

정신분열병 환자의 도파민 D₁ 수용체 유전자형과 치료반응간의 연관백종우* · 이민수*[†] · 이충순** · 임동준* · 함원훈***The Association between the Dopamine D₁ Receptor Genotype and Treatment Response in Korean Schizophrenic PatientsJong Woo Paik, M.D.,* Min Soo Lee, M.D., Ph.D.,*[†] Choong Soon Rhee, M.D., Ph.D.,**
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ABSTRACT

Background : Dopamine receptors have been regarded as a strong candidate involved in etiology of schizophrenia and a target for various antipsychotic drugs. The purpose of our study was to investigate whether dopamine D₁ receptor(DRD1) gene polymorphisms would predict the treatment response to antipsychotics in schizophrenia.

Method : One hundred thirty - four schizophrenic patients, who met DSM - criteria for schizophrenia were entered into a 48 - week study. The psychopathology of the patients was assessed at baseline, 12th, 24th 48th weeks of treatment by PANSS. Responders were defined by a 20% of the reduction in total PANSS score at end point. The genomic DNA fragment corresponding to nucleotides of dopamine D₁ receptor gene was amplified by polymerase chain reaction(PCR).

Result: Neither allelic frequencies nor genotypes for dopamine D₁ receptor differed significantly between responders and non - responders. Also, there was no difference of changes of PANSS scores among three genotype groups of the dopamine D₁ receptor.

Conclusion : Allelic variation in the dopamine D₁ gene is not associated with individual differences in antipsychotic response.

KEY WORDS : Dopamine D₁ receptor · Receptor gene · Schizophrenia · Treatment response.

서
문

가

, 15~65%

(Melzer Ranjan

가

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(Arranz 1998a).

가

(Sawaguchi 1991), (positron emission tomography) DRD1 가 (Wisconsin card sorting test) 가 (Okubo 1997a), (Okubo 1997b). D₁ 가 가 가 D₁ 가 (Brown Herz 1989). 가 HVA 5 - HIAA 가 HVA HVA (Chang 1990 ; Davidson 1991). 가 HVA (Picker 1992) DRD2 DRD4 가 (Arranz 1998a ; Peter 1994). (Arranz 1998b)가 D₁ 가 D₁ 가 202 가 D₁ 가 23 D₁ (Rao 1991). 1990 D₁ 가 (Coon 1993 ; Liu 1995 ; Dollfus 1996). (1997) (pharmacogenetics) D₁ (Wong 2000). D₁ 가 (prefrontal cortex) 가 (working memory)

연구대상 및 방법

1. 연구대상

1998 4 1999 3 20 65 4 (DSM -) 가

2. 연구방법

1) 유전자형 분석

(1) Genomic DNA 1.5ml 13,000rpm 1 pellet ACE shocking solution(NH₄Cl 8g, Na₂EDTAH₂O 1g, KH₂PO₄ 0.1g 1l) 500 μl 3 pellet 400 μl nucleic lysis Buffer[Tris(pH 8.0) 10mM,

NaCl 400mM, EDTA 2mM] pellet .
 10% SDS 27 μl proteinase K 10 μl 가 56
 2 saturated NaCl 135 μl
 15 . 13000rpm 1
 2

DNA . DNA 70%
 , 100 μl .
 (2) (Polymerase Chain Reaction : PCR)

D₁ 5' untranslation region -
 48 A G Forward 5 - ACTGA-
 CCCCTATTCCCTGCT - 3' Reverse 5 - AGCACAGACCAG-
 CGTGTTTC - 3' primer(Sven et al 1994)

Template DNA 200ng, primer 20 pmol,
 dNTP 200 μM, Taq polymerase 3U(Takara, Japan)
 25 μl 94 10 1
 94 30 , 60 30 , 72 30
 35 , 72 10 1

(3)
 B1 B2 PCR Ddel
 2% ethidium bro-
 mide (ultraviolet transillumi-
 nator) polaroid (polaroid, film 667)

2) 임상증상의 평가

가 48 12
 Positive and Negative Syndrome Scale(PANSS) (Kay
 1987) PANSS
 20%
 (B1B1, B1B2, B2B2)
 가 가 가
 가 workshop
 video tape 가 가 0.8

3. 통계분석

(B1B1, B1B2,
 B2B2) chi - square
 PANSS 48
 repeated measure ANOVA

SPSS/PC+ version 10.0 , 0.05

결 과

1. 인구사회학적 특성

134 (77 , 57)
 , 48 (28 , 20)
 86 (49 , 37)
 38.1 ± 6.69 , 39.85 ± 7.15 ,
 22.36 ± 7.91 , 23.75 ± 6.43 .
 , 가

(가
) 1065 ± 694mg, 1128 ± 781mg
 (1).

2. 도파민 D₁ 수용체의 유전자형에 따른 분포

B1B1 4 3.0%, B1B2 28 20.9%, B2B2
 102 76.1% B1 B2
 23.9%, 97.0% (2).

3. 도파민 D₁ 수용체의 유전자형과 치료반응과의 관계

48 12
 PANSS

Table 1. Demographic data in samples of Korean schizophrenic patients

	Responders	Non-responders
Sex		
Male	28(36.4)	49(63.6)
Female	20(35.1)	37(64.9)
Age(yrs)	38.10 ± 6.69	39.85 ± 7.15
Age of onset(yrs)	22.36 ± 7.91	23.75 ± 6.43
Type		
Paranoid	22(40.0)	33(60.0)
Disorganized	3(30.0)	7(70.0)
Catatonic	2(100)	0(0)
Undifferentiated	13(29.5)	31(70.5)
Residual	5(25.0)	25(75.0)
Family history		
Present	4(3.0)	8(6)
Unknown	21(15.7)	44(32.8)
None	23(17.2)	34(25.4)
Previous hospitalization	3.00 ± 1.61	3.98 ± 2.87
Dosage	1065 ± 694mg	1128 ± 781mg
(%)		

중심 단어 : D₁

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