IV CONGRESSO NAZIONALE

SOCIETÀ ITALIANA
G.U.I.D.A.
PER LA GESTIONE UNIFICATA E INTERDISCIPLINARE DEL DOLORE MUSCOLO-SCHELETRICO E DELL'ALGODISTROFIA

Centro Congressi Unione Industriali
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Efficacia delle tecniche riabilitative nella riduzione della spalla dolorosa nell'emiplegico: systematic review and metanalysis

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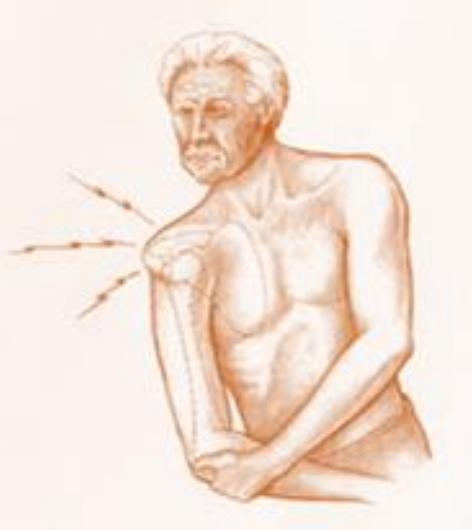
INTRODUZIONE

- L'**ictus** è la principale causa di disabilità acquisita negli adulti in tutto il mondo.

- 20-40% degli stroke survivor → disabilità moderata o grave → aumento dei costi per i sistemi sanitari.

- Manifestazioni cliniche → riduzione autonomia nelle attività della vita quotidiana (ADL)



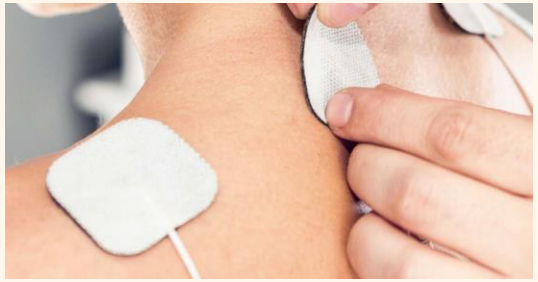
- ***La spalla dolorosa nel paziente emiplegico (HSP)*** consiste in una compromissione funzionale dell'arto superiore in termini di funzione motoria e di destrezza cui si associa sintomatologia algica

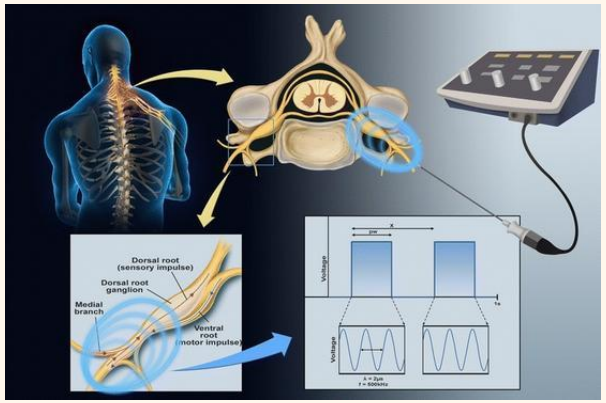
- Incidenza **30% - 65%** entro 6 mesi dall'ictus.

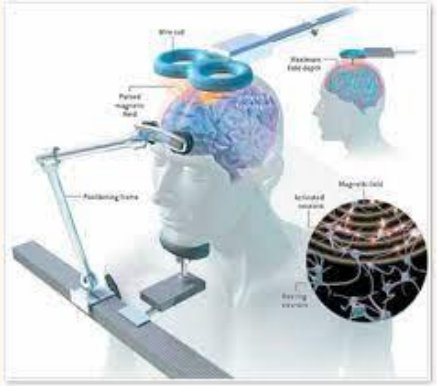
Marotta et al. J Med Eng Technol 2021
Vasudevan JM, Browne BJ. Phys Med Rehabil Clin N Am. 2014
Wilson RD, Chae J. Phys Med Rehabil Clin N Am. 2015
Kumar P et al. Pain Manag 2019

