendations Assessment, Development and Evaluation* (GRADE) system, which rates the quality of evidence as very low, low, moderate, or high.[15]

Table 1. Risk of bias assessment (Rob2).

Author	D1 Randomization	D2 Intervention	D3 Missing Data	D4 Measurement	D5 Reporting	Overall Risk
Holz and Sehgal (2016)[16]	High	Moderate	Low	Moderate	Low	High
Khalil et al. (2019)[17]	Low	High	Low	Medium	High	High
Chang et al. (2018)[18]	Medium	Low	Low	Low	Low	Medium
De et al. (2020)[19]	Low	Low	Low	Low	Low	Low
Juch et al. (2017)[20]	Low	High	Medium	Medium	Low	High
Lee et al. (2018)[21]	Medium	Medium	Low	Low	Low	Medium
Maas et al. (2019)[22]	Low	Low	Low	Low	Low	Low
Do et al. (2017)[23]	Medium	Low	Low	Low	Low	Medium
Moussa et al. (2016)[24]	Low	Low	Low	Low	Low	Low
Moussa et al. (2020)[25]	Low	Low	Low	Low	Low	Low
Truong et al. (2024)[26]	Low	Medium	High	Low	Low	High
Fischgrund et al. (2019)[27]	Low	Low	Low	Low	Low	Low
van Tilburg et al. (2016)[28]	Low	Low	Low	Low	Low	Low
Chang et al. (2017)[29]	High	Moderate	Low	Moderate	Low	High
Napoli et al. (2023)[30]	Low	Low	Low	Low	Low	Low
Papadopoulus et al. (2020)[31]	Low	Medium	Low	Low	Low	Low
Fathy et al. (2023)[32]	Low	Medium	Low	Low	Low	Low
Zhang et al. (2016)[33]	High	High	Low	Moderate	Low	High
Li et al. (2024)[34]	High	Low	Low	Low	Low	High

The internal validity of the findings was affected by varying degrees of methodological bias. Seven studies had a high overall risk of bias, three had a moderate risk, and nine had a low risk. The studies by Holz and Sehgal,[16] and Chang et al.[18] were retrospective, which increases the risk of selection bias and makes it difficult to establish causality because of the lack of adequate control groups. Juch et al.[20] conducted an unblinded trial, which entails a risk of bias in outcome measurement.

The study by Napoli et al.[30] had a lower risk of bias because of its multicenter, randomized design and adequate patient blinding. In contrast, the study by Papadopoulus et al.[31] had attrition bias due to a 22% loss to follow-up. Similarly, Mass et al.[22] reported a high attrition rate at the 12-month follow-up, which may introduce bias if the outcomes of participants who completed the study differed from those of participants who dropped out.

Chang et al.[29] and Fathy et al.[32] mitigated the risk of performance and measurement bias by using independent investigators and assessors who were blinded to group allocation when assessing functional scales.

The study by Napoli et al.[30] had adequate statistical power, with 351 participants, whereas other studies, such as those by Chang et al.[29] and Zhang et al.,[33] may be subject to imprecision because of their small sample sizes, which limits the generalizability of their conclusions.

RESULTS

A total of 19 studies met the previously established inclusion criteria and were selected, comprising a total of 3,591 participants (Table 2). The studies included both men and women with similar characteristics in terms of pain duration.

Table 2. Study characteristics and demographic details.

