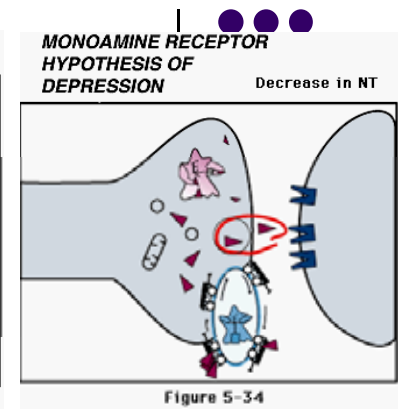
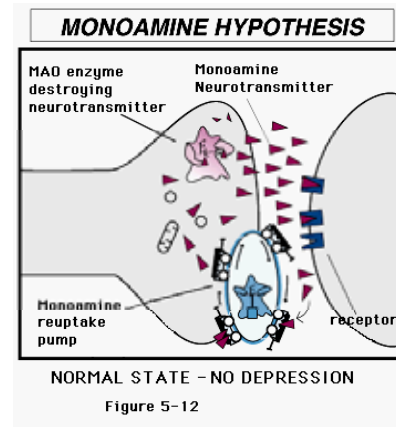




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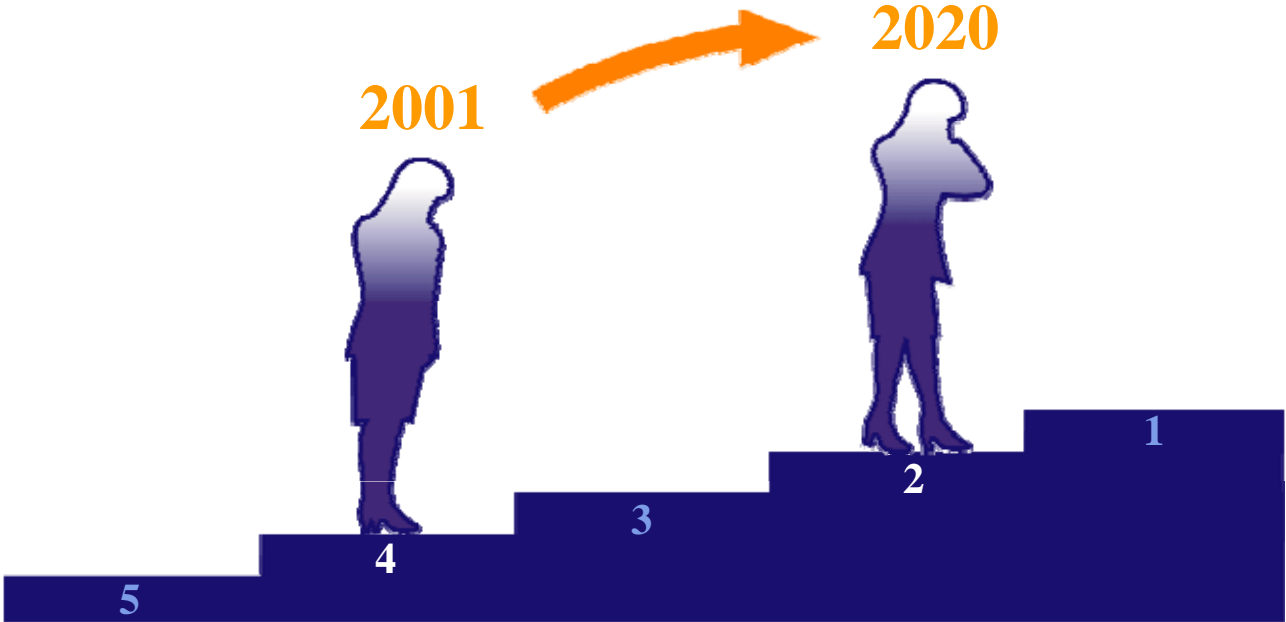


요즘 왜 그래?  
뭐 하나도 제대로 하는 꼴을 못 봤어!  
정신을 어디에 둔거야!