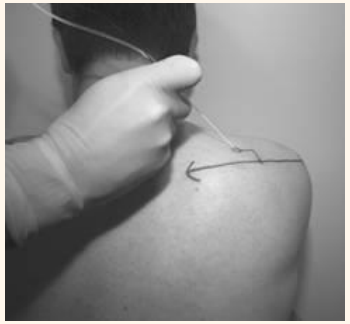
INTRODUZIONE

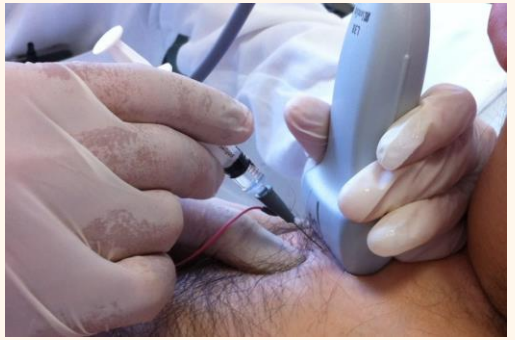
Ruolo chiave della ***riabilitazione*** nella gestione clinica dell' HSP







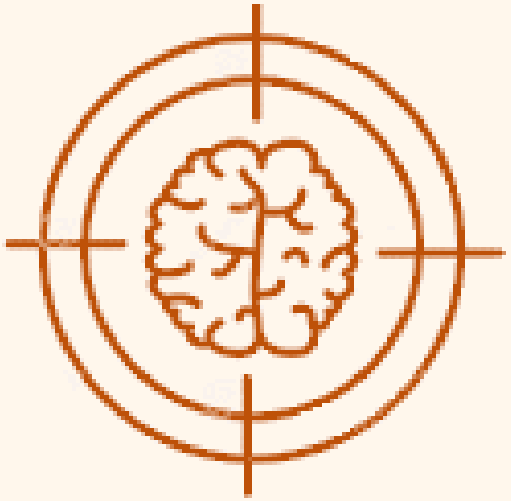




Manca consenso sull'impatto dei diversi approcci riabilitativi sulla riduzione del dolore nei pazienti con HSP

OBIETTIVO DELLO STUDIO

Lo scopo di questa revisione sistematica di studi randomizzati controllati (RCT) e meta-analisi è di valutare l'impatto delle diverse tecniche riabilitative nella riduzione dell'intensità della sintomatologia algica nei pazienti sopravvissuti ad ictus con HSP.



