



# Electroconvulsive Therapy Compared to Pharmacotherapy in Treatment in the Adult Population with Severe Depression

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## Research Question

How does electroconvulsive therapy compare to pharmacotherapy in the treatment of adults with severe depression?

## Background

- Electroconvulsive therapy is a treatment that is used for psychological disorders when pharmacological interventions are insufficient in the treatment of these disorders. (Kellner et al., 2012)
- ECT has a 50-70% chance of success in patients that have not had a response to traditional therapy for depression. (Pfeiffer et al., 2011)
- ECT works by sending an electric shock to the brain, which causes a series of seizures that correct and enhance mood and behavior for the patient. (Kellner et al., 2012)
- The exact mechanisms of ECT are not known. (Kellner et al., 2012)

## Search Process

- Made use of the Jacksonville University Library database
- Databases searched
  - PubMed
  - CINAHL
  - ProQuest
- Keywords
  - ECT
  - Pharmacotherapy
  - Depression
  - Side Effects
- 12 articles received in total
- 10 articles included in review



## Review of Literature

- With ECT, GABA levels increase, and ratings on the Hamilton Depression Scale decrease. (Burgese 2003)
- With ECT, Plasma Cortisol levels are lowered (Burgese 2003)
- With ECT, a decrease in score on the Beck Depression Inventory (Burgese 2003)
- With ECT, suicidal thoughts and ideations are significantly lowered. (Pfeiffer 2011)
- Results were based on personal testimony and remission was present in 69.9% of participants. (Kellner 2005)
- Visual-spatial functioning, verbal auditory memory, and working memory and executive functions tests were conducted. Tests on memory showed a temporary impairment, but became much improved over baseline over the course of three months. (Bodnar 2015)
- Drug regimens alone do not always have a positive influence on suicidal rates. 4.2% of patients on a drug deemed satisfactory commit suicide and 7% of patients who are on inadequate medications commit suicide. (Kellner 2005)
- ECT is vastly underused, for example, only being utilized in 0.16% of patients with major depressive disorder in the Veterans Health Administration (Pfeiffer, P. 2011)
- Side effects often prohibit the use of ECT in patients, including headaches, confusion, and temporary memory loss experienced by, in one study, 85% of participants (Anonymous 2005)

## Levels of Evidence

- 8 of our articles reviewed are Level II (Individual experimental studies with randomization of the participants): (Burgese 2003), (Kellner 2005), (Bodnar 2015), (Anonymous 2005), (Allen 2015), (Pluijms 2002), (Sanacora 2003), (Tsaltas 2010)
- 1 of our articles was a Level 4 of evidence (Non-experimental, comparative study): (Pfeiffer 2011)
- 1 of our articles was a level 5 of evidence (Review of literature): (Kellner 2012)

## Conclusions

- ECT is highly effective in patients that show no signs of improvement with pharmacotherapy.
- ECT is useful in lowering thoughts of suicide and suicidal ideations in patients with severe depression
- Despite the side effects of headaches and cognitive impairment, ECT has still proven to be effective in the long run



Source: [http://www.psych.med.umich.edu/images/ect\\_rtuniplcmet.jpg](http://www.psych.med.umich.edu/images/ect_rtuniplcmet.jpg)

## Recommendations for Practice

- For patients with severe depression and suicidal intentions, ECT should be the first treatment rather than pharmacological interventions
- ECT could be a good alternative for patients who experience severe side effects with their psychotropic medications.
- ECT should be used in patients that are not responding to anti-depression medications.
- Patients that are currently on an anti-depression drug therapy that is successful should stay on those drugs rather than switch to ECT

