Published in final edited form as:

Psychiatry Res. 2015 January 30; 225(1-2): 215. doi:10.1016/j.psychres.2014.08.021.

Speed of response to electroconvulsive therapy compared with ketamine

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To the Editors:

Electroconvulsive therapy (ECT) has long been regarded as the standard for quick antidepressant response. Recently, ketamine has been touted as an even faster antidepressant, notably in the report by Ghasemi et al. (2014) in which 18 patients (nine in each group) were given three intravenous ketamine infusions or three ECT treatments and followed for 1 week (Ghasemi et al., 2014). While the response to ketamine is impressive, it should be kept in mind that such a 1-week comparison with ECT cannot be interpreted as showing that ketamine is either clinically superior or faster than ECT as a real-world treatment, in which lasting remission is the goal. Furthermore, the ECT response in the Ghasemi et al. study is not as rapid as expected.

In our clinical research group, the Consortium for Research in ECT (CORE), we have been collecting data on speed of response to ECT for nearly two decades (Husain et al., 2004; Kellner et al., 2010). In a cohort of 576 patients who received bilateral ECT in one of two large clinical trials, scores on the 24-item Hamilton Rating Scale for Depression ($HRSD^{24}$) were recorded at pre-ECT baseline and after each ECT. The mean decrease in $HRSD^{24}$ scores was 25.8% after one ECT session, 39% after two ECT sessions (n=568), and 49.3% after three ECT sessions (n=530). In our ongoing trial, Prolonging Remission in Depressed Elderly (PRIDE), in which geriatric depressed patients are treated with right unilateral ultrabrief pulse (RUL-UBP) ECT, the $HRSD^{24}$ score decreased by a mean of 7.6 points (24.5%) (n=185) after one ECT session, 11 points (35%) (n=184) after two ECT sessions, and 13.5 points (42.7%) (n=173) after three ECT sessions, demonstrating an early improvement trajectory similar to that of the bilateral group.

Like the emerging data on ketamine's effect on suicidal ideation, ECT has previously been shown to result in a rapid decrease in suicidal ideation and behaviors (Kellner et al., 2005; Fink et al., 2014).

The combination of ketamine and ECT, to date almost exclusively the use of ketamine as the ECT induction anesthetic agent, has shown no, or only modest, incremental antidepressant effect, either in speed of response or overall remission rates (Kranaster et al., 2011;

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Rasmussen et al., 2014). Perhaps, novel ways of combining ketamine infusions with ECT can be devised to deliver more rapid, and durable, remissions from severe depressive episodes.

The legitimate excitement about ketamine should be tempered in the service of avoiding inaccurate comparisons with ECT that might result in premature abandonment of a proven therapy, one that remains crucial to a subset of our most severely ill patients.

As investigators, it is our responsibility to seek new and better-tolerated treatments; as clinicians, it is our responsibility to provide patients reliable, evidence-based care. For ECT, that evidence base is vast; for ketamine, it is small, but increasing.

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