STRATEGIA DI RICERCA E SELEZIONE

P) **Partecipanti**: sopravvissuti a ictus con HSP

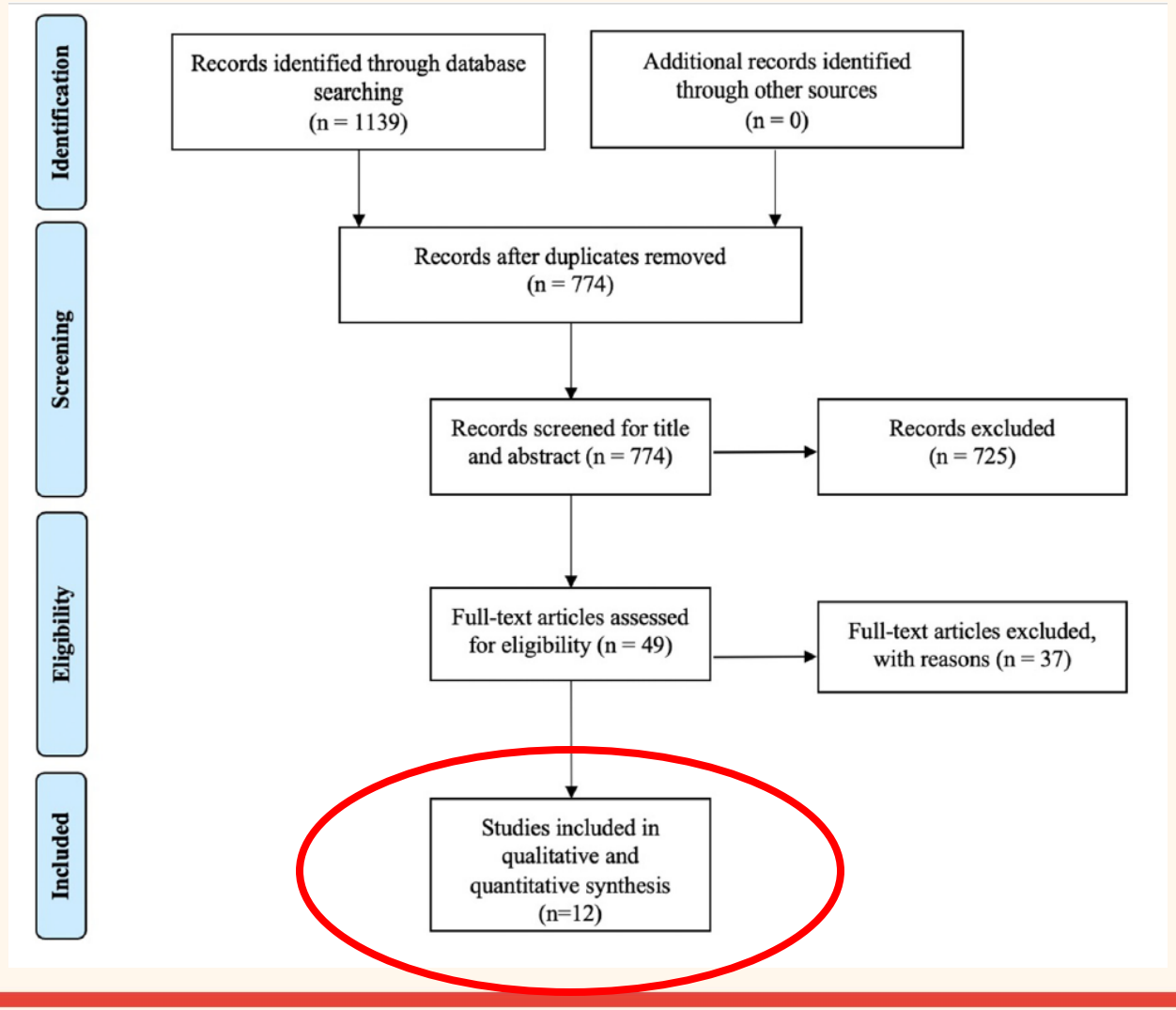
I) **Interventi**: tecniche riabilitative mirate a ridurre HSP (kinesiotaping, PNS,TENS, iniezione di acido ialuronico nella borsa sottodeltoidea, SSNB,NMES, iniezione intramuscolare di tossina botulinica, iniezioni di corticosteroidi, FES, SNMT, IFC, TrPs-DN, PRP, RSRT, rTMS) combinate al trattamento convenzionale

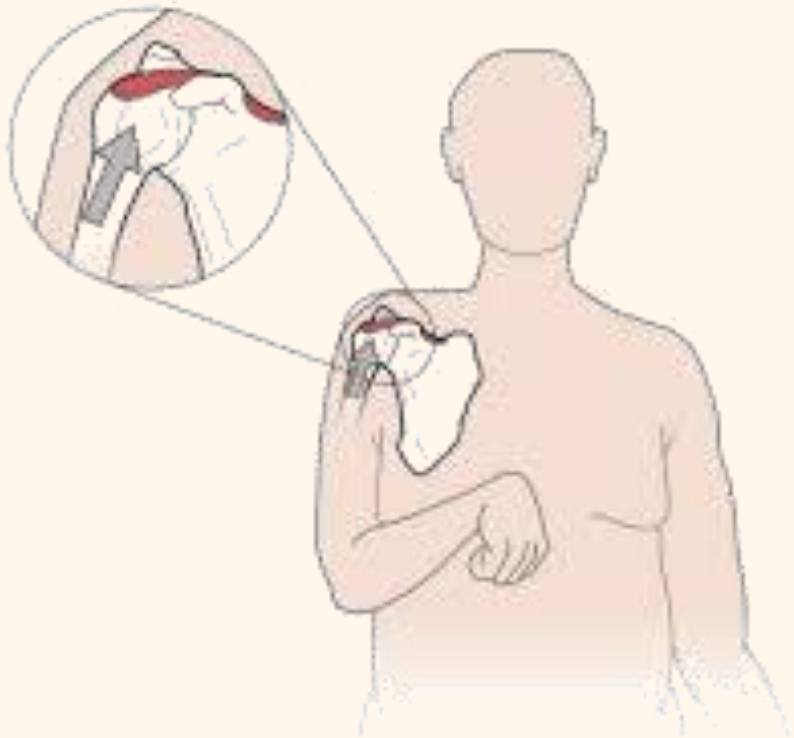
C) **Controllo**: le stesse tecniche studiate come interventi, placebo/sham o sola riabilitazione convenzionale

