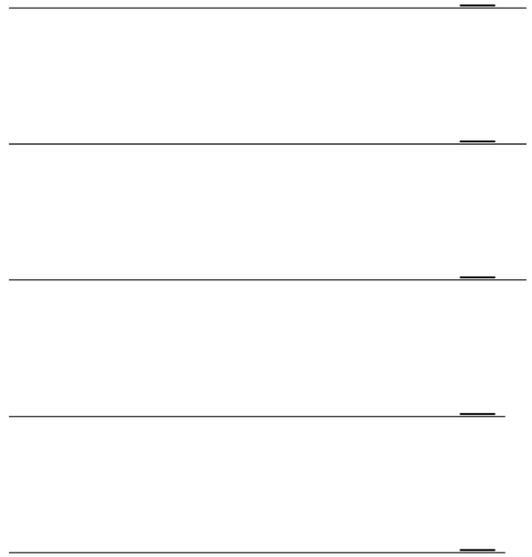


5-hydroxytryptamine

5-hydroxytryptamine

2000 6



가

.

,

,

,

.

,

,

.

가

.

.

3.		PRP 5-HT	PPP 5-HAA	
	,	5-HT		..... 17
	가.		5-HT 5-HAA	
				..... 17
	.		5-HT	
		5-HAA		..... 17
	.		5-HT 5-HAA	
				..... 17
4.		5-HT	, 5-HAA	
				..... 18
	가.	PRP 5-HT	SCL-90 HDS	..... 18
	.	PPP 5-HT	SCL-90 HDS	..... 19
	.	5-HT	SCL-90 HDS	..... 19
	.	PPP 5-HAA	SCL-90 HDS	..... 19
5.		5-HT	5-HAA	..... 21
	가.	PRP 5-HT	SCL-90 HDS	..... 21
	.	PPP 5-HT	SCL-90 HDS	..... 21
	.	5-HT	SCL-90 HDS	..... 21
	.	PPP 5-HAA	SCL-90 HDS	..... 21
	.			..... 23
	.			..... 32
				..... 34
				..... 43

1.		.....	14
2.		,	
	SCL-90	HDS	..... 16
3.		,	
	5-HT	5-HIAA	..... 18
4.		5-HT	
		.....	20
5.	5-HT		..... 22

5-hydroxytryptamine

(noradrenaline) (5-hydroxy-tryptamine, 5-HT)

(selective serotonin reuptake inhibitor, SSRI) 5-HT

5-HT

5-HT

5-HT 5-hydroxyindoleacetic acid (5-HIAA)

5-HT (PRP 5-HT),

5-HT (PPP 5-HT),

5-HT (PPP 5-HIAA)) 가 . 4

SSRI PRP 5-HT , PPP 5-HT , 5-HT ,

PPP 5-HIAA

가

31 , 21

(symptom check list, SCL-90) Hamilton depression scale(HDS) . 5-HT 5-HIAA high performance liquid chromatography(HPLC)

PRP 5-HT, PPP 5-HT,

5-HT , PPP 5-HIAA

paired t-test

Pearson's correlation

test

1.

SCL-90

HDS

PRP 5-HT , PPP 5-HT , 5-HT , PPP 5-HIAA

2.

SCL-90

HDS

, PRP

5-HT , PPP 5-HT , 5-HT

3.

PRP 5-HT

5-HT

SCL-90 HDS

가

SCL-90

-

가

PPP 5-HT

PPP 5-HIAA

가 .

4. PRP 5-HT , PPP 5-HT , PPP 5-HIAA

SCL-90 HDS

, 5-HT HDS

가 .

, PRP 5-HT , PPP 5-HT

5-HT ,

- .

5-HT SSRI

가 , 5-HT (transporting

system) 가 , .

: , , 5-HT

5-hydroxytryptamine

I.

