Journal of Sleep Disorders & Therapy
ISSN: 2167-0277

Youssef, J Sleep Disorders Ther 2013, 2:4
DOI: 10.4172/2167-0277.1000123

Short commentary Open Access

Could Sleep Characteristics Guide ECT Electrode Placement: Implication for Bipolar Mixed States

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Despite advances in treatment of depression, Treatment-Resistant Depression (TRD) is still one of the most serious conditions. Severe depression has a huge negative impact on morbidity and mortality due to both mental and physical health of individuals, families, and society. Whether for Major Depressive Disorder (MDD) or Bipolar Disorder (BD), Electroconvulsive Therapy (ECT) has been the most potent and most rapidly acting form of treatment for TRD and/or sociality over the last 70 years.

Although bilateral ECT (BL) is still widely used as first choice in many centres, some academic centers start all patients undergoing ECT with unilateral electrode placement (UL), which has the advantage of lower cognitive side effects as demonstrated by randomized clinical trials. If no response is elicited with UL ECT, then patients are switched to BL ECT.

A proportion of patients undergoing ECT with either bipolar depressive episodes (or bipolar that was previously diagnosed as unipolar) switch to mixed episodes. In my experience, continuing with UL ECT during mixed episode is rarely helpful. On the other hand, switching to BL ECT is usually highly effective in resolving the mixed episode along with depressive symptoms. In addition, some studies support the fact that mixed and manic episodes respond to BL ECT [1-8]. Conversely, there is only one case report that showed response of a patient with mixed episode to UL ECT Smith et al. [9].

Although switch to manic episodes is easily recognized, switch to mixed episodes are frequently under-recognized or missed. Mixed episodes are commonly missed as patients usually continue to have depressed mood with no florid euphoria or grandiosity.

It should be noted that for the purpose of this article mixed episode is not confined to the DSM IV criteria that occurs in bipolar I disorder only. I also incorporated mixed hypomania as supported by my clinical observation and the extensive literature [2,7-9]. Mixed episodes can put patients at even higher risk of suicide as well as high morbidity if untreated.

Acrucial factor that can alert clinicians to mixed switches during a course of ECT is significant reduction in sleep below the normal for that specific patient. During mixed episode, sleep reduction is usually associated with irritability and increase in energy level (but sometimes also presents as "nervous energy"), and/or racing thoughts: all indicators of mixed switch in the context of depressed mood. Sometimes, suicidality is also present with further increased risk of suicide during mixed episodes compared to other episodes [8-13].

While insomnia or hypersomnia are both symptoms of a depressive episode, hypersomnia may be more common in bipolar depression (as opposed to unipolar depression), thus sleep reduction below normal can indicate switching. Secondly, inquiry about decrease need for sleep rather than getting less sleep is a crucial point in identifying a switch. Decrease need for sleep for several days is almost always a characteristic symptom (among others) of manic or mixed episodes and is a unique symptom of manic/mixed episodes that is not shared with other psychiatric episodes. Decrease need for sleep is less commonly assessed by clinicians, but is one of the most helpful symptoms in assessing switch during an ECT course. Also, depression scales (such as Montgomery Åsberg Depression Scale) that are commonly used for assessing depression (both clinically and for research) does not assess decreased need for sleep and would misclassify this symptom as insomnia. Although a mania scale as the Young Mania Rating Scalecan detect it, mania scales are less commonly used clinically especially if it is believed that the patient only suffers from depression.

In conclusion, careful assessment and attention to alerting signs of switching especially switching to mixed episodes would help detection of mixed states and allow tailoring of ECT treatment to maximize response to the needs of the patient. This could have implications in shortening ECT course (by switching from UL to BL), improving prognosis, and decrease suicidality. Further research is still needed to best study this issue.

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Received May 29, 2013; **Accepted** June 10, 2013; **Published** June 15, 2013

Citation: Youssef NA (2013) Could Sleep Characteristics Guide ECT Electrode Placement: Implication for Bipolar Mixed States. J Sleep Disorders Ther 2: 123. doi:10.4172/2167-0277.1000123

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