O) **Outcome**: intensità del dolore (scale VAS o NRS)

Disegni di Studio → RCTs con due gruppi (gruppo di studio e gruppo di controllo) che forniscano dati al termine dell'intervento

RISULTATI

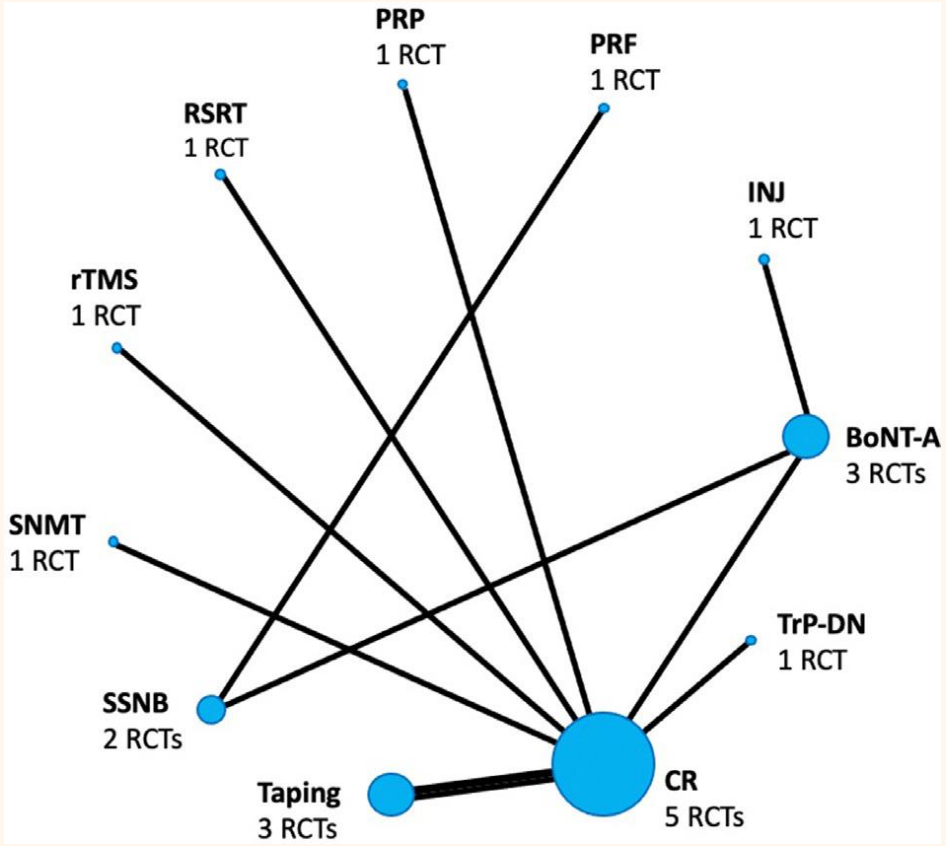




PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Flow Diagram