Author	Country	Year	Study type	Sample	Patient type	Radiofrequency application site	Outcomes	Quality of evidence (GRADE)
Holz and Sehgal[16]	U.S.	2016	Retrospective review	50 patients	With chronic facet joint pain	Facet joints	At 3 months, there was a mean improvement in disability scores of 12.63% and pain relief of 47.68%	Very low ⊕⊖⊖⊖
Khalil et al.[17]	U.S.	2019	Prospective, multicenter, randomized, controlled clinical trial	140 patients randomized 1:1	With chronic low back pain and Modic type 1 or 2 vertebral changes	Basicervical nerve	Radiofrequency ablation was statistically superior: the change in the ODI at 3 months was - 25.3 vs. -4.4 in the standard treatment group ($p < 0.001$). The change in the VAS was -3.46 vs. -1.02 ($p < 0.001$)	Low ⊕⊕⊖⊖
Chang et al.[18]	South Korea	2018	Retrospective cohort study	20 patients: (5 men, 15 women)	With chronic facet joint pain	Intra-articular	Pain scores (NRS) decreased significantly at 1, 3, and 6 months of treatment ($p < 0.05$). At 6 months, 10 of 20 (50%) reported pain relief of 50% or more	Very low ⊕⊖⊖⊖
De et al.[19]	India	2020	Prospective, triple-blind, randomized, active-controlled	50 patients randomized into two groups of 25 each: local anesthesia group and local anesthesia plus radiofrequency group	With chronic lumbago with sciatica	Dorsal root ganglion	The local anesthetic plus pulsed radiofrequency group showed a statistically significant reduction in VAS and ODI compared to the control group from 2 weeks through 6 months. At 6 months, 28% of patients in the local anesthetic plus radiofrequency group experienced ≥50% pain relief	Moderate ⊕⊕⊕⊖
Juch et al.[20]	The Netherlands	2017	3 multicenter, pragmatic, open-label, randomized clinical trials	A total of 681 participants randomized across the 3 trials	With chronic facet joint pain	Dorsal root ganglion	At 3 months, radiofrequency denervation did not result in a clinically significant improvement in pain intensity compared with the exercise program alone	High ⊕⊕⊕⊕
Lee et al.[21]	Taiwan, U.S.	2018	Prospective, randomized, and cost-effectiveness trial	60 patients randomized into two groups of 30: Group 1 (diagnostic block prior to pulsed radiofrequency) and Group 2 (direct pulsed radiofrequency)	With chronic low back pain	Dorsal root ganglion	The dorsal root ganglion block had a positive response rate of 80%. At 6 months, 20 patients in group 1 and 25 in group 2 had a successful outcome	Moderate ⊕⊕⊕⊖

(Continued.)

Table 2. *(Cont.)*

Maas et al.[22]	The Netherlands, Australia, Denmark	2019	Comparison of data from an RCT and a related observational study	1,148 patients: 125 from the facet RCT, 257 from observational group 2; 233 from observational group; 116 from the SI RCT, 198 from observational group 1, and 219 from observational group 2	With chronic facet pain	Facet joints	No differences were found in the course of symptoms between patients in the RCTs and patients in observational group 1 (eligible for the RCT)	Low ⊕⊕⊖⊖
Do et al.[23]	South Korea	2017	Randomized controlled trial	60 patients randomized into two groups of 30: intra-articular pulsed radiofrequency group and corticosteroid injection group	With chronic facet joint pain	Intra-articular	The corticosteroid injection had a superior short-term effect (2 weeks and 1 month), but at 3 and 6 months, the reduction in pain was not significantly different between the two groups	Moderate ⊕⊕⊕⊖
Moussa et al.[24]	Egypt	2016	Prospective, randomized, controlled, and double-blind	120 patients in 3 groups of 40: joint capsule denervation, medial branch denervation, and control (*sham*) group	With chronic facet joint pain	Facet joint capsule	At 2 years, only the joint capsule denervation group maintained a significant improvement in pain	Moderate ⊕⊕⊕⊖
Moussay et al.[25]	Egypt	2020	Prospective, randomized, controlled, and double-blind	150 patients divided into 3 groups of 50: pulsed radiofrequency of the dorsal root ganglion, medial branch denervation, and a control group	With chronic facet joint pain	Dorsal root ganglion	At 2 and 3 years, only the pulsed radiofrequency ablation of the dorsal root ganglion group maintained a significant improvement in pain	Moderate ⊕⊕⊕⊖
Truong et al.[26]	Denmark	2024	Single-center, single-blind RCT	120 patients randomized 1:1:1 to cryoneurolysis, radiofrequency, or placebo	With chronic facet joint pain	Medial branch nerve	Denervation of the medial branch using cryoneurolysis or radiofrequency, compared with placebo, did not show a statistically significant improvement in pain intensity or quality of life at short- or long-term follow-up	Low ⊕⊕⊖⊖
Fischgrund et al.[27]	U.S., Germany	2019	Prospective, multicenter, randomized, double-blind, and sham-controlled	225 randomized patients: 147 in the treatment group and 78 in the sham group	With chronic low back pain and Modic type 1 and 2 changes	Basicervical nerve	At 3 months, the treatment group showed a significantly greater reduction in the ODI (20.5) compared with the sham group (15.2) ($p = 0.019$)	Moderate ⊕⊕⊕⊖
van Tilburgy et al.[28]	The Netherlands	2016	Multicenter, randomized, double-blind, sham-controlled trial	60 randomized patients: 30 in the treatment group and 30 in the sham group	With chronic facet pain	Medial branch of the dorsal branch	There was no statistically significant difference in pain reduction or in the Perceived Global Effect between the treatment group and the sham group	Moderate ⊕⊕⊕⊖

(Continued.)

