

Stimulation in Acupoint St-36 and Cognitive Behavior Therapy Reduce Il-6 in Anxiety Disorders

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Abstract. Anxiety disorders in patients with chronic diseases can affect the healing process of the disease. Many cases of anxiety disorders in patients can lead to comorbidity of physical-mental illness. Acupoint stimulation therapy and Cognitive Behavior Therapy (CBT) is a combination of physical and psychological treatment methods to improve the recovery of mental physical comorbidity by improving the value of Interleukin 6 (IL-6). The purpose of the study was to see the effect of stimulation of acupoint ST-36 and CBT in reducing IL-6 levels in anxiety disorders. The research method used was an experiment with a control group and using pre and post test, the number of samples used was 20 people divided into two groups, control and treatment groups. The results showed that the stimulation of ST-36 and CBT points had a significant effect in reducing IL-6 levels in the blood compared to the control group. Based on psychological tests showed that the level of anxiety in the treatment group was better than the control group.

Keywords: CBT, anxiety, stimulation

Introduction

Patients with comorbid disorders or more than one disease are found in patients with chronic diseases, including a combination of physical-mental illness. The combination of diseases experienced by a person is commonly known as comorbidity. Disease experienced by someone who is chronic can also suffer from mental disorders due to continuing to think about the illness. Mental disorders that can be experienced by patients with chronic diseases include anxiety disorders.

Anxiety can be experienced by everyone and is a common occurrence when it occurs in normal conditions, but if feelings of anxiety occur with high intensity and disrupt the activities of daily life, then it is called an anxiety disorder. Anxiety disorders can have a significant negative impact both psychologically and on the daily activities of patients with functional disorders. The negative impact of psychological disorders will be reflected in the reduced quality of life (Sulaiman, Zanyuin, Kheong, Bhojwani, & Seung, 2017). Kiecolt-Glaser et al. stated that negative emotions such as anxiety and depression can cause an increased risk for disorders with inflammatory etiology, and increased inflammatory activity can be an important mediator of the relationship between emotion-disease (O'Donovan et al., 2010).

Research data in Russia based on Wikipedia data shows that 94.2% of cases of patients with chronic disease experience an average of two or

three other co-morbid diseases (Jakovljević & Ostojić, 2013). Research conducted by Keskin and Bilge in Turkey, found that the prevalence of anxiety disorders in hypertension was 9.5% and for diabetes was 16.0% and the prevalence of depression in hypertension was 5.2% and for diabetes was 22.7% (Peltzer & Pengpid, 2016).

Methods of treatment of diseases with physical-mental comorbidity require at least two therapeutic methods; medicine to treat physical illness and psychiatry for the treatment of mental disorders. Modern treatment methods that exist today are sometimes not able to provide the expected cure, therefore sometimes a companion treatment method is needed to help improve recovery. Treatment methods with acupoint manipulation and Cognitive Behavior Therapy are alternative therapeutic methods that are expected to be a complementary treatment method for modern medicine in improving recovery.

Acupoint manipulation treatment method is the development of traditional Indonesian therapy and combines it with knowledge of acupuncture points. Acupoint manipulation treatment method is different from acupuncture because it only provides stimulation on the surface of the skin by rubbing it for several minutes. The acupoint used in the study is Stomach 36 (ST-36) or known as the point Zu San Li. Acupoint ST36 is one of the important points and is very commonly used in acupuncture (Dimitrov, Atanasova, Tomov, & Ivanova, 2016). Chang et al. stated that ST-36 is used primarily to treat diseases related to the

digestive, neurological, and respiratory systems(Chao et al., 2013).

Psychological therapy methods for anxiety disorders that can be used are Cognitive Behavior Therapy (CBT). CBT is a psychological therapy that are essentially within the CBT there are learning new skills to help manage the anxiety experienced with the aim to find a way to think and behave in controlling anxiety in the long term. According to Batler et al, based on several meta-analyzes conducted, Cognitive Behavioral Therapy (CBT) is effective in helping to cure common mental health disorders such as anxiety and depression in various populations(Twomey, O'Reilly, & Byrne, 2015).

The use of combination therapy methods of manipulation acupoint and CBT as a companion therapy in the treatment of patients with comorbid physical-mental disorders is expected to provide better results for a treatment method that is simultaneously.

The development of a person's health status as a result of a given treatment methods can be viewed from various aspects. One aspect that can be used to see health status is the level of Interleukin 6 (IL-6) in the blood. IL-6 is a mediator that can dissolve with pleiotropic effects on inflammation, immune response, and hematopoiesis. IL-6 works immediately and is produced as a response to infection and injury to the tissue, contributing to the defense system through stimulation of the acute phase response, histopsies, and immune reactions. Synthesis of IL-6 is tightly controlled by transcriptional and posttranscriptional mechanisms, but irregular IL-6 synthesis can continuously provide a pathological effect on chronic inflammation and autoimmunity (Tanaka, Narazaki, & Kishimoto, 2014).

