

Treatment of pathologic laughing with duloxetine in stroke patients

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Introduction

Pathologic laughing, a type of emotional incontinence, refers to a condition characterized by uncontrolled episodes of laughter caused by neurologic disturbance. This pathologic state can cause social dysfunction exacerbated by the inappropriate expression of feelings, and it does not improve spontaneously once it occurs. Several medications including selective serotonin reuptake inhibitors have been tried for treatment but the effect is still controversy. Duloxetine, a dual reuptake inhibitor of serotonin and norepinephrine, has been reported to be effective in mood disorder. However, there has been no study on the effects of duloxetine on post-stroke pathologic laughing. Here we present seven cases of pathologic laughing after stroke treated with duloxetine.

Case

Pathologic laughing was defined if patients showed following features: first, laughing could not be controlled voluntarily; second, laughing was triggered by nonspecific stimuli; third, laughing was irrelevant to the preceding emotional state. Medical records and history of patients were reviewed and only those with no previous history of neurologic or psychiatric disorders or drug addiction were selected. Clinical characteristics of the patients are shown in Table 1. Duloxetine was started on an initial dose of 30 mg once daily. The dose was increased 60 mg once daily after one week except two patients. The pathologic laughing scale was assessed daily from when duloxetine was administered. All patients showed a change of score within two weeks after administration (Table 2). After duloxetine administration, all patients reported subjective improvement of symptom. There was no deterioration of the pathologic laughing score in all patients and the change of the score was more than 50% in four patients. No serious side effects were observed in all patients.

Conclusion

Duloxetine is effective in improving pathologic laughing in post stroke patients. This study is meaningful as the first study to investigate the effects of duloxetine in pathologic laughing cases of post stroke patients. As this study is a pilot study without a control group, further controlled study is needed.

Table 1. Clinical characteristics of the patients

	Sex	Age	Etiology	Lesion location	MMSE	Medication in Use
Patient 1	M	47	Hemorrhage	Pons	28	Atomoxetine 10mg#1
Patient 2	F	40	Infarction	Pons	25	None
Patient 3	F	37	Infarction	Pons	30	None
Patient 4	F	38	Infarction	Pons	25	None
Patient 5	F	54	Hemorrhage	Pons	30	None
Patient 6	F	46	Hemorrhage	Pons	30	None
Patient 7	M	44	Hemorrhage	Pons	29	None

MMSE, Mini Mental State Exam

Table 2. Dose and Effects of Duloxetine for Each Patient

	Dose	Initial PL score	Final PL score	Days to respond	Side effect
Patient 1	30mg#1	8	6	3	None
Patient 2	30mg#1 → 60mg#1	12	7	13	None
Patient 3	30mg#1	8	3	14	None
Patient 4	30mg#1 → 60mg#1	16	12	9	None
Patient 5	30mg#1 → 60mg#1	12	0	14	None
Patient 6	30mg#1 → 60mg#1	21	8	4	None
Patient 7	30mg#1 → 60mg#1	4	2	13	None

PL, Pathologic Laughing