The Efficacy Of The Short-Term Language Therapy In The Aphasic Patients Without Comprehension Deficit During The Subacute Stage Of Stroke

Subakut İnme Döneminde Motor Afazik Hastalarda Kısa Süreli Dil Tedavisinin Etkinliği

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ABSTRACT
OBJECTIVE
Aphasia is one of the most common neurological symptoms after stroke and often results in significant disability. The intensity and duration of speech and language therapy are often confused.
This study aims evaluation of the efficacy of short-term, intensive language therapy in aphasic patients without comprehension deficit due to stroke during the subacute stage.
METHODS
Eighteen patients with post-stroke aphasia without comprehension deficit were included. Nine patients received 20 hours of intensive language therapy between post-stroke 6th and 8th weeks by a speech therapist. The therapy wasn`t performed in the other 9 patients. Gülhane Aphasia Test, (GAT a standardized procedure for evaluating the severity of aphasia used in Turkey) was performed at post-stroke 1st, 6th and 8th weeks. A one-way ANOVA test was used for data analysis.
RESULTS
The degree of aphasia decreased significantly from baseline at the 6th and 8th weeks ($p<0.05$), but there was no significant difference between therapy and control groups ($p>0.05$).
CONCLUSIONS
Compared to the control group, short-term language therapy did not enhance the regression of aphasia without comprehension deficit in the subacute stage after stroke.
Keywords: Aphasia, speech therapy, language therapy, stroke, subacute stage.

ÖZET
AMAÇ:
Afazi inme sonrası görülen en yaygın nörolojik komplikasyonlardan biridir ve sıklıkla ciddi sakatlık ile sonuçlanır. Konuşma ve dil tedavisinin süresi ve yoğunluğu sıklıkla kafa karıştırıcıdır. Bu çalışmanın amacı subakut dönemde inmeye bağlı motor afazi gelişen hastalarda kısa süreli yoğun dil tedavisinin etkinliğini değerlendirmektir.
*YÖNTEM***:** İnme sonrası motor afazi gelişen 18 hasta çalışmaya alındı. Dokuz hasta inme sonrası 6. ve 8. haftalar arasında bir konuşma terapistinden 20 saat yoğun dil tedavisi aldı. Diğer dokuz hastaya tedavi verilmedi. Gülhane Afazi Testi (GAT, Türkiye'de afazi şiddetinin değerlendirilmesinde kullanılan standardize edilmiş test) inme sonrası tüm hastalara 1., 6. ve 8. haftalarda uygulandı. Verilerin analizi için One-Way ANOVA testi kullanıldı.
BULGULAR:
Afazi düzeyi, 6 ve 8. haftalarda başlangıç dönemine göre anlamlı azaldı ($p<0.05$); ancak tedavi ve kontrol grupları arasında anlamlı bir farklılık yoktu ($p>0.05$).
SONUÇ:
Kontrol grubu ile karşılaştırıldığında, kısa süreli dil tedavisi subakut inme döneminde motor afazide anlamlı gerileme sağlamadı.

Anahtar Kelimeler: Afazi, konuşma terapisi, dil tedavisi, inme, subakut dönem.

Introduction:

Aphasia is one of the most common neurological symptoms after stroke and often results in significant disability (1, 2, 3, 4). Although a variety of approaches have been applied to the rehabilitation of aphasia (5, 6, 7, 8), there are no standard rehabilitation methods for aphasia therapy. This study aims evaluation of the efficacy of short-term, intensive language therapy in aphasic patients without comprehension deficit due to stroke during the subacute stage.

Methods:

Eighteen patients with post-stroke aphasia without comprehension deficit participated in the rehabilitation program. All patients were right-handed and met the following criteria. Firstly, the etiology of the condition had to be a left-hemispheric ischemic stroke. Secondly, the patients had to be alert and medically stable enough to comply with the entire language evaluation test. Thirdly none of them had to be aphasic premorbid. None of the patients had previously had dementia, a progressive neurologic condition or a psychiatric disorder. Gülhane Aphasia Test (GAT), which was developed and validated for the Turkish population (9), was performed at post-stroke 1st, 6th and 8th weeks in all patients. It evaluates fluency of speech, auditory and reading comprehension, oral repetition, object naming, writing and calculation (Table 1). The patients divided into two groups as therapy (n=9) and control (n=9).