RISULTATI

Network plot



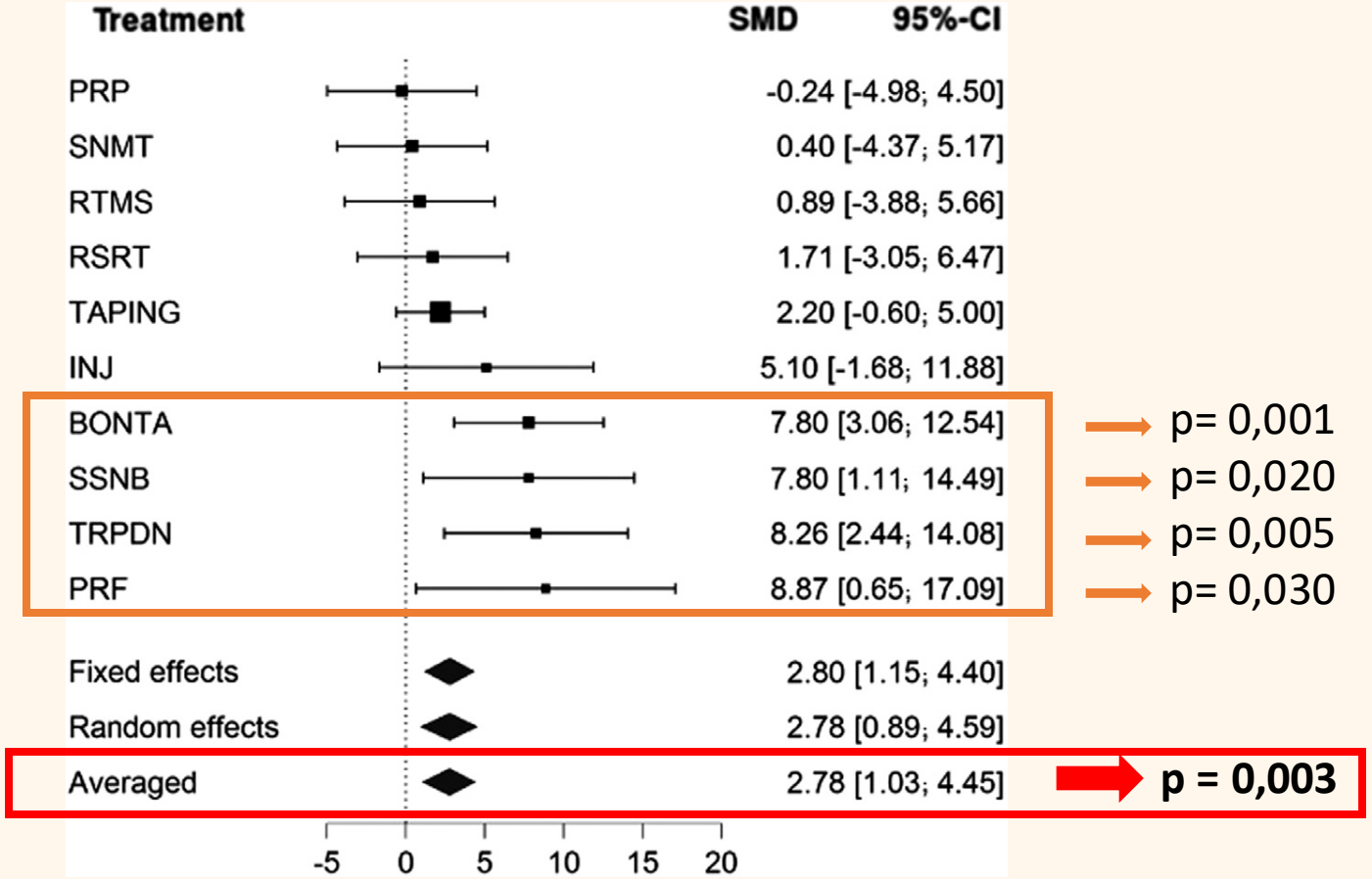
E’ stata eseguita una Network meta-analisi al fine di confrontare indirettamente le diverse tecniche riabilitative in studio.

E’ stata presa in considerazione la riduzione dell’ intensità del dolore percepito, misurata mediante VAS o NRS.

