

조기 발병한 정신증적 장애에서 자기공명영상을 이용한 측뇌실에 대한 구조적인 예비연구*

THE PRELIMINARY STUDY OF THE QUANTITATIVE MORPHOLOGIC ANALYSIS USING MRI OF THE LATERAL VENTRICLE IN EARLY-ONSET PSYCHOTIC DISORDER

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연구 목적 :

가

가

방 법 : DSM - -R 14 (14.0 ,
2.1) 26

가 (axial image)

NIH IMAGE

결 과 : , 가 가 가

결 론 :

중심 단어 :

* 1999 5 7 Asian Society for Child and Adolescent Psychiatry and Allied Professions
This paper was presented at the poster session of the Asian Society for
Child and Adolescent Psychiatry and Allied Professions May, 7, 1999, Seoul.

(INHA - 21074) . This research was partially
supported by the Inha University Research Grant (INHA-21074).

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가 가

서 론 NIMH 21 MR

Kraepelin (psychosis) (dementia praecox) (manic depressive illness)

가 Finding¹²⁾ 11¹⁰⁾¹¹⁾

1)

가 VBR¹³⁻¹⁶⁾ 가가

가

가

가

2-4) Crow (psychosis)⁵⁾ 가

(thalamus), (limbic structure), (hypothalamus), (basal ganglia)

가

6)

대상 및 방법

1. 연구 대상

1988 1 1994 12

6)

가) () 가 .

7) DSM - -R¹⁷⁾ , 14 (14.0 , 2.1) 가 7 , 가 7 .

Schulz⁸⁾ (Computerized Tomography : CT) 15 (schizophrenia spectrum disorder)

(Ventricular Brain Ratio : VBR)가 가 . Reiss 10.4 , 2.1) , 26 (가 18 , 가

9) CT , 8 .

20 5 , 9

11 (79%) , 가
 7 (50%) ,
 1 (7%) .
 가 2 (14%) . 7.6 (3.0) , (FslQ) 91.4(19.8) .

2. 연구 방법

1) 자기공명영상 촬영과정

2.0T Gold Star SPECTRO - 20000 spin - echo (axial image) (sagittal plane) T2 (TR 3000ms/TE 50~100ms), 6mm, 2mm, field of view(FOV) 20~23cm

가 (Vista S6E, UMAX) TIFF (TIFF graphic format) 7600 (PowerMachintosh 7600/120, Apple)

2) 영상의 분석과 면적측정법

(1) 7600 NIH IMAGE 1.60¹⁸⁾ mm² .
 (2) (Lateral Ventricle : V), (Parenchyme : P) (Ventricle to Brain Ratio : VBR) (axial image) . (axial image) (body) 가 가 (region of interest : ROI) (/)

3) 통계적 분석

(sex) 2 - test two - tailed Student's t - test , VBR 가 two - tailed Student's t - test . VBR ANCOVA 가 , VBR Pearson's correlation 가 paired t - test , Window SPSS version 6.1¹⁹⁾

결 과

(sex) (14.0 , 2.1, 10.4 , 2.1, t=5.16, p<0.001).

1) 측뇌실, 뇌실질, VBR의 분석

, VBR (p=0.054, p=0.549, p=0.063). 16181.986(±1737.115), 15898.208(±1212.944), 835.136(±394.441), 643.027(±219.442) , VBR 0.0485(±0.0200), 0.0387(±0.0124) VBR (Table 1).

2) 연령의 영향을 배제하기 위한 VBR에 대한 ANCOVA 결과

가 ,

Table 1. Planimetry results for Early-onset Psychotic Disorder(EOPD) and control group

	Area(mm ²)				T-test	
	EOPD(N=14)		Control(N=26)		t	p
	Mean	SD	Mean	SD		
Parenchyma	16181.99	1737.11	15898.21	1212.94	0.605	N.S.
Lateral ventricle	835.14	394.44	643.03	219.44	1.989	N.S.
Ventricle brain ratio	0.04850	0.00999	0.03872	0.00237	1.914	N.S.

N.S. : not significant

Table 2. Correlation between age and region of interest for Early-onset Psychotic Disorder(EOPD) and control group

	EOPD(N=14)		Control(N=26)	
	r	p	r	p
Parenchyma	0.354	N.S.	0.074	N.S.
Lateral ventricle	0.583	p<0.05	-0.091	N.S.
Ventricle brain ratio	0.542	p<0.05	-0.092	N.S.

N.S. : not significant

Table 3. Paired t-test results of lateral ventricles for Early-onset Psychotic Disorder(EOPD) and control group

	Area(mm ²)				Paired t-test (P)
	Left lateral ventricle		Right lateral ventricle		
	Mean	SD	Mean	SD	
EOPD	444.371	193.410	390.764	212.781	N.S.
Control	345.585	136.806	297.442	97.977	p<0.05

N.S. : not significant

VBR
가 , ANCOVA

95% p=0.443

paired t - test

3) 뇌실질 크기, 측뇌실 크기, VBR과 연령의 상관관계에 대한 분석

가 , VBR
Pearson's correlations
가 (Pearson correlation, 0.354, p=0.214),
가 (Pearson correlation, 0.583, p=0.029),
VBR(Pearson correlation, 0.542, p=0.046)
(Table 2).
가 , VBR
(Table 2).

(Table 3).

고 찰

가

4) 환자군과 대조군의 좌·우 측뇌실 비대칭성 여부에 대한 분석

VBR 가
Schulz⁸⁾ Reiss⁹⁾

가
 , VBR
 1
 85%
 , VBR 가
 , VBR 가 13
 18
 Giedd 20)
 3 70
 erbaum 21)
 10 가 가
 , 30
 가 9.8~
 18.2 (14.0 , 2.1), 7.4~
 14.6 (10.4 , 2.1) , Pfe-
 fferbaum
 VBR 가

가
 ,
 ,
 가
 가
 가
 MRI
 가
 Pfeff-
 , , , 가
 가
 가
 (prospective) 가
 , Pfe-

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Objective : The enlargement of the lateral ventricle is well established finding in adult-onset schizophrenia, but in the patients with early-onset psychotic disorder (EOPD) is still controversial. To identify structural abnormalities of the lateral ventricle in patients with EOPD and difference of the brain developmental course in EOPD group, planimetric assessment of the lateral ventricle was conducted by means of retrospective quantitative neuroimaging.

Methods : The brain MR images of 14 patients with EOPD (mean age 14.0 ± 2.1 years) who met the DSM-III-R diagnostic criteria for schizophrenia and bipolar disorder and 24 control subjects with simple headache (mean age 10.0 ± 2.1 years) were collected. Single best view for the lateral ventricle, one axial slice was selected for analysis. MR images were redigitalized with flatbed scanner and data were analyzed with NIH IMAGE software.

Results : In the patients with EOPD, there were significant correlations between aging and lateral ventricular sizes and between aging and ventricular brain ratio (VBR). The statistical significance of normal asymmetry of the lateral ventricle was not observed for the EOPD group. The EOPD group had larger lateral ventricular sizes and VBR than control group, but these results were not statistically significant.

Conclusion : These findings suggest that the brain abnormalities in patients with EOPD progress from the earlier course of the disorders and the course of brain development in EOPD group is different from control group.

KEY WORDS : Early-Onset · Psychotic Disorder · Lateral Ventricle · MRI · Morphology.