

CASE REPORT

Is Electroconvulsive Therapy Safe for Patient with Very Low BMI? A Case Report

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ABSTRAK

Laporan kes ini mengetengahkan kaedah penstabilan terapi elektrokonvulsif (ECT) yang cepat bagi pesakit kemurungan major (MDD) yang mempunyai indeks jisim berat badan (BMI) tersangat rendah. Kami melaporkan seorang suri rumah wanita berumur 55 tahun dengan masalah penyakit hipertiroid yang berada di dalam status eutiroid mengalami masalah kemurungan major dengan ciri khusus psikosis kongruen akibat daripada kematian suami pesakit. Paras BMI beliau hanyalah pada tahap 11 kg/m² disebabkan oleh anoreksia dan pesakit berkenderungan untuk membunuh diri. Preskripsi pemberian nutrisi secara parenteral sepenuhnya diberi dan rawatan ECT telah dilaksanakan untuk rawatan penyakit kemurungan secara penstabilan yang cepat di samping rawatan oral menggunakan ubat escitalopram 15 mg setiap malam. Penyembuhan sepenuhnya tercapai selepas rawatan terapi sebanyak sembilan kali ECT dan berat badan naik secara sihat di dalam wad. Pesakit telah dilepaskan pada tahap BMI sebanyak 13 kg/m² dengan selera makan yang baik. Secara kesimpulannya, rawatan ECT adalah selamat untuk pesakit kemurungan major yang mempunyai paras indeks jisim berat badan sangat rendah.

Kata kunci: terapi elektrokonvulsif, paras jisim indeks badan rendah, anoreksia, kemurungan major, penstabilan cepat

ABSTRACT

A case of rapid stabilization using electroconvulsive therapy (ECT) for a major depressive disordered (MDD) patient with life-threatening low body mass index (BMI) is reported. This case report focuses on a 55-year-old Malay housewife with underlying hyperthyroidism in a euthyroid state who presented with MDD with mood congruent psychotic features, which were precipitated by the death of her husband. Her BMI was only 11 kg/m² due to severe anorexia, and she was highly suicidal. Peripheral total parenteral nutrition was started and ECT was commenced for rapid stabilization on top of tablet escitalopram 15 mg nocte. Full remission was

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achieved after nine ECTs and steady healthy weight gain was achieved throughout admission. The patient was discharged at BMI of 13 kg/m² with good appetite. ECT was safe for very low BMI MDD patient.

Keywords: electroconvulsive therapy, very low bmi, anorexia, major depressive disorder, rapid stabilization

INTRODUCTION

Electroconvulsive therapy (ECT) was introduced by Ugo Cerletti in 1938 (Passione 2004). It is an effective treatment for major depressive disorder (MDD) (UK ECT Review Group 2003) and it is used for rapid stabilization of severe MDD patients who are highly suicidal, catatonic, psychotic, or with comorbidities that make pharmacological treatment less tolerable (Lamprecht et al. 2005). ECT is generally a safe procedure with mortality rates of 0.19 deaths per 10,000 ECT treatments (Popeo 2009). Nevertheless, to date there is limited literature regarding the safety of ECT in very low body mass index (BMI) patient. Here, a case of use of ECT in a severe MDD patient with life-threatening low BMI is reported.

CASE REPORT

The patient was a 55-year-old Malay housewife with underlying hyperthyroidism in euthyroid state. She presented to psychiatric service for four months history of major depressive episode after her late husband passed away. She was characterized by depressed mood, anhedonia, psychomotor retardation, severe anorexia and tremendous weight loss. She also had nihilistic delusion,

thinking that her internal organs ceased to function and she no longer existed in this world. To add to it, she had second person auditory hallucination commanding her to kill herself. There were persistent thoughts of ending her life, but she was too weak to attempt suicide.

She was admitted for one month and treated with oral fluoxetine, which was optimized until 40 mg daily. In view of poor response to pharmacotherapy and the need of rapid stabilization due to deteriorating physical health, she was transferred to another hospital with psychiatry service and ECT facility. Upon transfer, the patient's depressive symptoms and psychotic symptoms persisted. Examination revealed an alert, dehydrated cachexic Malay lady who appeared older than her age. Her BMI was only 11 (weight 25kg, height 152.5cm) with no hypothermia, hypotension or bradycardia. She was guarded and not fully cooperative. Prominent psychomotor retardation was noticed. Her speech was not spontaneous but relevant and coherent with reduced in tone, volume, rate, and amount. She was depressed and her affect was appropriate, non-reactive and restricted. She had active suicidal idea, nihilistic delusion, and second person auditory hallucination that commanding her to commit suicide.