Article	Nationality	Study group	Control group	Intervention	Comparison	Outcome measure and time-point assessments	Main findings
Hanger et al. Clinical Rehabilitation 2000 [66]	New Zealand	n = 7 s n s a d					
Lim et al. Stroke 2008 [67]	South Korea	n = ((n s a (					
Ratmansky et al. Journal of Rehabilitation Medicine 2012 [33]	Israel	n = ((n s a d					
Pillastrini et al. Disability and Rehabilitation 2015 [68]	Italy	n = ((n 8 s					
Wissel et al. Journal of Pain and Symptom Management 2016 [69]	USA, United Kingdom, Germany	n = 6 D is s s n					
Choi et al. International Journal of Neuroscience 2017 [23]	South Korea	n = 12; 7 M/ 5 F Age: 60.3 (7.1) years Diagnosis (hemorrhage/ischemic): 5/7 Side of stroke: N/A Time after stroke: 12.6 (3.0) months	n = 12; 6 M/ 6 F Age: 57.8 (8.9) years Diagnosis (hemorrhage/ischemic): 5/7 Side of stroke: N/A Time after stroke: 11.8 (4) months	10 consecutive sessions of repetitive Transcranial Magnetic Stimulation (Monday-Friday, 5 times/week for 2 weeks) located above the abductor pollicis brevis muscle area of the precentral gyrus in the affected hemisphere (10 Hz) + conventional rehabilitation (Monday-Friday: 2.5 hr/day; Saturday: 1 hr/day)	Sham stimulation using the same protocol, except that the angle of the coil was at a 90°, perpendicular to the skull rather than tangential to it + conventional rehabilitation (Monday-Friday: 2.5 hr/day; Saturday: 1 hr/day)	NRS at baseline and 2 weeks after the beginning of treatment (1 day after the end of treatment)	In the intervention group, the mean NRS decreased after treatment [6.3(1.3) vs 4.3 (1.5)]. In the comparison between groups, the changes in the NRS score over time were significantly different ($p<0.001$).
Yang et al. Journal of Healthcare Engineering 2017 [70]	China	n = 10; 7 M/ 3 F Age: 59.0 (3.2) years Diagnosis (hemorrhage/ischemic): N/A Side of stroke: 6 R/4 L Time after stroke: 18.3 (0.82) weeks	n = 9; 6 M/ 3 F Age: 60.0 (2.3) years Diagnosis (hemorrhage/ischemic): N/A Side of stroke: 4 R/5 L Time after stroke: 19.2 (2.49) weeks	Tapes of 5 cm width applied on the deltoid, supraspinatus, and teres minor of the affected shoulder + conventional rehabilitation 20 min once/day, 5 days per week for 4 consecutive weeks (kinesiology taping, electrical therapy, and exercise treatment)	The tapes were applied on the same place but no tension was applied + conventional rehabilitation 20 min once/day, 5 days per week for 4 consecutive weeks (kinesiology taping, electrical therapy, and exercise treatment)	NRS at baseline and after 4 weeks (on the following day after the 4 weeks treatment completion, without taping)	Based on the baseline, the amount of improvement was greater in the intervention group [4.2(1.2) vs 0.6 (0.6); $p<0.05$] compared to the conventional rehabilitation [5.0(0.7) vs 4.8(0.8); $p<0.05$].