20 (serotonin, 5-hydroxytryptamine, 5-HT) 가 .
(selective serotonin reuptake inhibitor, SSRI)가 5-HT가 가 가 ¹⁻³ .
5-HT , ,
^{4, 5} 5-HT 가
⁶ , ^{7, 8} .
5-HT
1) (tryptophan) , 2) 5-hydroxyindoleac-

etic acid(5-HIAA) , 3) 5-HT₂

가, 4) 5-HT (transporter binding) , 5)

5-HT , 6) fenfluramine (prolactin)

.^{9, 10} 5-HT

가 ,^{11, 12} 5-HT

.^{13, 14} L-tryptophan fenfluramine

5-HT challenge test prolactin

¹⁵ 5-HT 5-HIAA가 ,¹⁶

5-HIAA

.¹⁶⁻¹⁹ 5-HT

5-HT 5-HIAA

가

.²⁰⁻²⁴

SSRI

, , (1)

가

가 .²⁵⁻²⁷ 5-HT 가

²⁸

30% ,

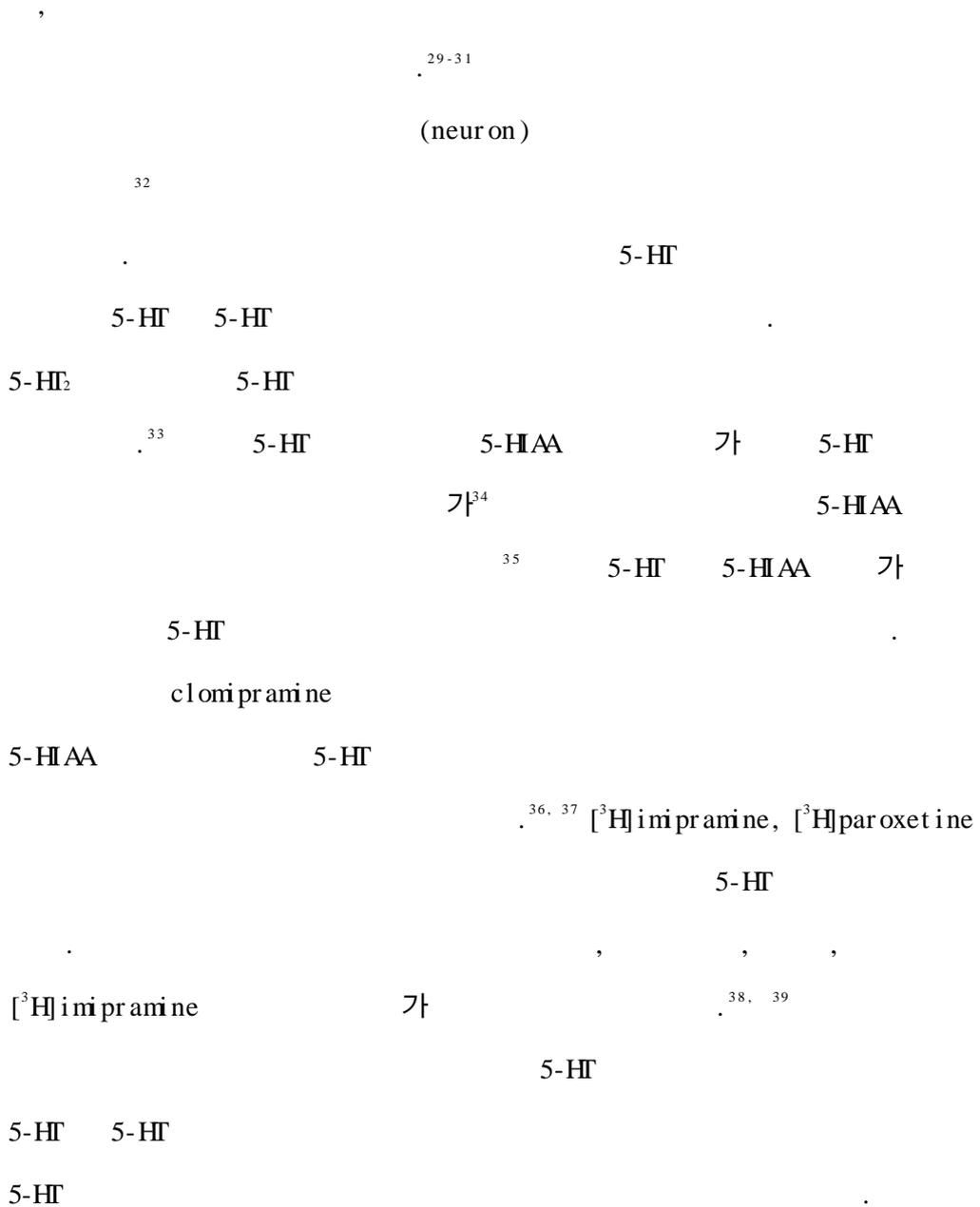
(serotonergic agonist)