She was oriented to time, place, and person.

Initial investigations showed hypokalemia (3.1 mmol/L) and hyponatremia (120 mmol/L) with normal calcium (2.34 mmol/L), phosphate (1.23 mmol/L), and magnesium (0.83 mmol/L) level. Her hemoglobin level was 11.5 g/dL with hematocrit of 35.1%. She had hypoalbuminemia (31 g/L) while other liver function parameters were normal. Her urine culture and sensitivity showed positive growth of *Morganella morganii*. CA 125 was slightly raised at 40 U/ml (normal range: 0-35). Other tumor markers (CEA, Alpha-fetoprotein, CA 19.9 and Beta-HCG) were within normal range. Computed Tomography (CT) scan of thorax, abdomen, and pelvis revealed an incidental finding of right adnexa cystic lesion which was suggestive of right ovarian cyst; while CT scan of the brain showed small hypodensity in the left anterior limb of the internal capsule.

She was diagnosed with MDD with mood congruent psychotic features, malnutrition, electrolyte, right ovarian cyst, and hyperthyroidism in euthyroid state. Multidisciplinary approach was used to manage this patient. Her vital signs, oral intake, parenteral fluid, and urine output were monitored closely. Electrolyte imbalance was corrected and suicidal caution was activated. Complete bed rest was initiated. Intravenous Cefotaxime 1 g twice daily was started for the urinary tract infection and tablet carbimazole 10 mg once daily was continued. The patient was also given peripheral total parenteral nutrition (pTPN) with potassium supplement for one week by the

Nutrition Support Team. Her fluoxetine was changed to oral escitalopram 10 mg nocte which was optimized further to 15 mg nocte.

ECT was initiated on day five of admission after preoperative assessment from the anesthesiology team. It was done three times a week, on alternate days. General anesthesia induction agent used was propofol while a muscle relaxant agent was suxamethonium. Her initial charge was 64mC and good electroencephalogram (EEG) seizure was recorded. For her second ECT, charge was increased by 50% to achieve supra seizure threshold. Subsequent ECT charge was gradually tapered up by 10% if seizure duration was less than 15 seconds. A total of nine therapeutic ECTs were carried out and patient was able to achieve full remission. Hence ECT was stopped. Upon discharge, the patient's weight was 31.9 kg with the BMI of 13. Appetite was very good and electrolytes level had returned to normal. During subsequent follow ups, the patient remained in full remission with oral escitalopram 15 mg nocte and could maintain a steady weight gains.

DISCUSSION

The patient's severe depressive and mood-congruent psychotic state resulted in the reduction of her BMI to a life-threatening level. Hence, rapid stabilization was necessary. As the patient had severe anorexia, peripheral TPN was used to achieve the steady weight gain at a safe rate in order to avoid refeeding syndrome, a serious complication that may occur during initial phase of nutritional support. The

aim of weight gain was 0.5 to 1 kg/week in inpatient setting while monitoring the potassium, calcium, phosphate, and magnesium level closely.

Refeeding strategy alone was inadequate as the patient's anorexia state was caused by her MDD. Hence, ECT was given as a measure of rapid stabilization. Pre-operative assessment was carried out carefully as the patient had multiple comorbidities that increased the risk for anesthesia, i.e. hyperthyroidism, severe malnourishment, and electrolyte imbalance.

Callari et al. (2012) treated a patient with catatonia in bipolar disorder and severe comorbidities successfully with ECT. That patient had BMI of 15, deep-vein thrombosis, pressure ulcer, and systematic infections. With support of ICU care and medical treatment, including antiplatelet therapy, the patient underwent ECT, uneventfully. Poutanen et al. (2009) gave maintenance ECT for a patient with anorexia nervosa with low BMI (ranging from 14.8 to 15.3) that had comorbidity of MDD. No complication were observed during throughout the ECT.

From the experience encountered in this case, it is safe to conduct ECT on a patient with life-threatening low BMI that has MDD in order to achieve rapid improvement. Nevertheless, involvement of different disciplines such as anesthesiology and nutrition support team is necessary.

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