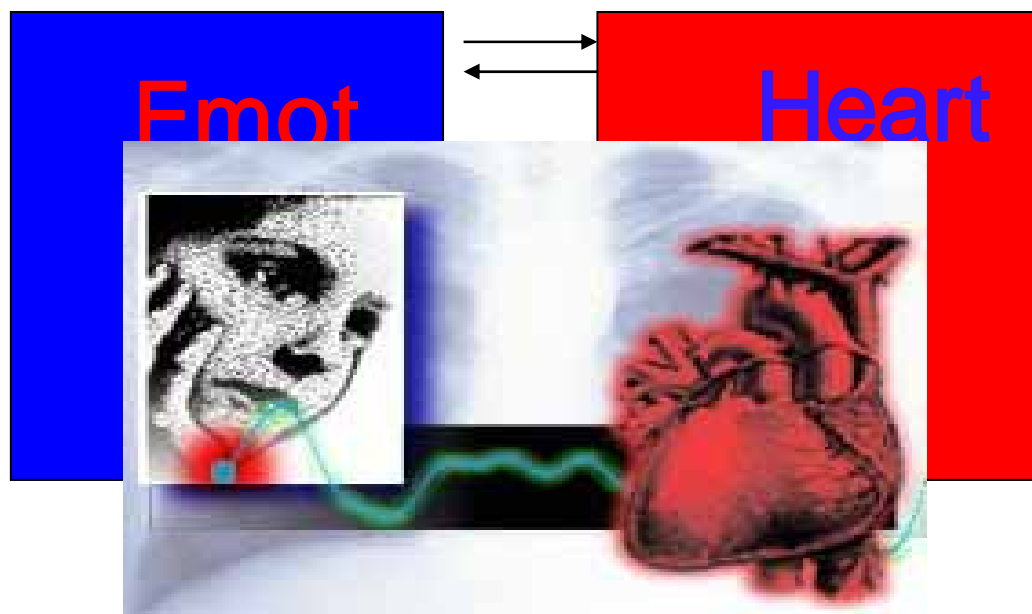
무슨 일을 하고  
있어더라...



# WHO



WHO



- 傷心
- Heart broken



Study	Diagnostic Method	Study Participants	Percentage with Major Depression	Depression Associated with Cardiac Status?	Impact of Depression Prognosis	Adjustments for 1) Cardiac Status 2) Overall Medical Comorbidity
Carney et al 1987 and 1988	Modified DIS	Outpatients with CAD	17%	Depression not associated with NYHA functional class or severity of stenosis	Depression correlated with worse cardiac outcome	1) Extent of coronary disease, LVEF 2) None
Schleifer et al 1989	SADS/RDC	Post-MI patients	18%	Depression not associated with LVEF, presence of Q waves, prior MI	No impact	Not reported
Forrester et al 1992	Present State Exam	Post-MI patients	19%	Patients with depression more likely to have large infarcts	Not reported	Not reported
Frasure-Smith et al 1993	Modified DIS	Post-MI patients	16%	Depressed patients more likely to be prescribed warfarin	At 6 months hazard ratio for mortality 3.44	1) Left ventricular function and prior MI 2) None
Frasure-Smith et al 1995	Same as above	Same sample as above	Same as above	Same as above	At 18 months odds ratio for mortality for BDI $\geq 10 = 6.64$	Same as above
Gonzalez et al 1996	Modified DIS	Inpatients with CAD	23%	Not reported	Not reported	Not reported
Hance et al 1996	Modified DIS	Outpatients with CAD	17%	Patients with MDD do not have greater extent of coronary disease	Not reported	Not reported
Kaufman et al 1999	Modified DIS	Post-MI patients	27.2%	Not reported	Depression not an independent predictor of mortality	1) History of prior MI, current CHF, LVEF 2) Diabetes, stroke
Lesperance et al 2000	Modified DIS	Inpatients with unstable angina	15.1%	Depression not associated with cardiac disease severity	For BDI $\geq 10$ , odds ratio for cardiac events or cardiac death for BDI $\geq 10 = 6.73$	1) EKG, history of CABG or angioplasty, LVEF, extent of CAD, cardiac medicines 2) None
Connerney et al 2001	Modified DIS	Post-CABG patients	20%	Major depression not associated with LVEF or history of MI, depression associated with functional class	At 1 year, RR for cardiac events 2.3	1) Functional class, LVEF, complexity of surgical procedure 2) None