Table 2. *(Cont.)*

Chang et al.[29]	South Korea	2017	RCT	50 patients randomized into 2 groups of 25: bipolar pulsed radiofrequency group and monopolar pulsed radiofrequency group	Chronic lumbosacral radicular pain	Dorsal root ganglion	At 3 months, 76% of patients in the group that received bipolar radiofrequency reported ≥50% pain relief, compared with 48% in the other group	Moderate ⊕⊕⊕⊖
Napoli et al.[30]	Italy	2023	Randomized clinical trial	351 patients in 2 groups: combined treatment with radiofrequency plus transforaminal epidural corticosteroid injection vs. transforaminal epidural corticosteroid injection as a single treatment	With sciatica secondary to lumbar disc herniation	Dorsal root ganglion	The combination treatment reduced pain and achieved greater functional improvement than transforaminal epidural corticosteroid injection alone at 52 weeks of follow-up	High ⊕⊕⊕⊕
Papadopoulus et al.[31]	Greece	2020	Randomized, double-blind clinical trial	36 patients: 18 receiving intradiscal injection of gelled ethanol, and 18 receiving a combination of gelled ethanol and radiofrequency	With discogenic pain.	Intradiscal (toward the nucleus pulposus)	The combination of gelified ethanol and radiofrequency was more effective for pain relief at 6 and 12 months (>80%)	Low ⊕⊕⊖⊖
Fathy et al.[32]	Egypt	2023	Prospective, randomized, and controlled	80 patients: 40 with radiofrequency and 40 with radiofrequency plus transforaminal epidural corticosteroid injection	With lumbar disc herniation	Dorsal root ganglion	The combination of transforaminal epidural injection and pulsed radiofrequency yielded results similar to those of transforaminal epidural injection alone	Moderate ⊕⊕⊕⊖
Zhang et al.[33]	China	2016	Prospective, uncontrolled experimental study	23 patients	With discogenic low back pain	Intervertebral disc	Significantly reduced pain and improved function at the one-year follow-up; success rate: 86.9%	Low ⊕⊕⊖⊖
Li et al.[34]	China	2024	Prospective, randomized	167 patients	With chronic discogenic low back pain	Intervertebral and sinuvertebral nerve	The combination of percutaneous intervertebral radiofrequency ablation and sinuvertebral nerve ablation provides greater pain control and improves functional status for up to 6 months	Moderate ⊕⊕⊕⊖

GRADE = Grading of Recommendations, Assessment, Development and Evaluation; ODI = Oswestry Disability Index; VAS = visual analog scale; NRS = numerical rating scale; RCT = randomized controlled trial.

A total of 13 articles on chronic low back pain of facet origin were included. In two studies, radiofrequency was applied to the facet joints; in two, to the basivertebral nerve; in two, intra-articularly; in four, to the dorsal root ganglion; in one, to the facet joint capsule; and in two, the medial branch nerve was targeted.

Six randomized clinical trials involving patients with chronic discogenic lumbago with sciatica were included. The anatomical targets of radiofrequency treatment for discogenic pain were the dorsal root ganglion in three studies and the intervertebral disc in three studies.

The results of the analyzed articles indicate that radiofrequency is a safe procedure, with a very low rate of complications or adverse effects (Table 3).

Table 3. Reported adverse events of radiofrequency ablation.

Randomized clinical trial	Adverse events or complications
De et al.[19]	Sensation of heaviness in the legs (n = 4)
Truong et al.[26]	Pain and paresthesia in the hip and groin
Fischgrund et al.[27]	Nerve root injury (n = 1) Lumbar radiculopathy (n = 1) Retroperitoneal hemorrhage (n = 1) Transient sensory or motor deficit (n = 4)
von Tilburg et al.[28]	Vertebral compression fracture (n = 1)
Zhang et al.[33]	Post-lumbar puncture headache (n = 3)

DISCUSSION

The efficacy of radiofrequency varies depending on the anatomical target and the technique used. Evidence regarding the long-term efficacy of pulsed radiofrequency targeting the medial branches that innervate the facet joints is limited.[16]

In patients with chronic facet joint pain, Holtz and Sehgal[16] reported a 12.63% improvement in *Oswestry Disability Index* (ODI) scores and 47.68% pain relief three months after radiofrequency treatment of the facet joints. However, Truong et al.[26] found no statistically significant differences in pain intensity between radiofrequency and placebo in either the short or long term. In the study by Juch et al.,[20] radiofrequency did not result in clinically meaningful pain improvement compared with an exercise program at 3 or 12 months.