The purpose of the study was to determine the effect of manipulation at the acupoint point ST-36 and CBT can reduce IL-6 in patients with anxiety disorders.

Methods

This research conducted in experimental research method and the design of the research used is The One-Group Pretest-Posttest Design with the control group. The number of samples used is 20 adults who suffer from anxiety disorders. Sample selection is done by conducting a health and psychological examination of prospective research participants to ensure the existence of anxiety disorders in prospective participants. The distribution of treatment groups was done by random sampling, and divided into two groups, namely the control group and the treatment group. The treatment group will get acupoint manipulation treatment at ST-36 point three times per day for two months and each

acupoint manipulation treatment is carried out for 15 minutes. Acupoint manipulation at point ST-36 is done by rubbing with your fingers with a little pressure. During the treatment period, participants will also get CBT therapy which is conducted eight times. Data collection in the form of blood samples for biomedical laboratory tests and psychological tests to see the psychological condition of participants was carried out before and after treatment was given. Analysis of data on the results of biomedical laboratory tests to see levels of IL-6 in the blood is done by using the t test to see differences between treatments. The psychological test given to participants is a graphical test and interpretation of test results is done descriptively.

Table 1. Independent Sample T-Test

	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	
IL6	Equal variances assumed	3.888	.064	2.623	18	.017
	Equal variances not assumed			2.623	11.706	.023

Table 2. Psychological assesment pre-post therapy towards anxiety level

	Control		Treatment	
	Pre	Post	Pre	Post
Light	1	1	2	5
Medium	6	5	4	2
High	3	4	4	3

Results

The results based on t-test between the control group and the group treated with acupoint manipulation and CBT showed that the value of t = 2.623 with 0.017 significance value (p < 0,05). These results indicate that there is an effect of manipulation at the acupoint point ST-36 and CBT can reduce IL-6 in patients with anxiety disorders. The results of research conducted by Yim et al., (2007) showed that acupuncture given at ST-36 point significantly reduced the incidence of CIA, IL-6, TNF- α , INF- γ , collagen II antibodies, levels of IgG and IgM in CIA mouse serum and prevent damage to the knee hinge. Another study conducted by Wang et, al. also showed that stimulation of acupuncture at ST-36 in the treatment group had a TNF-alpha level, IL-6 in cerebral tissue was significantly lower compared to other groups (P< 0.05)(Wang, Du, & Shi, 2013).

The results of psychological tests showed that the number of patients with mild anxiety disorder in the group that received acupoint and CBT manipulation treatment was more than in the control group. The number of patients with mild anxiety levels in the treatment group manipulation acupoint and CBT shows that CBT has given a positive effect on patients with anxiety disorders. CBT is an active therapy that requires clients to participate in the recovery process. Freedom from unnecessary suffering can be achieved for those who incorporate CBT components into daily life; with the practice of newly acquired skills, CBT is a very effective treatment for those who have an anxiety disorder (Connell, 2010).

The results of research conducted by Stewart and Chambless also show that CBT is effective to help overcome anxiety disorders in adults in clinically representative conditions (Stewart & Chambless, 2009). Improving mental conditions can reduce the amount of IL-6 in the blood (Cohen, 2018).

Therapy which is a combination of physical therapy with acupoint ST-36 and CBT manipulation in patients with physical-mental comorbidity has an effect on decreasing levels of IL-6 in the blood and also decreases the level of patient anxiety disorders. This can be caused by the effects of manipulating the acupoint ST-36 because acupoint not only have the function to help boost the immune system, but acupoint ST-36 can also be used to reduce mental disorders adds to the effectiveness of CBT.

Acupoint therapy on ST-36 in addition to helping improve the physical condition also can help patients reduce the level of anxiety experienced. ST-36 is the He-Sea point on the "stomach" of the meridian (ST) which strengthens "Qi" and "blood," aligning and strengthening the "spleen" and "stomach," and ultimately strengthening the body. The ST-36 point is believed to be related to elements of the earth that are related to emotions such as anxiety and stress; Therefore, ST-36 is widely used to treat psychological / mental disorders (Zhao et al., 2014).

The results of this study open the possibility of exploitation of acupoints other than ST-36 to maximize the therapy given in an effort to improve recovery of disease with physical-mental comorbidity. Further research is needed because acupoint stimulation has been proven to have anti-inflammatory action, at least in part, through activation of the so-called cholinergic anti-inflammatory pathway. Therefore, therapy with the acupoint stimulation method must be part of the armamentarium of each doctor who treats patients with mediated immune disorders, because it can affect the development of the disease and

thus, improve the quality of life (Panagiotis, Miltiades, Anastasios, & Georgios, 2017).

Conclusion

Based on the results of the study it can be concluded that acupoint ST-36 manipulation and CBT administration in chronic patients with anxiety disorders can help improve recovery through reduction of IL-6 in the blood, and level anxiety disorders. The results indicate that the manipulation of the acupoint and CBT can be used as a method of treatment of companion.

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