. 5-HT

. 5-HT

(postsynaptic receptors)

(down-regulation)



5-HT 5-HIAA

5-HIAA ⁴⁰

5-HIAA ⁴¹

가

5-HT 5-HIAA SSRI 5-HT, 5-HIAA

1)

5-HT (PRP 5-HT)

5-HT (PPP 5-HT) 5-HIAA (

PPP 5-HIAA) 5-HT (

5-HT)

2) PRP 5-HT , PPP 5-HT , 5-HT PPP

5-HIAA 가 가

3) SSRI PPP 5-HT , PRP 5-HT , 5-HT

PPP 5-HIAA

II.

1.

가.

. DSM IV 42
,
18 60 , 2
,
,
2
가
, , , ,
. 2
,
(informed consent) .

2.

가.

DSM IV 2 가 가

가

SCL-90⁴³ 가

SCL-90 90

5 , “

”, “ ”, “ ”, “ ”, “ ”,

0 4 . 90

가 83 9 7

. 9 T1 (somatization), T2

(obsessive-compulsive), T3 (interpersonal-sensitivity),

T4 (depression), T5 (anxiety), T6 (hostility)

T7 (phobic anxiety), T8 (paranoid ideation),

T9 (psychotism)

Hamilton depression rating scale ⁴⁴ 24

1960 Max Hamilton

가

가 . 가 interrater reliability

Pearson's product-moment correlation coefficient r=0.85

(p<0.01) 가 .

. fluoxetine

1 fluoxetine 20mg

⁴⁵ 1 20mg

4

benzodiazepine

(halcion)

5-HT 5-HIAA

(1) : 5-HT 가
가^{46,47}

5-HT tryptophan

2

Diurnal variation

9 10

5cc sodium citrate tube 1,200

rpm 3 (platelet rich plasma)

2,500 rpm 10

pellet (platelet poor plasma)

pellet

()

-70

(2) 5-HT 5-HIAA : 5-HT

(electrochemical detector)가 high performance

liquid chromatography(HPLC)

.⁴⁸

(가) HPLC : HPLC Waters (Waters Associates, Milford, MA, USA) model 510 pump, model 717 plus autosampler, model M60 amperometric detector . column Shiseido (Tokyo, Japan) 150 ×4.6mm I.D, 5mm particle size, reversed phase C₈ column column temperature 32 . Hewlett-Packard 3396 recording integrator (Palo Alto, CA, U.S.A.) chromatography

() : , sodium acetate, citric acid, EDTA(ethylene diamine tetra-acetic acid), sodium octane sulfonic acid, n-w-nethyl-5-hydroxytryptamine(NMET), 5-HIAA, 5-HT Sigma (St. Louis, MO, USA), nethyl alcohol Burdick and Jackson (Muskegon, M, USA), lyophilized serum Bio-Rad (Segrate, Italy), perchloric acid Wako (Osaka, Japan), glacial acetic acid Yakuri (Osaka, Japan) . Milli-Q water purification system(Millipore Corp, Bedford, MA, USA) 3

. stock 1 ng/ml -70 가

() 5-HT 5-HIAA :

5-HT 5-HIAA perchloric acid .

