

Electroconvulsive therapy was shown to be a relatively safe method to treat depression and remedy treatment-resistant patients. Nonetheless, some studies found no dementia in individuals who underwent ECT (Osler et al., 2018), and in geriatric depressed patients, ECT even improved cognitive function (Socci et al., 2018). The CORE group revealed that ECT alone had rapid response and a high likelihood of remission with bilateral ECT in severe unipolar MDD patients (Husain et al., 2004) regardless of racial differences (Williams et al., 2008). Additionally, regarding unilateral ECT, when proper dosage was applied, those receiving ultrabrief pulse suffered less cognitive decline than brief pulse without a difference in the effectiveness of depression alleviation (Loo et al., 2014; Martin et al., 2019). Moreover, the PRIDE Study showed that right unilateral ultrabrief-pulse ECT, combined with venlafaxine, performed with excellent safety and tolerability in treating geriatric depression (Kellner et al., 2016b) and improved health-related quality of life (McCall et al., 2017). However, whether ECT contributed more memory loss than pharmaceutical treatment is still in dispute, but the majority support the view of no additional cognitive damage ascribable to ECT than antidepressants (Husain et al., 2004; Kellner et al., 2016a,b; Bjoerke-Bertheussen et al., 2018). Moreover, less cognitive withdrawal was seen in unilateral to bilateral (Semkovska et al., 2016) and ultrabrief pulse to brief pulse (Loo et al., 2014; Brus et al., 2017; Martin et al., 2019) when the dosage was properly applied. As for electrode placement, bitemporal ECT showed rapid response, and unilateral placement may be inferior to bilateral in effects on depression (Kellner et al., 2010). Moreover, continuation ECT should be considered to prevent relapse (Kellner et al., 2006) without the cost of memory loss found with other treatments (Smith et al., 2010; Kellner et al., 2016a), and it was shown to have an overall net health benefit in older depressed individuals (McCall et al., 2018). In addition, ECT may reduce mortality among patients with psychiatric conditions (Liang et al., 2017) and short-term psychiatric inpatient readmissions whose symptoms were severe (Slade et al., 2017). In addition, besides depression, continuation ECT supported schizophrenia and schizoaffective disorder as well (Omori et al., 2019). However, high-dose unilateral ECT may not be inferior to bitemporal ECT and may achieve better cognitive performance (Semkovska et al., 2016). In some urgent circumstances, suicide for example, ECT responded quickly and showed superior anti-suicidal effects in spite of unipolar or bipolar depression (Liang et al., 2018). However, cognitive decline was noted in some depressed patients who received ECT (Brus et al., 2017), and recovery from this declination was suggested to take half a year (Nuninga et al., 2018). In fact, the results of ECT exceeded those of medication of treatment-resistant bipolar depression as well (Schoeyen et al., 2015). Continuation ECT alone or continuation ECT combined with medication was favorable to remaining in a remission state after response to ECT. With respect to other common side effects that occurred during ECT treatment, headache and nausea/vomiting are believed to be the most common complaints