

**Comparison of GBO HiTOP against conventional ECT machine from Siemens as a treatment against Mentally disabled patient.**

Location of study: Mental Health Hospital Dr. Radjiman Wediodiningrat, Malang – East Java  
Head of Hospital: Dr. Eko Marzoeki Susanto, SpKJ (Psychiatrist), MM  
Executor: Team of Psychiatrists led by Dr. Didit.  
Sponsor: PT Es Tu Indonesia.

**Summary:**

**Introduction**

Starting from July 2008, a team of 6 Psychiatrists are performing a study over 100 patients at the Mental Health Hospitals. The hospital is the largest mental health hospital and the oldest one, with over 600 beds in the hospitals, most of which are filled with patients throughout the year, initially founded by the Dutch during the colonization of Indonesia.

In this study, the team picked 100 patients, all of which are in-house patient (not day care patients) where they stay at the hospitals and can be evaluated and treated on a regular basis. Day care patients will only come the hospitals as they feel like to, and most of them are either non psychotic patients (like depression, anxiety) or psychotic (schizophrenia), but already treated well in the hospitals and are ready to be returned home. The length of the study is 3 months.

Before the presence of GBO HiTOP machines at the hospital, the hospital has already had a few units of conventional ECT made by Siemens that had been discontinued. Because of the severity of the patients, the machine is rarely used, and typically used only for severe conditions only such as vegetative patient. However, since these machines had been used for a while in the past, some of the old records were compared to the new study.

**Analysis & Study**

Out of those 100 patients, the breakdown is as follows:

60% male, 40% female.

10% <= 20 yrs; 30% 20-30 yrs; 25% 30-40 yrs; 20% 40-50 yrs; 15% 50-60 yrs.

Breakdown by Indications:

50% Schizophrenia (Psychotic mental disorder).

10% Vegetative

20% Depression

20% Anxiety

(Please note that these breakdown is not necessarily the same composition of patients at the hospital).

For all patients, treatments are done using HiTOP 142, where Simulfam i Programs is used for 30 minutes. Patients treated on the head, and adjustment of power is set by operator based on how much electrical energy the patient can absorb (observing the blink on the eyes after the simulfam I is started and the knob of power adjustment is turned).

Each patient is treated 3 times a week, where one group of patient is Monday, Wednesday and Friday and the other group is Tuesday, Thursday and Saturday.

#### Schizophrenia

Of all the Schizophrenia patients, noticeable improvements are observed after the second months. Improvements are observed and calculated using the MMPI scoring by the psychiatrists in the team. Some of these patients after the 3<sup>rd</sup> month can be considered "normal", thus can be considered healthy enough to be sent home. However, depending on the extent of the patients themselves, some patients need some medication to further calm them down during treatments at the beginning of the study (typically 1<sup>st</sup> month). Of those who are not "normal" enough yet, they typically are very much improved than at the beginning of the study.

This is quite comparable to the results that were once done on conventional ECT. They were done only for Schizophrenia patients and those schizophrenia with some vegetative behavior.

#### Vegetative

For schizophrenia with vegetative behavior, at the beginning, the first two months are not as quite apparent on the improvement against vegetative behavior. However, after this result, we contacted the sole agent of GBO, PT Es Tu Indonesia, and we were advised to even further increase the power of electricity going into the patient, until there is signs of blinking on the eyes. These will mean a significantly higher energy than before. However, after about 10 treatments under such conditions, some positive improvements on these patients are observed. However, although the majority of the vegetative patients shows better signs of "life", a majority of these patients at the end of the treatment and analysis time are still considered not the most talkative patients.

Similar to Schizophrenia, the conventional ECT has no predictive prescriptions as to how many treatments will significantly improve vegetative patients. This is the most difficult of all mentally impaired patients, because they are the most uncommunicative patients.

### Depression & Anxiety

These are the most significantly improved patients. Comparing patients that were not treated with those treated, we can see significant improvement in relatively short period of time. Generally, patients can be considered completely cured in 1-2 months of continuous treatments.

Conventional ECT were not done at all at these patients in the past.

### **Conclusions**

Although at the end of this study we can not conclude which one is faster and more effective in curing Schizophrenia (Psychotic mental disorder) and Vegetative behavior patients, between HiTOP 142 and conventional ECT from Siemens, but we feel that from this study, HiTOP offer a much more comfortable and effective treatments over Schizophrenie and Vegetative behavior patient. We feel very comfortable using the machine to treat young children and women as well as older women.

As a expansion of this study, we will try to create a group of similar types of patients of Schizophrenia with similar MMPI score, other stress analysis indicator and gender. We will treat all with the same medication (drugs), but one group of at least 10 people will be treated with HiTOP, another with conventional ECT and the other just drugs. We will try to observe on the speed and effectiveness of these.

For Depression and Anxiety, without any doubt we feel that this is a very effective machine. The old ECT did not do any treatment on this, and we have seen that the machine is fabulously fantastic in performing the treatment.

Appendix