250 μl PRP sample 4 ,

internal standard NMET 200ng vortex mixing , 100
 μl 3.4M perchloric acid vortex mixing ,
 30 4 , 13,000 \times g
 15 4 , 20
 μl HPLC system .
 mobile phase 0.05M sodium acetate, 0.02M citric acid,
 0.5mM sodium octane sulfonic acid, 0.15mMEDTA buffer
 900ml 100ml methanol 1 L , pH 3.2
 glacial acetic acid 0.22 μm pore size filter
 ultra-sonicator 30 degassing . mobile phase
 1 ml/min , Electrochemical detector +800mv vs Ag/AgCl
 electrode potential 0.01 A/s .
 peak retention time 5-HIAA 3.9 , 5-HT 20.0 .
 5-HT internal standard
 peak height 5-HT peak height

Concentration of 5-HT(sample)

= Concentration of 5-HT(standard)

x height of 5-HT(sample)/height of 5-HT(standard)

x height of NMET(standard)/height of NMET(sample)

$$\begin{aligned}
 (3) \quad & \frac{\text{5-HI}}{\text{5-HI}} \cdot \\
 & \frac{\text{5-HI}}{\text{5-HI}} \div \text{5-HI} \\
 = & (\text{PRP 5-HI} - \text{PPP 5-HI}) \text{ng/ml} \div \text{PPP 5-HI} \times 10^8 \div / \mu\ell \div
 \end{aligned}$$

3.

PRP PPP 5-HI
 5-HI , PPP 5-HIAA
 paired-Ttest . PRP 5-HI , PPP 5-HI , PPP 5-HIAA
 5-HI 가
 Pearson's correlation test .
 SPSS/PC 0.05 .

1.

31 , 21 .
 1 . ±
 46.57 ±7.40 , 42.87 ±8.48 .
 가 39% 가 61% 가 43%
 가 57% , 70.97%
 90.48% . , , , ,
 , , , .

1.

		(%)	(%)	P (X ² -test)
		12(38.7)	9(42.9)	NS
		19(61.3)	12(57.1)	
()		46.57 ±7.40	42.87 ±8.48	NS (t-test)
		6(19.35)	1(4.76)	NS
		22(70.97)	19(90.48)	
		2(6.45)	1(4.76)	
		1(3.23)	0(0.00)	
()	6	6(19.36)	2(9.52)	NS
	7-9	6(19.35)	10(47.62)	
	10-12	14(45.16)	6(28.57)	
	13	5(16.13)	3(14.29)	
		24(79.42)	16(76.19)	NS
		7(22.58)	5(23.81)	

		(%)	(%)	P (χ^2 -test)
		1(3.23)	1(4.76)	
		5(16.12)	2(9.52)	NS
		25(80.65)	18(85.71)	
		10(33.33)	3(14.29)	
		4(13.33)	3(14.29)	NS
		10(33.33)	10(47.62)	
		6(20.00)	5(23.81)	
	50-100	6(20.69)	3(14.29)	
()	100-200	11(37.93)	8(38.10)	
	200-300	3(10.34)	7(33.33)	NS
	300-500	5(17.24)	2(9.52)	
	500	4(13.79)	1(4.76)	
가	가	3(10.71)	1(4.76)	
	가	23(82.14)	18(85.71)	NS
		2(7.14)	1(4.76)	

NS : non-significant

2. SCL-90 HDS

가.

SCL-90 HDS

2

(±) T1

18.29(±9.83), T2가 20.35 (±12.78), T3가 14.55(±7.38), T4가 28.87(±11.44),
T5가 16.35(±8.76), T6가 7.55(±4.05), T7 5.90(±5.74), T8 7.09
(±4.64), T9 12.74(±7.28) SCL-90 131.71(±54.60)

(p<0.001).

HDS

37.16(±9.49)

13.62(±

11.65)

(p<0.001).

.

SCL-90 HDS

2

(±) T1()

9.84(±6.29), T2()가 10.10(±4.13), T3()가 8.10(±4.58), T4()가 14.52(±6.01), T5()가 8.58(±4.97), T6()가 4.45(±2.87), T7() 3.32(±2.70), T8() 4.55(±3.29), T9() 6.19(±4.04) SCL-90 69.65±(31.03) , (p<0.001).

