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Introduction

Electroconvulsive therapy (ECT) should be used carefully for senile patients because of its side effects, while ECT has the advantage of acute response to therapy compared with pharmacotherapy. Tew et al. reported that even the oldest patients (over 75 years old) with severe major depression tolerate ECT in a manner similar to that for younger patients and demonstrate similar or better acute response, despite a higher level of physical illness and cognitive impairment (1). The depression associated with cerebral infarction (vascular depression, VD) is more resistant to treatment than that without cerebral infarction. There are relatively few data addressing the outcome of ECT for senile patients, especially over 80 years of age.

We observed that two senile patients of VD were immediately responded to ECT and improved the symptoms. They showed no remarkable adverse reactions of ECT.

Case 1

A 81-year-old woman with history of hypertension was admitted to the psychiatric inpatient unit at our hospital for evaluation and treatment of depression. She was married and retired, living with her husband. After her husband met a traffic accident, she had gradually become depressed 3 months before admission. She was treated with amoxapine (100mg/day) in an outpatient clinic, but failed to respond. Subsequently she was referred to our hospital for evaluation and medication.

Her past psychiatric history and her family history was negative. The head CT showed right occipital old infarction (Figure 1). Hamilton Depression Scale (HAM-D) was 27. On admission, she had morbid ideas and said "I might be seriously wounded like my husband." "My husband might be died and I become alone." She was treated with amoxapine (100mg/day) and olanzapine (2.5mg/day), but failed to respond, tended to refuse meals, had been lying in her bed all day, so the risk of articular contracture increased. We concluded that administration of ECT was required in order to rapid improvement of her depressed symptoms. After providing informed consent, she underwent a course of 10 brief pulse bilateral (frontotemporal) ECT treatments. The ECT was initiated using Thymatron System IV twice a week with 40%~100% stimulation doses.

She recovered promptly without critical side effects, and became able to eat and walk in the ward with smile. She was discharged on the 175th day after admission. After discharge, the patient was in remission from depression and continued recovering while taking amoxapine (75mg/day) and mirtazapine (22.5mg/day).

Case 2

84-year-old woman with history of diabetes mellitus, hypertension, hyperlipidemia was admitted to the psychiatric inpatient unit at our hospital for evaluation and treatment of depression. She was married and retired, living with her son's family. She had experienced her first depressive episode 8 years before admission and had treated by approximately one-year in a psychiatric hospital. After discharge, she got outpatient treatment in remission with paroxetine (40mg/day) and sulpiride (150mg/day) in a nearby clinic regularly. Eight years later, she became depressed again and had paranoia and hallucination. She said "I can hear the wire broadcasting all the time." "I have money stolen from a person of the religion. I am murdered." Subsequently, she was referred to our hospital for evaluation and medication.

Her family history was negative. The magnetic resonance imaging (MRI) revealed multiple lacunar infarction and periventricular ischemic lesion (Figure 2). Revised Hasegawa's dementia scale (HDS-R) score was 12/30 at the time of admission. We suspected delirium related to antidepressant and discontinued paroxetine. Her delirium improved but her depression worsened. She was treated with milnacipran but failed to respond. Her dietary intake decreased and she became stuporous. After providing informed consent, she underwent a course of 8 brief pulse bilateral (frontotemporal) ECT treatments. The ECT was initiated using Thymatron System IV twice a week with 40%~60% stimulation doses.

She recovered promptly without critical side effects, and became able to eat. Hallucinations and delusions disappeared. She was discharged on the 99th day after admission. After discharge, the patient was in remission from depression and continued recovering while taking sulpiride (100mg/day) and milnacipran (150mg/day).

Discussion

Wilkinson et al. reported that dividing subjects into above and below 65years age and comparing response to ECT showed that 19 of 35 (54%) in the younger group and 31 of 43 senile patients (73%) made a positive response(2). Tew et al. also reported that the adult (59 and younger) patients experience a significantly lower rate of ECT response (54%) than the young-old (60 to 74 years) patients (73%), while the old-old (75 and older) patients had an intermediate rate of response (67%)(1). Moreover, O'Connor et al. found ECT to be significantly more effective in patients older than 65 years compared with patients younger than 45 years(3).

