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Comparison of effect of Constraint Induced Movement Therapy (CIMT) and Mirror therapy on hand function in stroke patients

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Background and purpose: The goal of the study was Comparison of effect of Constraint Induced Movement Therapy (CIMT) and Mirror therapy on hand function in stroke patients

Methods: 28 randomized hemiparetic stroke patients were selected based on the inclusion criteria i.e. Ability to extend the MCP and IP joints at least 10 degrees and wrist 20 degrees; Modified Ashworth Scale score of less than or equal to 2 for upper extremity and MMSE $\geq$ 24; and they were divided into two groups with 14 patients in each group. Group 1 received CIMT and Group 2 received Mirror therapy for 5 times/week for a period of two weeks along with conventional physiotherapy and were assessed by using Fugl-Meyer Assessment-Upper Extremity (FMA-UE), Wolf Motor Function Test (WMFT): Functional Ability(FA),Time and FIM (Functional Independence Measure)on the 1st day and at the end of two weeks of treatment.

Results: Post treatment, the patients in the CIMT group showed improvement in hand function and functional independence while the patients in the Mirror therapy group showed improvement in the hand function. There was more improvement in FMA-UE and WMFT(Time) score in Mirror therapy group, while the FIM score showed more improvement in CIMT Group. The CIMT and Mirror therapy group were equally effective in improving WMFT(FA) score. The paired t-test for comparison within the group showed that, for FMA-UE Group 1 p=0.0001 and Group 2 p=0.0001; WMFT (FA) Group 1 p=0.0001 and Group 2 p=0.0001; WMFT (Time) Group 1 p=0.0001 and Group 2 p=0.017 and FIM Group 1 p=0.007 and Group 2 p=0.336. Thus, there was statistically significant improvement in FMA-UE, WMFT(FA) and WMFT(Time) score in both the groups post treatment, while FIM score showed improvement only in Group 1.

The ANCOVA test for comparison between the groups showed that, for FMA-UE p=0.037; for WMFT(FA) p=0.192; for WMFT(Time) p=0.018 and for FIM p=0.019. There was statistically significant difference between the groups for FMA-UE, WMFT(Time) and FIM (p<0.05) while there was no statistically significant difference between the groups for WMFT(FA).

Conclusion: This rehabilitation exercise showed more improvement in FMA-UE and WMFT(Time) score in Mirror therapy group, while the FIM score showed improvement in CIMT Group. The CIMT and Mirror therapy group were equally effective in improving WMFT(FA) score.

KEY WORDS: CIMT, Mirror Therapy, Hand function

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Notes:

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