HDS 24.58(±6.18) 37.16(±9.49) (p<0.001).

2. , SCL-90 HDS

	()		()		()	
	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)
SCL-90						
T1	31	18.29(9.83) ^a	31	9.84(6.29) ^b	21	4.43(4.31)
T2	31	20.35(12.78) ^a	31	10.10(4.13) ^b	21	3.33(3.02)
T3	31	14.55(7.38) ^a	31	8.10(4.58) ^b	21	2.62(2.22)
T4	31	28.87(11.44) ^a	31	14.52(6.01) ^b	21	5.48(4.39)
T5	31	16.35(8.76) ^a	31	8.58(4.97) ^b	21	2.71(2.63)
T6	31	7.55(4.05) ^a	31	4.45(2.87) ^b	21	0.95(1.53)
T7	31	5.90(5.74) ^a	31	3.32(2.70) ^b	21	0.57(0.87)
T8	31	7.09(4.64) ^a	31	4.55(3.29) ^b	21	1.19(1.17)
T9	31	12.74(7.28) ^a	31	6.19(4.04) ^b	21	2.43(2.27)
S total	31	131.71(54.60) ^a	31	69.65(31.03) ^b	21	23.71(13.89)
HDS						
H total	31	37.16(9.49) ^a	31	24.58(6.18) ^b	21	13.62(11.65)

a : statistically significantly different between pretreatment depression and control group (p<0.001)

b : statistically significantly different between pretreatment depression and posttreatment depression group (p<0.001)

SCL-90: symptom check list-90

T1 : somatization T2 : obsessive-compulsive T3 : interpersonal sensitivity
T4 : depression T5 : anxiety T6 : hostility

T7 : phobic anxiety T8 : paranoid ideation T9 : psychotism
HDS : Hamilton depression scale

3. PRP 5-HT, PPP 5-HIAA
5-HT
가. 5-HT 5-HIAA
3 PRP 5-HT 97.44 ±
43.72 ng/ml 327.04 ±69.77 ng/ml
(p<0.001), PPP 5-HT 7.57 ±4.01 ng/ml
15.49 ±15.62 ng/ml (p=0.003).
5-HT 1.64 ±0.85 4.86 ±1.72
(p<0.001), PPP 5-HIAA 12.10 ±7.05 17.09 ±12.89
(p=0.041)

. 5-HT 5-HIAA
3 PRP 5-HT 97.44 ±
43.72 ng/ml, PPP 5-HT 7.57 ±4.01 ng/ml, 5-HT
1.64 ±0.85 (
p<0.001). PPP 5-HIAA 12.10 ±7.05 ng/ml
14.08 ±8.39 ng/ml .

. 5-HT 5-HIAA
3 PRP 5-HT
240.93 ±95.17 ng/ml, 5-HT 2.79 ±0.96
(p<0.001). PPP 5-HT 12.20 ±4.26

ng/ml, PPP 5-HIAA 14.08 ±8.39 ng/ml

3. , 5-HT 5-HIAA

	()		()			
	N	Mean(SD)	N	Mean(SD)	N	Mean(SD)
PRP 5-HT	29	97.44(43.72) ^a	29	240.93(95.17) ^d	20	327.04(69.77) ^e
PPP 5-HT	29	7.57(4.01) ^b	29	12.20(4.26) ^d	20	15.49(15.62)
5-HT ratio	29	1.64(0.85) ^a	29	2.79(0.96) ^d	20	4.86(1.72) ^e
PPP 5-HIAA	29	12.10(7.05) ^c	29	14.08(8.39)	20	17.09(12.89)

a : significantly different between pretreatment depression and control group (p<0.001)
 b : significantly different between pretreatment depression and control group (p=0.003)
 c : significantly different between pretreatment depression and control group (p=0.041)
 d : significantly different between pretreatment depression and posttreatment depression group (p<0.001)
 e : significantly different between posttreatment depression and control group (p<0.001)

PRP : platelet rich plasma
 PPP : platelet poor plasma
 5-HT ratio : intracellular/extracellular 5-HT concentration of platelet
 5-HT: 5-hydroxytryptamine
 5-HIAA: 5-hydroxyindoleacetic acid

4. 5-HT , 5-HIAA

가. PRP 5-HT SCL-90 HDS
 4 PRP 5-HT SCL-90 T1()

T5() (p=0.048, p=0.028), T2(), T8(), T9()
(p=0.004, p=0.003, p=0.004), T3(), T4() (p<0.001)

(p<0.001). SCL-90 T6(), T7()
가 . HDS HDS PRP 5-HI
(p=0.002).

