Switching between different modalities of Electroconvulsive Therapy (ECT): A naturalistic observational study in Singapore

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Introduction: In 2015, the electroconvulsive therapy service (ECT) at the Institute of Mental Health (IMH) in Singapore underwent an extensive revamp. One of the major changes was the expansion of electrode placement & pulse-width to include the options of: bitemporal (BT), bifrontal (BF), right unilateral (RUL) and ultra-brief right unilateral (UB-RUL). There is emerging evidence in literature about the advantages and disadvantages of different modalities of ECT with respect to efficacy, side effects, and effect on cognitive function. In daily practice, it is not uncommon for clinicians to switch from one modality of ECT to another during a course of ECT treatment. However, there is very limited data in literature which adequately describes the current practices of switching between different modalities of ECT.
Objective: In this study, we sought to characterize the current practice in IMH with regards to switching between different modalities of ECT.
Methods*:* We went through the electronic health records and ECT records of all patients in IMH who was initiated on an ECT treatment cycle in the year 2016. These patients were initiated on 1 of the 4 ECT modalities: BT, BF, RUL and UB-RUL. For each patient, we examined the records for each ECT session in the treatment cycle, looking out for switching between ECT modalities, and the documented reasons behind each switch.
Results: There were a total of 302 treatment cycles of ECT initiated in 2016. 55 (18.21%) of them involved switching from one modality of ECT to another. 16 cycles had more than 1 switch per cycle (12 with 2 switches, 3 with 3 switches, and 1 with 4 switches) while the other 39 had only 1 switch within each cycle. This added up to a total of 76 switches. 3 most common types of switches were: BF to BT (n = 20), BT to BF (n = 12), and UB-RUL to BF (n = 10). Only 27 (35.53%) out of the 76 switches had clearly documented reasons behind the switch. 3 most common reasons documented were: limited improvements (n = 17), no seizure (n = 4), and poor quality of seizure (n = 2).
Conclusions: To the best of our knowledge, this is the first naturalistic observational study characterizing the practice of switching between different modalities of ECT in a tertiary mental health institution. This study opens the door for additional studies to further characterize ECT switching, and examine differences between treatment cycles which included a switch and those which did not, with respect to efficacy, side effects and adverse effects to cognition.