On the other hand, how is tolerance? Damm et al. reported that transient cardiovascular adverse effects and cognitive disturbances were more frequent in the elderly, but in most cases, there was no need for any specific treatment(4). Hausner et al. reported that cognitive side effects after ECT were reversible and transient, even in dementia subjects, and, preexisting cognitive deficits were the best clinical predictor of a reversible cognitive decline(5). In senile depressive subjects, high-dose right unilateral ECT is as effective as bilateral ECT yet produces less adverse effects and less cognitive impairment(6).

As Alexopoulos and Krishnan advocated the concept of VD(7)(8), when we treat depressed senile patents, it is necessary to consider the depression caused by cerebrovascular disorder. VD require longer hospital treatment and have more drug-related adverse reactions of the central nervous system (delirium, parkinsonism, dyskinesia, akathisia)(9). Therefore, ECTs are performed in treatment-resistant cases and in cases that require urgent improvement.

Figure 1: Time course of Case1

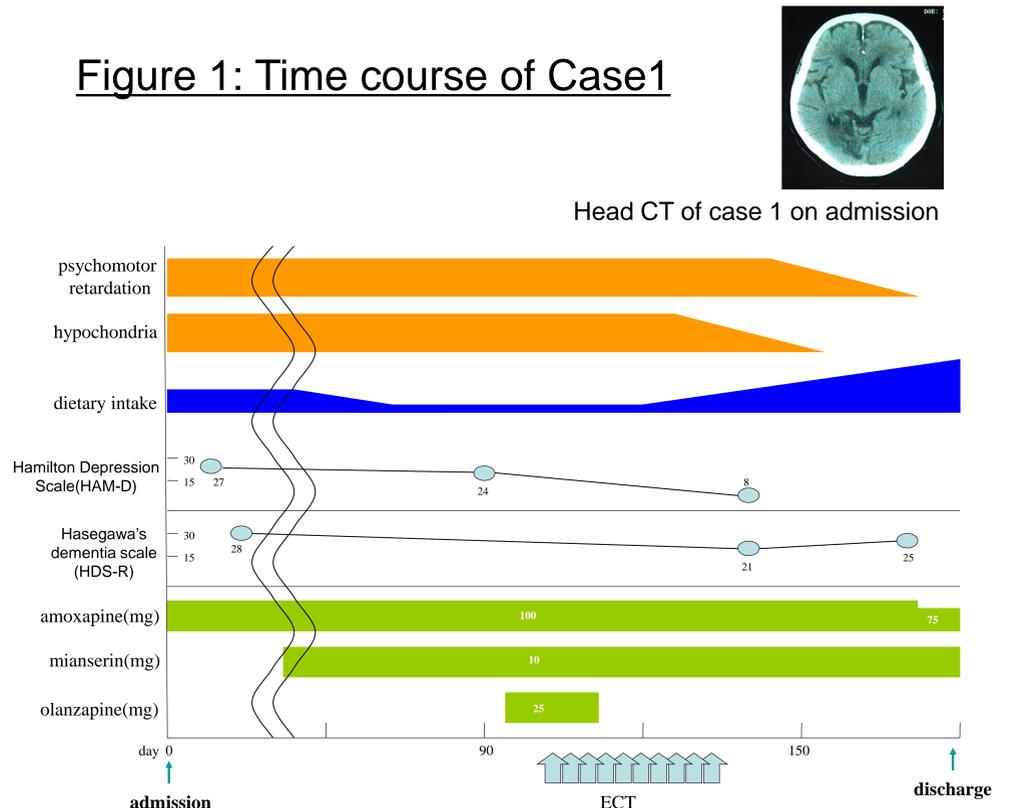
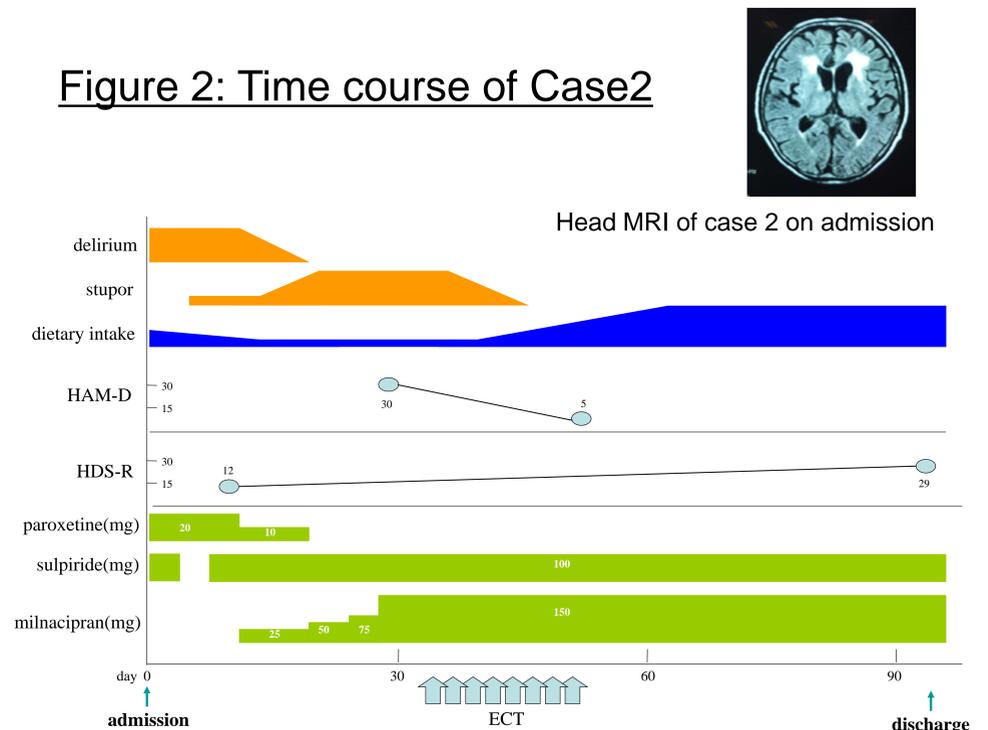