. PPP 5-HI SCL-90 HDS
4 PPP 5-HI SCL-90 10
가 (p<0.05), T1 T9
, SCL-90

. HDS HDS .

. 5-HI SCL-90 HDS
4 5-HI SCL-90 25
(p<0.05), T1(), T2()
T3(), T4(), T8() T9()
(p=0.018, p=0.044, p=0.038, p=0.016, p=0.023,
p=0.022), SCL-90 (p=0.010). HDS
(p<0.001).

. PPP 5-HIAA SCL-90 HDS
4 PPP 5-HIAA T1 T9

SCL-90

. HDS

4. 5-HT

	correlation coefficients(r)			
	PRP 5-HT	PPP 5-HT	5-HT ratio	PPP 5-HIAA
SCL-90				
T1	-0.264*	-0.333	-0.317*	0.106
T2	-0.380**	-0.033	-0.267*	0.032
T3	-0.503***	-0.122	-0.278*	0.162
T4	-0.468***	-0.010	-0.320*	0.020
T5	-0.293*	-0.045	-0.168	0.230
T6	-0.020	0.179	0.010	-0.005
T7	-0.177	0.021	-0.061	0.246
T8	-0.399**	-0.151	-0.307*	-0.015
T9	-0.385**	0.025	-0.307*	0.025
total	-0.447***	-0.084	-0.341**	0.128
HDS				
total	-0.411**	-0.294	-0.438***	0.063

* p < 0.05 ** p < 0.01 *** p < 0.001 by Pearson's correlation test

SCL-90: symptom check list-90

T1 : somatization T2 : obsessive-compulsive T3 : interpersonal sensitivity
 T4 : depression T5 : anxiety T6 : hostility
 T7 : phobic anxiety T8 : paranoid ideation T9 : psychotism

HDS : Hamilton depression scale

5. 5-HT 5-HIAA

가. PRP 5-HT SCL-90 HDS

5 PRP 5-HT SCL-90
. HDS

. PPP 5-HT SCL-90 HDS

5 PPP 5-HT SCL-90
. HDS

. 5-HT SCL-90 HDS

5 5-HT SCL-90

HDS (p=0.043).

. PPP 5-HIAA SCL-90 HDS

5 PPP 5-HIAA SCL-90

. HDS

5. 5-HT

	correlation coefficients(r)			
	Δ PRP 5-HT	Δ PPP 5-HT	Δ 5-HT ratio	Δ PPP 5-HIAA
SCL-90				
Δ T1	0.043	-0.315	0.157	-0.058
Δ T2	0.177	-0.005	-0.134	0.020
Δ T3	0.252	-0.033	0.077	0.048
Δ T4	0.187	-0.097	0.095	0.057
Δ T5	0.238	-0.182	0.167	0.056
Δ T6	0.151	0.094	0.107	-0.140
Δ T7	0.240	0.097	-0.174	0.008
Δ T8	0.188	-0.108	-0.143	-0.098
Δ T9	0.247	-0.135	0.107	-0.008
Δ total	0.252	-0.123	0.151	0.025
HDS				
Δ total	0.120	-0.065	-0.314*	0.235

* $p < 0.05$ by Pearson's correlation test

SCL-90: symptom check list-90

T1 : somatization T2 : obsessive-compulsive T3 : interpersonal sensitivity

T4 : depression T5 : anxiety T6 : hostility

T7 : phobic anxiety T8 : paranoid ideation T9 : psychotism

HDS : Hamilton depression scale

SCL-90

HDS

PRP 5-HT, PPP 5-HT, 5-HT, PPP

5-HIAA 가 . SSRI 4

SCL-90

HDS 가

PRP 5-HT, PPP 5-HT, 5-HT

. PRP 5-HT 5-HT

SCL-90 HDS 가

, - 가 . PPP 5-HT PPP

5-HIAA 가 .