Comorbidity of major depression in CAD pt.s:  
15.1-23%



도심 속 녹색병원  
인술백년 감동천년

의학발전을 선도하고 국민보건  
향상에 이바지하고 있습니다.

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**KAMIR**

Korea Acute Myocardial Infarction Registry  
한국인 급성 심근경색증의 현황에 대한 등록연구



보건복지가족부 지정 우울증 임상연구센터  
CLINICAL RESEARCH CENTER FOR DEPRESSION

급성 관동맥증후군 후 우울증의  
평가 및 치료

<환자> CAD \_\_\_ Chart No. \_\_\_\_\_

성명			
병력번호			
생년월일	년	월	일
연령	만	세	
성별	남	여	
주소			
진료	과:	원: _____	

<평가>

내용	시점	년	월	일	평가자
진상특정판독	발생				
1회 평가	입원(기저선)				
2회 평가	4주				
3회 평가	8주				
4회 평가	12주				
5회 평가	16주				
6회 평가	20주				
7회 평가	24주				

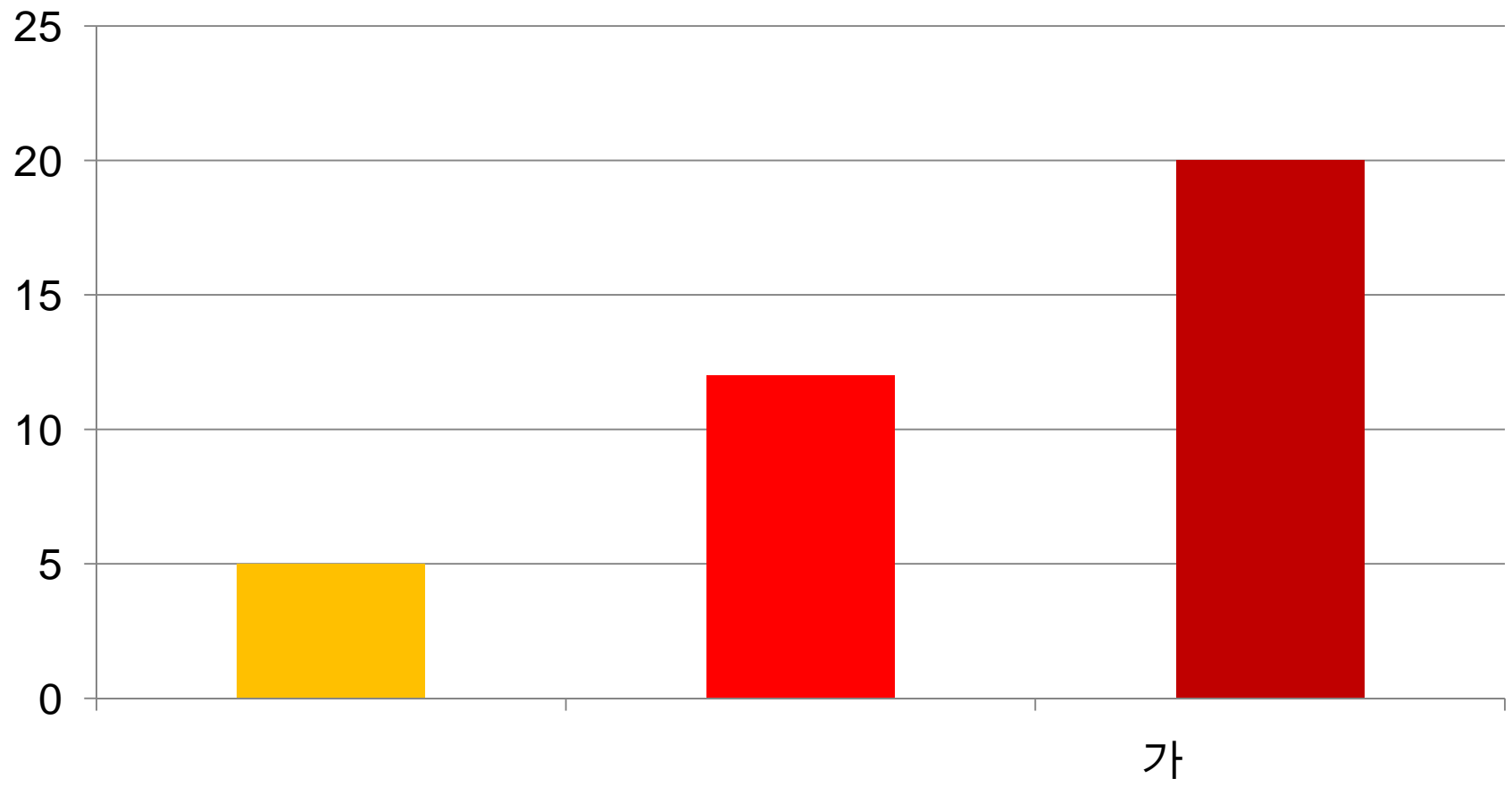
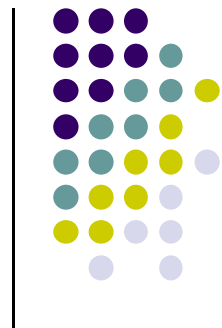
전남대학교병원 순환기내과 / 정신과  
보건복지부지정 우울증 임상연구센터