Kim et al. Archives of Physical Medicine and Rehabilitation 2019 [21]	South Korea	n = 18; 11 M/ 7 F Age: 65.9 (9.4) years Diagnosis (hemorrhage/ischemic): 7/11 Side of stroke: 6 R/12 L Time after stroke: 3.2 (0.9) months	n = 18; 11 M/ 7 F Age: 64.0 (12.4) years Diagnosis (hemorrhage/ischemic): 6/12 Side of stroke: 4 R/14 L Time after stroke: 3.3 (0.9) months	20 session of Robotic-assisted Rehabilitation Therapy of the affected shoulder 30 min/day, 5 times/week for 4 weeks + conventional rehabilitation twice per day 5 times/week for 4 weeks	Conventional rehabilitation twice per day 5 times/week for 4 weeks	VAS at baseline and after 4 weeks (immediately after the end of treatment)	VAS score of the intervention group decreased from 6.6 (0.9) to 4.1(0.7) at T1. No significant changes were observed over time in the control group
Alanbay et al. Pain Physician 2020 [28]	Turkey	n = 15; 11 M/ 7 F Age: 65.2 ([illegible]	n = 15; 9 M/ 6 F Age: 65.9 ([illegible]	1 session of Pulsed Radio Frequency applied [illegible]	1 injection of premixed 10 mL [illegible]	VAS at baseline and after 4 [illegible]	A significant decrease in the [illegible]
Mendigutía-Gómez et al. Acupuncture in Medicine 2020 [35]							
Kasapoğlu-Aksoy et al. Neurological Sciences 2020 [71]	Turkey	n = 30; 3 M/ 5 F Age: 58.47 (14.68) years Diagnosis (hemorrhage/ischemic): 7/23 Side of stroke: 12 R/18 L Time after stroke: 11 (6;34) months	n = 27; 3 M/ 5 F Age: 59.89 (10.57) years Diagnosis (hemorrhage/ischemic): 4/23 Side of stroke: 11 R/16 L Time after stroke: 11 (6;28) months	1 intramuscular injection of BoNT-A (Botox 100–150 U in 2 ml saline) into the pectoralis major from two points, and (Botox 40–60 units) into the teres major of the affected shoulder + conventional rehabilitation for 6 weeks	1 injection in the suprascapular notch of the affected shoulder (9 ml lidocaine 2% + 1 ml triamcinolone hexacetonide) + conventional rehabilitation for 6 weeks	VAS at baseline and at 6 weeks (at the end of rehabilitative treatment)	In the intervention group, statistically significant improvement was found in VAS score at the end of treatment (5 [4–10] at t0 to 2.5 [2;7] at t2; $p<0.001$); in the control group, no significant improvement was observed. Moreover, at 6th week, there was a statistically significant difference in favor of BoNT-A group ($p<0.05$)
Uzdu et al. Neurological Sciences 2020 [22]	Turkey	n = 20; 12 M/ 8 F Age: 59.5 (12.9) years Diagnosis (hemorrhage/ischemic): 2/18 Side of stroke: 11 R/9 L Time after stroke: 11.6 (9.1) months	n = 20; 10 M/ 10 F Age: 60.11 (10.9) years Diagnosis (hemorrhage/ischemic): 3/17 Side of stroke: 9 R/11 L Time after stroke: 13.8 (8.7) months	3 intraarticular injections platelet-rich plasma 2 ml into the affected shoulder every 2 weeks + conventional rehabilitation 5 days/week, one session of 45 min a day	3 intrarticular injections 0.9% saline 2 ml into the affected shoulder every 2 weeks + conventional rehabilitation 5 days/week, one session of 45 min a day	VAS at baseline and at 7 weeks after the beginning of treatment (1 week after the end of rehabilitation)	Analyses conducted on VAS showed significant improvement in both groups($p<0.05$). Between-group analyses did not show any differences in improvement.