Therapy group: Nine patients who accepted language therapy received 20 hours of intensive language therapy (2-hour per day x 5 days per week, 2 weeks) between the post-stroke 6th and 8th weeks by a speech-language therapist. During the entire period under therapy, they stayed in the hospital. Speech-language therapy based on repeated practice and teaching strategies assumed to help restore impaired skills was applied. Also, techniques such as involving self-cueing, repetition exercises, and stimulating the patients to use residual language, were used.

Control group: The therapy was not performed in the other 9 patients who did not accept therapy (control group), but patients' relatives were informed about the deficits and how to communicate with the patients.

Data analyses: One-way ANOVA test was used for data analysis.

Results:

The demographic and clinical characteristics of the patients are presented in table 2. There was no difference between therapy and control groups before treatment. All assessed language modalities, except auditory comprehension and copy, were significantly improved at the 8th week compared to baseline and 6th week in the therapy group ($p<0.05$). However, the degree of aphasia decreased drastically from baseline at the 6th and 8th weeks in the control group ($p<0.05$). The degree of improvement was better in the control group compared to the therapy group ($p<0.05$) (Table 3).

Discussion:

Although natural recovery is usual in aphasia after stroke, no reliable predictor of outcome has been documented yet (2, 8). The evidence suggests that the highest degree of improvement occurs within the first three months post-stroke and can extend to 6 months post-onset (2, 3, 10). When used during spontaneous recovery, various forms of speech and language therapies appear to impact the development of this recovery pattern (3, 10).

There is extensive literature on the effectiveness of aphasia therapy. Some studies reported that the evidence was inconclusive in unselected acute aphasic stroke (11, 12), but other studies concluded that therapy at the acute stage was effective (13, 14). The results of a meta-analysis by

Bhogal et al. suggest that an intensive therapy program provided over a short amount of time can improve outcomes of speech therapy. This meta-analysis showed that a significant treatment effect provided 8.8 h of therapy per week for 11.2 weeks (15). Aphasia rehabilitation 8-10 h per week proved to be effective for at least several months after acute stroke in another study (16). Cochrane database system review about speech and language therapy for aphasia following stroke, has provided some evidence of the effectiveness of speech and language therapy for aphasia following stroke and demonstrated that intensive therapy is more beneficial than conventional therapy (17).

since the patients stayed in the hospital during the treatment period), the difference of lesion amounts (cooperation of lesion amounts vs. therapy effectiveness could not be obtained because of volumetric measures were not performed) and possible depression due to medical condition.

Spreading treatment session over a long period increases the cost and impairs the cooperation of the patients' family during the therapy program because of transportation difficulties. Therefore, we applied short-term intensive speech and language therapy in this study. But compared to the control group, the therapy did not enhance the regression of aphasia in the therapy group (p>0.05). Also, the degree of improvement was better in the control group compared to the therapy group (p<0.05) (Table-3). The reasons for these results can be due to insufficient duration of therapy (20 hours), stimulation deficiency (although the therapy was given by a speech-language therapist, the active participation of the family members in the therapy program could not be obtained,

Conclusions:

The longer treatment period might be beneficial to improve the outcome of speech-language therapy. If present, the treatment of accompanying depression possible would have a positive effect on speech improvement. Also, the participation of family members in the therapy program will increase the success of treatment.

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Table 1: Description of Gülhane Aphasia Test items

Fluency	4 items
How are you?	
What is your complaint?	
Where are you now?	
Tell me what you see in that picture	
Auditory comprehension	**20 items**
Simple orders	9 items
Questions with "right" or "wrong" type answers	5 items
Complex orders	6 items
Reading comprehension	**19 items**
Match letters to spoken word	1 item
Match syllables to spoken word	1 item
Match written word to spoken word	1 item
Match number symbol to spoken word	1 item
Follow the orders written on the card	9 items
Match written word to picture	6 items
Oral repetition	**19 items**
Object naming	**13 items**
Naming the picture	7 items
Naming the colours	6 items
Writing	**2 items**
Spontaneous	1 items
Copy	1 items
Calculation	**7 items**