Studies that did not use pulsed radiofrequency targeting the medial branches of the facet joints reported better results. Moussa et al.[24] compared medial branch denervation with facet joint capsule denervation in patients with chronic facet joint pain. Their results were favorable in terms of short-term pain relief: after three months, more than 70% of patients in both groups had improved. After up to two years, the capsule denervation group maintained significant pain relief, whereas the effect was no longer significant in the other group.

In the study by Chang et al.,[18] which used intra-articular pulsed radiofrequency, pain decreased significantly for up to 6 months.

In the short term, radiofrequency ablation of the basivertebral nerve resulted in improvement in the ODI, with a mean reduction of 20.5 points. At longer-term follow-up (6 and 12 months), patients showed improvement compared with placebo.[27] Similarly, Khalil et al.[17] reported a statistically significant improvement of 20.9 points in the ODI and 2.44 points on the visual analog scale for pain.

When comparing radiofrequency with corticosteroid injections, Do et al.[23] reported that, at one month, pain had improved in patients who received intra-articular corticosteroid injections (dexamethasone plus bupivacaine) into the lateral facet joint. At 3 and 6 months, pain reduction was similar between patients treated with corticosteroid injections and those treated with radiofrequency; pain relief exceeded 50%, and 46.7% achieved satisfactory outcomes.

Regarding the combination of anesthetic injections and radiofrequency, Holz and Sehgal[16] concluded that pain decreased in patients who received medial branch blocks with 2% lidocaine and 0.75% bupivacaine plus radiofrequency neurotomy.

Similarly, De et al.[19] reported that pulsed radiofrequency applied to the dorsal root ganglion combined with a transforaminal epidural injection of local anesthetic reduced pain by 28% to 80%, with the effect lasting up to six months.

Radiofrequency can provide rapid analgesic relief in patients with discogenic low back pain. According to Chang et al.[29] and Napoli et al.,[30] pain reduction in patients receiving this treatment was statistically significant as early as the first month, which has been attributed to the ability of pulsed radiofrequency to alter synaptic transmission and reduce the expression of proinflammatory mediators. Long-term pain control remains controversial; however, the synergistic effect observed when radiofrequency is combined with intradiscal substances such as gelled ethanol resulted in adequate pain control in 80% of patients at 12 months, suggesting that a multimodal approach may be superior to monotherapy.[31]

The reviewed articles reported significant reductions in ODI scores. For example, Zhang et al.[33] observed a decrease in the ODI from 43.8 to 22.5 at one-year follow-up, whereas Li et al.[34] reported greater functional improvement during the first 6 months when intradiscal radiofrequency was combined with sinuvertebral nerve ablation, as well as a reduction in pain of more than 50% in 86.9% of patients at one year.

The limitations of this systematic review include the limited availability of studies with a low risk of bias, as only nine of the included studies met this criterion. This suggests that the available evidence remains limited in terms of sample size, methodological rigor, and study design for evaluating the effectiveness of radiofrequency denervation. In addition, heterogeneity among the studies precludes meaningful direct comparisons.

CONCLUSIONS

The efficacy of radiofrequency in patients with chronic lumbago with sciatica varies and depends on identifying the anatomical source of pain and selecting the appropriate technique. In cases of facet joint pain, short-term therapeutic success rates range from 47.68% to 70%, with improvements in the ODI of up to 20.5 points. However, these results are highly variable, and some studies have found radiofrequency to be no more effective than placebo. In the long term, the evidence is insufficient to support sustained pain relief, as only two articles targeting specific anatomical sites, such as the dorsal root ganglion and the facet joint capsule, reported pain relief at two-year follow-up.

There is no high-quality evidence indicating that radiofrequency provides prolonged pain relief in patients with chronic lumbago with sciatica. Specifically, in patients with discogenic pain, one study reported improvements in pain and function at one-year follow-up, with a success rate of 86.9%; however, the remaining studies combined radiofrequency with corticosteroids, gelled ethanol, or nerve ablation to increase its efficacy. For discogenic pain, targeting the dorsal root ganglion yielded better clinical outcomes than targeting other anatomical structures.

Although radiofrequency has a favorable safety profile and a low incidence of reported adverse events, its use remains controversial because of the decline in therapeutic effectiveness after one year of follow-up and its high cost. Therefore, the indication for this procedure should be based on an appropriate cost-effectiveness assessment.

Conflicts of interest: The authors declare no conflicts of interest.

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