

외상성 뇌손상 환자에서 Amantadine의 치료적 효과 : 2증례 및 고찰

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Therapeutic Effect of Amantadine in Traumatic Brain Injury Patients : Two Cases and Review

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ABSTRACT

We reported two cases of amantadine treatment in traumatic brain injury patients and reviewed the literature of amantadine treatment of those patients. Problems with short-term memory, attention, planning, problem solving, impulsivity, disinhibition, poor motivation, and other behavioral and cognitive deficit could occur following traumatic brain injury or other types of acquired brain injury. This report described results of amantadine using in two patients with this type of symptom profile. Patients received neuropsychiatric examination as well as BPRS and Barthel index. These patients were improved, respectively from 57 point to 82 point(case 1), from 85 to 94(case 2) in Barthel index, and from 66 point to 35 point(case 1), from 55 to 32 point(case 2) in BPRS. These two patients did not reveal any other adverse effect. The rationale for using amantadine were discussed.

KEY WORDS : Amantadine · Traumatic brain injury(TBI) · Dopamine agonist · NMDA receptor antagonist.

서 론
 (Middleton J 1989) 가
 가 (Gu-altieri T
 1989). Vecht (1975)
 (dopamine metabolites)
 가 ,
 가 Brown (1979)
 가 . Levin Kraus(1994)
 (decreased alertness), (lack of initi-
 ation), (sluggish cognitive (dopaminergic agents) (seq-
 and motor activity)가 .(Middleton J 1989) uelae)
 가 (pathophy-
 siologic process) (excitatory neurotra-
 nsmission)
 (Bricolo Glick 1981). glutamate
 aspartate 가
 (Cawley 1998). Kornhuber Weller (1995)

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가 glutamate NMDA 가 가
 receptor antagonist가 (ne-
 uroprotective agent)

Amantadine (dopam-
 inergic transmission) (Aoki Sitar 1988)
 NMDA(N - methyl - D - aspartate) glutamate re-
 ceptor antagonist (Kornhuber Weller 1997) Amantadine 50mg
 가
 , , 3 50mg 300mg/day
 amantadine valproic acid 900mg/day

2가 , ,
 Barthel index BPRS 57 , 66
 amantadine 3 Bradykinesia가
 , 7 ,

증 례

증 례 1 : Barthel index 73 16 , BPRS
 55 41 25
 1985 가 , , ,

가 , 가
 . 1999 2 20
 Brain CT (cy-
 stic mass in left temporal area) 2 Barthel index 80
 23 4 82
 . 1999 3 2 . BPRS amantadine 2 4
 , Brain MRI 38 35 , 1
 (porencephalic cyst in
 left temporal and frontal area with tissue loss) (1, 2).
 (interval change)

1999 5 7 EEG lead 3 - 5Hz 증 례 2 :
 (irregular slow wave)가 40 1999 12 3 가
 (moderate abnormality) 가
 carbamazepine 600mg (confusional mental state)가

가 Brain MRI
 (subdural hygroma on left frontal lobe)
 (disorientation), , ,
 (memory and learning impairment), (inattention), 가
 (aphasia), (irrelevance), (confabulation),
 (dysarthria), (apraxia), (agnosia),
 (disturbance in executive functioning) (disinhibited beha-
 vior) 가

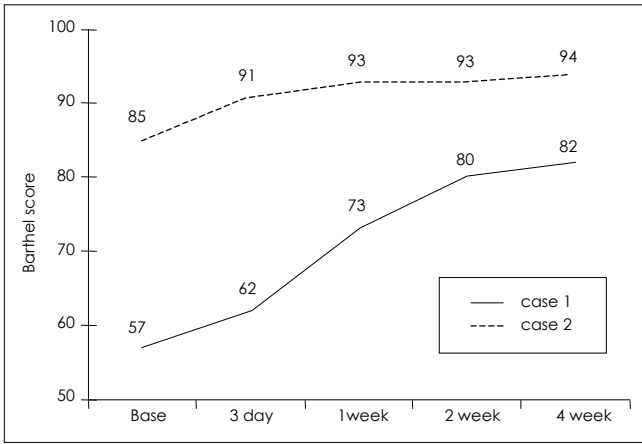


Fig. 1. Barthel index score during the amantadine treatment.

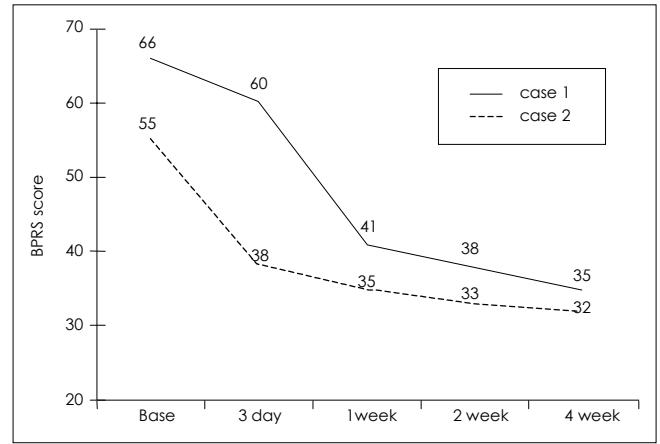


Fig. 2. BPRS score during the amantadine treatment.

