System for predicting individual response to electroconvulsive therapy

Technology #cu17136

This technology uses functional brain imaging (fMRI) to predict if a patient may benefit from electroconvulsive therapy (ECT).

Unmet Need: Method that predicts the efficacy of electroconvulsive therapy

Electroconvulsive therapy (ECT) is a powerful tool for the treatment of major depressive disorder and associated mental illnesses. However, ECT is only effective in about 50% of individuals, resulting in unnecessary side effects and medical costs. As such, there is a need for a method that predicts individual response to ECT to reduce unnecessary treatment.

The Technology: fMRI-based method predicts patient response to electroconvulsive therapy

This technology employs fMRI to measure brain functional connectivity patterns that predict patient response to ECT. This technology reveals a pattern of connectivity between two brain regions, the subgenual ACC (sgACC) and the dorsolateral prefrontal cortex (DLPFC), that significantly predicts the efficacy of ECT. In addition, changes within this connectivity network were correlated with improvement, suggesting this technology could also be used to monitor treatment efficacy and predict relapse in treated patients.

This technology has been demonstrated to predict response to ECT with greater than 90% accuracy.

Applications:

- Screening tool for predicting response to ECT
- Monitoring efficacy of ECT
- Predicting relapse in treated patients
- Research tool for studying additional connectivity patterns
Advantages:

- Reduces unnecessary side effects and medical costs
- Compatible with existing fMRI technologies
- Cost-effective

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Patent Information:

Patent Pending

Related Publications:

Tech Ventures Reference:

- IR CU17136
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