PRP 5-HT, PPP 5-HT, PPP 5-HIAA

SCL-90 HDS

5-HT HDS 가

. PRP 5-HT, PPP 5-HT

5-HT

-

. 5-HT SSRI

가 , SSRI

가 , 5-HT (transporting system)
가 , 가
5-HT 가
. .
5-HT (presynaptic terminal) (synaptic
cleft) 5-HT (transporter)
. monoamine oxidase 5-HIAA
. 가
, .
49-57 .
PRP 5-HT
. 5-HT
, .
4
4
5-HT 가
. .
PRP 5-HT가
5-HT , (degradation) 가,
dense granule ,

가 가 가

5-HT

가 ⁵⁸⁻⁶⁴ Shaw ⁶⁵

5-HT 5-HT 가

가 ⁶⁶⁻⁶⁸ ^{69, 70}

(active process)

5-HT (passive diffusion)

5-HT 5-HT

V_{max} 가 ³⁰

K_m 가 V_{max}

가 ²⁸ Tuomisto ⁶⁰ Coppen ⁶⁴

5-HT maximum velocity (V_{max}) Michaelis

constant (K_m)

5-HT 5-HT 가

5-HT 5-HT

5-HT 가 5-HT

²⁷

5-HT

SSRI 5-HT 가

가 SSRI 가

SSRI

5-HT

PPP 5-HT

5-HT

PPP 5-HT 가 PRP

5-HT

가

PRP 5-HIAA

5-HT

5-HIAA가

5-HT

5-HT

1.64(±0.85),

4.86(±1.72)

5-HT

5-HT

PRP 5-HT

5-HT

5-HT

5-HT

5-HT

PRP 5-HT 가

SCL-90 HDS

가

SCL-90

HDS

71

5-HT

PRP 5-HT

가

SCL-90-R

HDS

PPP 5-HT SCL-90 HDS
 . PPP 5-HT 가
 . PPP 5-HIAA
 .
 5-HT
 .
 5-HT
 Michaelis (Km)가
 , Km
 가 .²⁸ 5-HT
 (kinetic) 가 .²⁹
 5-HT (density) 가
 HDS (cognitive
 symptom) 가 , 가
 .⁷¹ 5-HT
 (receptor density)
 (cognitive symptom) 5-HT
 가 (vegetative symptom)
 HDS 5-HT 5-HT
 가 .⁷² PRP
 5-HT SCL-90 T1, T2, T3, T4, T5, T8, T9
 T6, T7 . 5-HT
 SCL-90 T1, T2, T3, T4, T8, T9 HDS

, T5, T6, T7 .

PRP 5-HT 5-HT (somatization),
(obsessive-compulsive), (interpersonal sensitivity),
(depression), (anxiety), (paranoid ideation), (psychotism)

, -

가 5-HT

PPP 5-HT

SCL-90 T1 T9

HDS

PPP 5-HIAA

SCL-90 T1 T9

HDS

PPP 5-HT 5-HIAA 가

PRP 5-HT , PPP 5-HT ,

PPP 5-HIAA SCL-90 HDS

5-HT SCL-90

HDS

5-HT

PRP 5-HT 가

PRP 5-HT 가

PRP 5-HT

SSRI SSRI

5-HT 5-HT 가

(down regulation)

5-HT

SSRI (2

) 4

SSRI

5-HT가 가

SSRI

5-HT 가

SSRI 5-HT 가

5-HT

(active transport), 5-HT ,

(passive diffusion) 5-HT

.⁵⁷ SSRI SSRI가

5-HT

5-HT 가 가

가 .

