ORIGINAL ARTICLE

Efficacy of Intensive Aphasia Therapy in Patients with Chronic Aphasia

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ABSTRACT

Background: It has been reported that variability in results after stroke aphasia therapy studies might be related to difference in intensity of therapy provided after stroke. Researchers suggested that intensive treatment approach for short duration of time is effective in chronic stage.
Aim: To determine the efficacy of intensive aphasia therapy in patients with chronic aphasia.
Methods: This descriptive study was carried out at Riphah International University, Lahore from 1st March 2017 to 30th September 2017. A total of 10 patients with chronic aphasia were evaluated Lahore before and after intensive treatment. Efficacy of intensive aphasia therapy was determined by measuring the overall scores from the MS aphasia screening tool applied before and after intensive aphasia therapy. MS aphasia screening tool constitutes receptive and expressive language measures that determine the efficacy of intensive aphasia therapy.
Results: Results indicated that in Paired Samples Statistics the mean for expressive index before treatment was 10.20±4.94 and expressive index after treatment was 27.80±2.74. The data showed that there is significant improvement in all areas of expressive index i.e. repetition -3.00 ± 1.05, p-value .00<.05, writing -3.40 ± 1.65, p-value .00<.05, automatic speech -3.20 ± 2.35, p-value .02<.05, verbal fluency -3.40 ± .97, p-value .02<.05 and naming 4.6±.97, p- value .00<.05.Overall expressive index indicated that there is a significant difference in mean before and after intensive aphasia therapy -17.60 ± 5.94, p-value .00<.05 due to intense practice.
Conclusion: The findings suggested that massed-practice appears to be efficient for improving language performance of patients with chronic aphasia within a short period of time and that a better outcome could be achieved by using intensive aphasia therapy regimen instead of the same amount of conventional therapy for a longer period.
Keywords: Chronic aphasia, Intensive aphasia therapy, Constraint induced language therapy

INTRODUCTION

Language is very unique regarding neurobiological perspective as its particular and localized arrangement provided us with the keen interest in the functional architecture of the brain especially the dominant hemisphere. Researches on language showed that the combination of different fields like anthropology, clinical linguistics, developmental and clinical neurology with neurobiology can guide us to understand different behaviors. In aphasic patient language is impaired causing a loss of communication. This type of language difficulty can cause impairment in every aspect of language like phonology, morphology, syntax, semantics, and pragmatics across all modalities of language i.e. speaking, reading, witting and singing. Language impairment may manifest in the output (expression) and input (comprehension) modes[1].

ASHA defined aphasia as "a communication disorder resulting from damage to the parts of brain that contain language (typically in left half of brain)"[2]. National Aphasia association defines aphasia as "an impairment of language affecting the production or comprehension of speech and the ability to read or write"[3]. It is clear from above definitions that aphasia is different from other problems of language and communication resulting from the damage to the part of the brain related to non–language-dominant hemisphere like dementia and traumatic brain injury. It is observed that damage to different parts of the brain results in some sort of communication problems but in case of aphasia greater interest to aphasialogists is cortex or covering of cerebrum[2].

Most prevalent cause of aphasia in adults is cerebrovascular accident. Immediate after stroke overall natural recovery is reported in individuals within 1st six months but limited recovery is reported after six months. In response to advancement in neurorehabilitation it is indicated that it is the ability of brain to rearrange after massive practice[4].

On the basis of classification system used by the National Aphasia Association aphasia is divided in 2 main categories, one is fluent aphasia and other is non-fluent aphasia. Fluent aphasia consists of Wernicke's aphasia, anomic aphasia, conduction aphasia and transcortical sensory aphasia. In patients with fluent aphasia perception, understanding spoken and written language is impaired, speech may be inappropriate and irrelevant, Articulation is normal, repetitions are poor and patients may use paraphasias and also add words[5]. Non-fluent aphasia consists of Broca's aphasia, transcortical motor aphasia, mixed non-fluent aphasia, global aphasia. In non-fluent

aphasias speech is usually telegraphic which means that articles and other grammatical elements are omitted, few paraphasias may occur which may be literal, finding words are also difficult, repetitions are also impaired, auditory comprehension is good in comparison to expressive language.[8] It is difficult for anybody to believe that speech therapy is effective in patients with chronic aphasia. Evidence is provided in many researches regarding the efficacy which does not supports completely but to some extent was in the favors of efficacy in patients with chronic aphasia. It is believed that aphasia is effective in spontaneous recovery period but according to some authors aphasia therapy was effective in chronic aphasic patients. Moss and Nicholos supported this point of view in their study. It was also mentioned that biological approaches and behavioral approaches provided collectively were more effective[5].

METHODS

This descriptive study was carried out at Riphah International University, Lahore from 1st March 2017 to 30th September 2017. A total of 10 patients with chronic aphasia were selected to participate in this study. Efficacy of intensive aphasia therapy was determined by measuring the overall scores from the MS aphasia screening tool applied before and after intensive aphasia therapy. MS aphasia screening tool constitutes receptive and expressive language measures that determine the efficacy of intensive aphasia therapy.