가
가
5mg, alprazolam 1.2mg
가
가
가
(disorientation),
(memory impairment),
(aphasia), (confabulation),
(apraxia), (agnosia),
(disturbance in executive functioning),
(labile mood), (sleep disturbance)
가

index BPRS . 13
(attention) (recent me-
mory) 가
. 30 ,
amantadine 4 Bar-
thel index 85 94
BPRS 55 32
(1, 2).

고 찰

가
,
Brain MRI
(subdural hygroma on
left frontal lobe), brain SPE-
CT, EEG
Amantadine 100mg 2
. 3 100mg 300mg/
day
amantadine Barthel index BPRS
85 94
Amantadine 3

(neuropsychiatric)
amantadine
가 Barthel index BPRS
Barthel index
95 . Granger (1979)
Barthel index
Barthel score가 40
가 40 60
, 60
Hertanu (1984)
Barthel score가
(brain computerized tomography)

가
, 7
가 Barthel index BPRS 85 35
amantadine Barthel
2가
가 Barthel index
가 Brief Psychiatric
Rating Scale(BPRS)
가
ama-

ntadine
 가 Barthel index amantadine cortical recovery 가
 1 BPRS 가 (Gual-
 tieri Evans 1988 ; Reiser 1988).
 amantadine 가
 (Kraus Maki 1997). amantadine
 . Gualtieri (1989) 2 144 (central neuron)
 30 amantadine (Aoki Sitar
 가 가 1988), (postsynaptic)
 가 . 19 (63%)가 가 (Gianutsos 1985)
 , (Allen 1983). dop-
 14 가 , 5 amine agonist
 가 가 . amantadine
 amantadine 50~400mg/day , prolactin
 288.3 ± 87.3mg/day . (hypothalamic dopamine receptor)
 , Andersson (Siever 1981). Amantadine mesolimbic mesocor-
 (1992) amantadine tical dopamine system
 200mg 400mg 2 (striatal dopamine receptor)
 . Nickels (1994) amantadine 가 (Allen 1983)
 12 12 10 amantadine
 , , , , amant- NMDA (NMDA receptor antag-
 onist) 가 . Kornhuber Weller
 adine , , , , (1995 ; 1997) NMDA PCP binding site
 (affinity) 가 phencyclidine(PCP), MK -
 (1995) 6 Van Reekum 801, ketamine , amantadine NMDA
 psychotogenicity가 ,
 NMDA
 (apathy), (amotivation), (slowness), channel activity
 (perseveration) 가 amantadine
 . (neuroprotective agent)
 Amantadine (Kornhuber Weller 1997).
 , Kraus Maki(1997) 2
 amantadine
 . (excitatory amine) (aspartate)
 (Brown 1979). 가 (Faden 1989 ;
 Cawley 1998)
 (orbitofrontal lobe) (medial temporal (glutamate) (aspartate)
 lobe)가 가 (Levin 1992). NMDA
 Gualtieri (1989) (Faden Salzman 1992)
 가 amantadine glutamate aspartate 가
 가 가 (Cawley 1998).
 가 amantadine 가 가
 amantadine 가 NMDA (NMDA receptor antagonist pr-

operty)(Kornhuber Weller 1995 ; 1997)가

(neuroprotective agent)

NMDA (NMDA receptor antagonist)
(dopaminergic agonist)
가
Weller Kornhuber(1992) NMDA
(NMDA receptor inhibition) (cholin-
ergic transmission) (dopaminergic transmission)
Hesselink (1999) rats NMDA
(uncompetitive NMDA antagonist) memantine
(prefrontal cortex)
(dopamine metabolite) DOPAC(dihydroxyp-
henylacetic acid) HVA(homovanillic acid) 가 가
Zeevalk (2000)
(striatum)가 (substantia nigra)
(energy impairment) (dopamine
loss) NMDA 가 , Vol-
lenweider (2000) ketamine

D2 (striatal dopamine D2 receptor concentration)
가 NMDA 가
(dopamine system) (modulation)
, Kretschmer(2000) NMDA (NM-
DA receptor antagonist)
(ventral corticostriato - thalamocortical loop)
(nucleus accumbens) (output str-
ucture) (ventral pallidum) (do-
pamine release)가 가
amantadine
, 300mg/day
(
가 4~7) . moni-
toring
,
가
(sedating drug)

요 약
가

amantadine
(presynaptic) (postsynaptic)
(dopamine neurotransmission)

, NMDA (NMDA receptor
antagonist) (excitotoxic subst-
rate) (neu-
roprotective agent) amantadine
,
가

가 , 가
가

중심 단어 : Amantadine · NMDA

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