SSRI PPP 5-HT 7.57ng/ml 12.20 ng/ml

가 SSRI

PRP 5-HT 가

가 가

가가 가

5-HT 가 가

SSRI

5-HT 1.64 ±0.85 2.79 ±0.96 가

SSRI가

5-HT 가

PRP 5-HT 가 5-HT

4

5-HT 가

5-HT ,

SSRI 가 5-HT

가

5-HT 5-HT

가 .

4 ,

5-HI , , ,

4 .

5-HI

5-HI 가 .

, , ,

가 .

31 , 21
 5-HT . 가
 SCL-90 HDS PRP 5-HT , PPP 5-HT
 PPP 5-HIAA HPLC .

1. SCL-90
 HDS ,
 PRP 5-HT , PPP 5-HT , 5-HT , PPP
 5-HIAA .

2. SCL-90
 HDS
 , PRP 5-HT , PPP 5-HT , 5-HT

3. PRP 5-HT 5-HT
 SCL-90 HDS 가
 SCL-90 - 가 .
 PPP 5-HT PPP 5-HIAA
 가 .

4. PRP 5-HT, PPP 5-HT, PPP 5-HIAA
SCL-90 HDS
5-HT HDS
가 .

PRP 5-HT, PPP 5-HT
5-HT
- .
5-HT SSRI
가 5-HT 가
,

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Abstract

Relationship between the psychopathology and the concentration of
5-hydroxytryptamine in platelet and plasma of depression.

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There has been accumulating evidences that the abnormalities in CNS serotonergic system are related to depression. However the relationship between the serotonergic abnormalities and psychopathology of depression aren't clarified.

This study is aimed to investigate the relationship between the abnormalities of serotonergic system and the psychopathology in depressive patients.

The subjects were 31 depression patients and 21 healthy adults. Patient group was treated with SSRI for 4 weeks. The psychopathology was assessed by symptom check list-90(SCL-90) and Hamilton depression scale(HDS) and the concentrations of 5-hydroxytryptamine(5-HT) and 5-hydroxyindoleacetic acid (5-HIAA) were measured with high performance liquid chromatography-electrochemical detection(HPLC-ECD). The concentration of 5-HT and 5-HIAA in platelet rich plasma (PRP) and in platelet poor plasma (PPP) and 5-HT ratio between PPP and PRP were compared between depression pretreatment, depression posttreatment and healthy control group. And the psychopathology

of depression measured by SCL-90 and HDS, was correlated with the concentrations of 5-HT and 5-HIAA in PRP and PPP in depression group.

The results were as follows;

- 1) The scores of symptom dimensions and total score of SCL-90 and the total score of HDS of patient group were significantly higher than those of control group and the concentrations of PRP 5-HT, PPP 5-HT and PPP 5-HIAA and 5-HT ratio of patient group were significantly lower than those of control group.
- 2) The scores of SCL-90 and HDS of depression pretreatment group were significantly higher than those of depression posttreatment group. The concentration of PRP 5-HT, PPP 5-HT and 5-HT ratio of depression pretreatment group were significantly lower than those of depression posttreatment group.
- 3) The concentrations of PRP 5-HT and 5-HT ratio in depression pretreatment group were significantly negatively correlated with the score of SCL-90 and HDS, but these are not correlated with dimensions of hostility and phobic-anxiety. The concentration of PPP 5-HT and PPP 5-HIAA were not significantly correlated with the scores of symptom dimension and total score of SCL-90 and HDS score.
- 4) The change of the concentration of PRP 5-HT, PPP 5-HT and PPP 5-HIAA were not significantly correlated with the change of the score of SCL-90 and HDS. The change of the 5-HT ratio was only significantly negatively correlated with the change of HDS score.

These results suggest that abnormalities in serotonin system evidenced by the decreased concentration of PRP 5-HT and PPP 5-HT and 5-HT ratio

are related with depression and that dimensions of hostility and phobic-anxiety were not related with serotonin system. Especially low 5-HT ratio, as it has a significantly relationship with improvement of depression with treatment with SSRI, suggests that the abnormality of 5-HT transport system is related with etiology and improvement of depression.

Key Words : depression, psychopathology, platelet 5-HT