Data are mean (SD); BoNT-A, botulinum toxin type A; F, female; M, male; L, left; NRS, numeric rating scale; R, right; TENS, transcutaneous electrical nerve stimulation; VAS, visual analog scale.

RISULTATI



→ p= 0,001
→ p= 0,020
→ p= 0,005
→ p= 0,030

→ **p = 0,003**

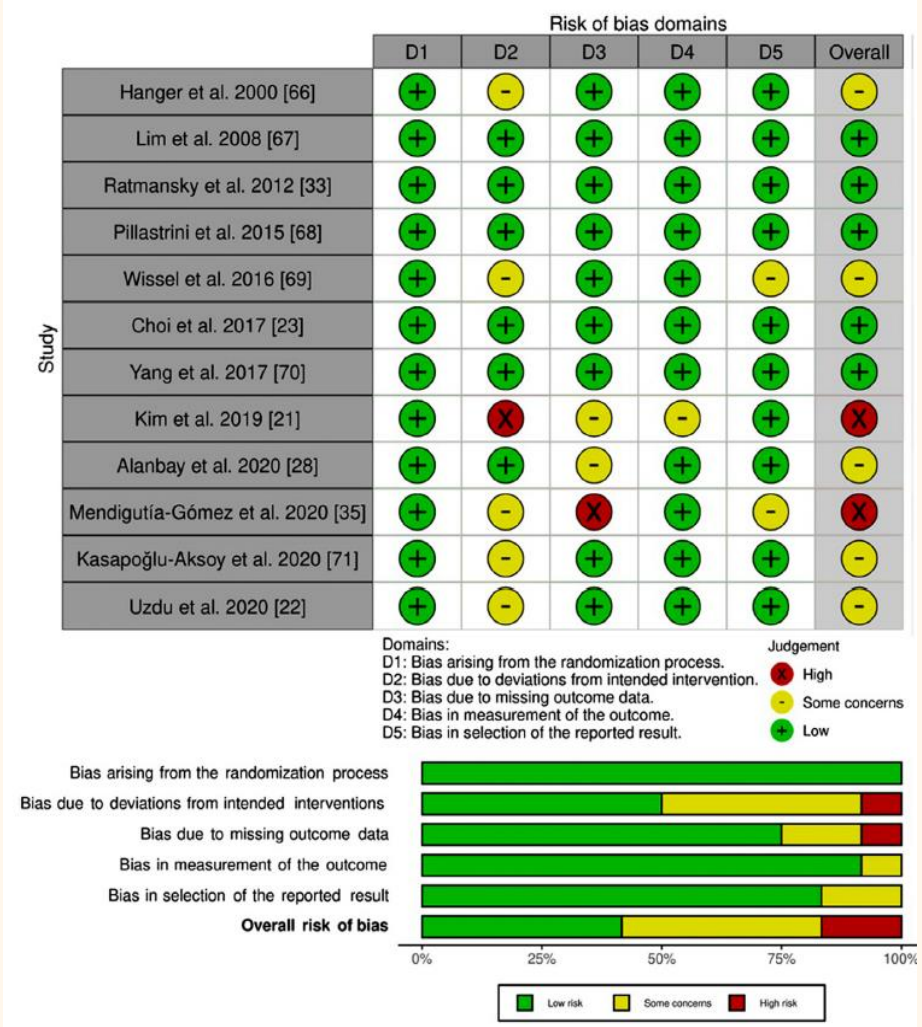
Pairwise forest plot

RISULTATI

Al fine di valutare il rischio di bias è stato utilizzato lo strumento ***RoB 2***

- 100% → corretta randomizzazione
- 50% → esclusione bias dovuti alla non corretta esecuzione dell'intervento preposto
- 75% → presenza di tutti I dati di outcome
- 91% → corretta misurazione degli outcome
- 83% → esclusione bias nella selezione dei risultati riportati

5 studi (41,6%) → basso rischio di bias



CONCLUSIONI

- I risultati di questa revisione sistematica con meta-analisi hanno confermato la necessità di integrare la riabilitazione convenzionale con altre tecniche riabilitative più efficaci nella gestione dell'HSP nei soggetti sopravvissuti all'ictus

- L'iniezione di tossina botulinica di tipo A, il blocco del nervo soprascapolare, il dry needling a livello dei trigger-points e la radiofrequenza pulsata del nervo soprascapolare sono risultati significativamente efficaci nel ridurre il dolore a breve termine

- Ulteriori RCT sono ancora necessari per superare il rischio di bias legato all'eterogeneità dei trattamenti per la HSP

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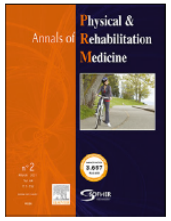

Review

Efficacy of rehabilitative techniques in reducing hemiplegic shoulder pain in stroke: Systematic review and meta-analysis

Alessandro de Sire[a,1,*], Lucrezia Moggio[a,1], Andrea Demeco[a], Francesco Fortunato[b], Riccardo Spanò[a], Vincenzo Aiello[c], Nicola Marotta[a], Antonio Ammendolia[a]

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