Figure 2: Time course of Case2



Conclusions

We showed 2 cases of senile VD patients who had inadequate response to antidepressant treatments and significantly improved by ECT without critical side effects. According to previous literatures and our cases, ECT may be useful for senile patients with VD.

References

1. Tew JD Jr et al. : Acute efficacy of ECT in the treatment of major depression in the old-old. Am J Psychiatry 1999 ; 156 : 1865-1870
2. Wilkinson AM et al. : Age and the effects of ECT. Int J Geriatr Psychiatry 1993 ; 8 : 401-406
3. O'Connor MK et al. : The influence of age on the response of major depression to electroconvulsive therapy : a C.O.R.E.Report. : Am J Geriatr Psychiatry 2001 ; 9 : 382-390
4. Damm J et al. : Influence of age on effectiveness and tolerability of electroconvulsive therapy J ECT 2010 ; 26 : 282-288
5. Hausner L et al. : Efficacy and cognitive side effects of electroconvulsive therapy(ECT) in depressed elderly inpatients with coexisting mild cognitive impairment or Dementia J Clin Psychiatry 2011 ; 72 : 91-97
6. Stoppe A et al. : Fixed high-dose electroconvulsive therapy in the elderly with depression of efficacy and tolerability between unilateral and bilateral electrode placement. J ECT 2006 ; 22 : 92-99
7. Alexopoulos GS et al. : Vasccular depression hypothesis. Arch Gen Psychiatry 1997 ; 54 : 915-922
8. Krishnan KRR et al. : MRI-defined vascular depression. Am J Psychiatry 1997 ; 154 : 497-501
9. Fujikawa T et al. : Response of patients with major depression and silent cerebral infarction to antidepressant drug therapy with emphasis on central nervous system adverse reactions. Stroke 1996 ; 27 : 2040-2042