RESULTS

Overall scores from the MS aphasia screening tool indicated that there is a remarkable relation of the factors intensive aphasia therapy before and after intensive aphasia therapyin patients with chronic aphasia. The result indicated that the group that was provided with intensive aphasia therapy showed a substantial improvement after the 4 weeks treatment interval as compared to the results of the group before treatment. The result indicated that there wassignificant overall improvement. The data showed that N=10 patients with chronic aphasia were provided with 40 hours of conventional aphasia therapy and same patients with chronic aphasia were provided with intensive aphasia therapy almost 4 hours per day for 4 weeks. Intensive aphasia therapy led to significant and pronounced improvements on MS aphasia screening tool in several areas as shown in table 1.

In the Paired Samples Statistics, the mean for expressive index before treatment was 10.20±4.94 and expressive index after treatment was 27.80±2.74.The data showed that mean of expressive index after treatment was improved substantially. The data showed that there is a statistically significant difference between the mean of naming before intensive aphasia therapy and after intensive aphasia therapy 4.6±.97, p-value .00<.05 indicating that this difference is due to massive practice.. Since our Paired Samples Statistics revealed that the Mean score of naming after intensive aphasia therapy was greater than the Mean score of naming before intensive aphasia therapy so we can conclude that there was significant improvement in naming in chronic aphasic patients. Similarly it is clear from above data that there is a significant improvement in all areas of expressive index i.e. repetition -3.00±1.05, p-value .00<.05, writing -3.40±1.65, p-value .00<.05, automatic speech -3.20±2.35, p- value .02<.05, verbal fluency -3.40±0.97, p-value 0.02<.05.Overall expressive index indicated that there is a significant difference in mean before and after intensive aphasia therapy -17.60±5.94, p-value .00<.05 due to intense practice.

Table 1: MS aphasia screening tool

Before intensive Aphasia therapy	Mean	Std. Deviation	After Intensive Aphasia Therapy	
			Mean	Std. Deviation
Naming	2.40	.84	7.00	1.05
Repetition	3.00	1.05	6.00	.000
Writing	2.00	1.33	5.40	.97
Automatic speech	2.80	2.35	6.00	.000
Verbal fluency	.00	.000	3.40	.97
Expressive index	10.20	4.94	27.80	2.74

DISCUSSION

Research aims to explore the efficacy of intensive aphasia therapy in patients with chronic aphasia. This study shows the responses of patients after intensive aphasia therapy to different tasks. Research showed that substantial improvement in the language of chronic patients could be achieved by massive practice in few days. Overall scores from the MS aphasia screening tool indicated that there is a significant relation of the factors intensive aphasia therapy before and after therapy in patients with chronic aphasia.

On reviewing the literature the finding was supportive to Friedemann Pulvermüller, Bettina Neininger, Thomas Elbert, Bettina study in which they allocated chronic patients randomly in two different groups to provide them with conventional aphasia therapy or constraint-induced (CI) aphasia therapy. Both groups were provided with the same and equal amount of treatment i.e., 3 hours per day for at least 10 days of massed-practice language exercises for the CI aphasia therapy group or over a longer period of 4 weeks for the conventional therapy group. There was a significant and pronounced improvement in language function[7].

It is also important to mention here that if speech therapy is provided during spontaneous recovery period is effective a lot as indicated in a study conducted by Anna Basso and Marghreta Macis in August 2004.They reported that aphasia produces remarkable results if provided for a longer duration and with intensity to patients with chronic aphasia but there was a limited data upon aphasic therapy after stroke. Almost 23 patients were included in the

research to assess efficacy. Out of these 23 subjects 10 were left from the study due to unknown reasons. Other 13 patients were provided with one therapeutic session in a week and almost 3-4 hours of massive practice daily with the help of qualified speech and language pathologist.[8] Guardians and support person for aphasic patients were included in the study to provide the patient with massive practice. Treatment continued until change was not observed. Remarkable improvement was indicated in the study in oral and written nouns and actions naming, oral and written sentence production and token test. So from this study it was concluded that study was due to massive practice. But the main objective of our study was to determine the efficacy in chronic patients so in order to indicate results in these patients we conducted a research.[9] Although this study demonstrated remarkable improvement in language function but still it is not clear through this study that what kind of therapy is more effective than other and what kind of changes occur in brain that result in linguistic improvement. This study was conducted only on broca,s aphasic patients so it is also difficult to determine whether intensive aphasia therapy is effective for patients with wernike,s aphasia or global aphasia. It is necessary to mention that all participants were right handed and lesion site and also size in brain was different. In spite of this improvement in expressive index indicates that it purely due to massive practice in chronic Broca,s aphasic patients[10].

Another factor contributing to the effective aphasia therapy was involvement of family because out of 4 sessions only one session was provided by the qualified speech and language pathologists and rest of three were provided by the family. On reviewing the literature it was noted that findings were supportive to Benjamin Stahl, Bettina Mohrd, Felix R. Dreyera, Guglielmo Lucchesea and FriedemannPulvermüllera study conducted in 2016 to describe the importance of intensive training in the rehabilitation of patients with chronic aphasia after stroke. The results showed that language performance was significantly improved with ILAT independently on standardized aphasia test battery. In contrast Naming Therapy was effective only when given at the onset of the treatment but not when applied after previous intensive training[11].

From this study it is obvious that intensive training improves the language of chronic patients in limited time period.

CONCLUSION

On the basis of obtained findings we can conclude that Intensive aphasia therapy is effective in patients with chronic aphasia.

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