Flow chart of the Study

Evaluation	1*	2*	3*	4*	5*	6*	7*
Time point after stroke	0	4W	8W	12W	16W	20W	24W
Place of evaluation	In	OPD	OPD	OPD	OPD	OPD	OPD
Inclusion/Exclusion criteria	√						
Consent form	√						
Blood sample	√						
Drugs used	√	√	√	√	√	√	√
Cardiovascular evaluation							
Electrocardiographic	√						√
Echocardiographic	√						√
Angiographic	√						(√)
Socio-demographic	√						
Physical health state	√						
Laboratory examination	√						√
Depression							
BDI	√	√	√	√	√	√	√
HAM-D	√	√	√	√	√	√	√
MINI	√	√	√	√	√	√	√
CGI	√	√	√	√	√	√	√
PH/FH	√						
Life events	√			√			√
Social support	√			√			√
Other psychiatric symptoms							
SCL-90-R	√	√		√			√
Personality-Big5			√				
WRO-QoL	√	√		√			√
SOFAS	√	√		√			√
WHODAS-12	√	√		√			√
General safety							
UKU	√	√	√	√	√	√	√
Report	√	√	√	√	√	√	√
Caregiver							
Socio-demographics	√						
GHQ	√	√		√			√

1069  
739 1







# Depression



## Behavioral Risk Factors

- Smoking
- Alcohol
- Medical Adherence
- Physical Activity

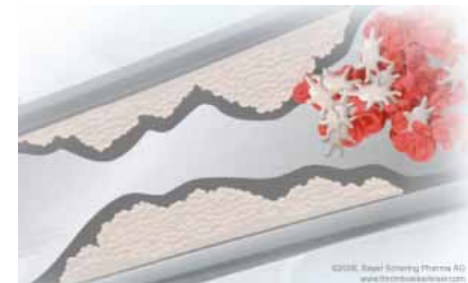
## Physiological Risk Factors

- Platelet Activity
- HPA Axis Dysregulation
- ANS Dysregulation
- Inflammation
- Traditional Risk Factors
- Diabetes
- Obesity
- Hypertension

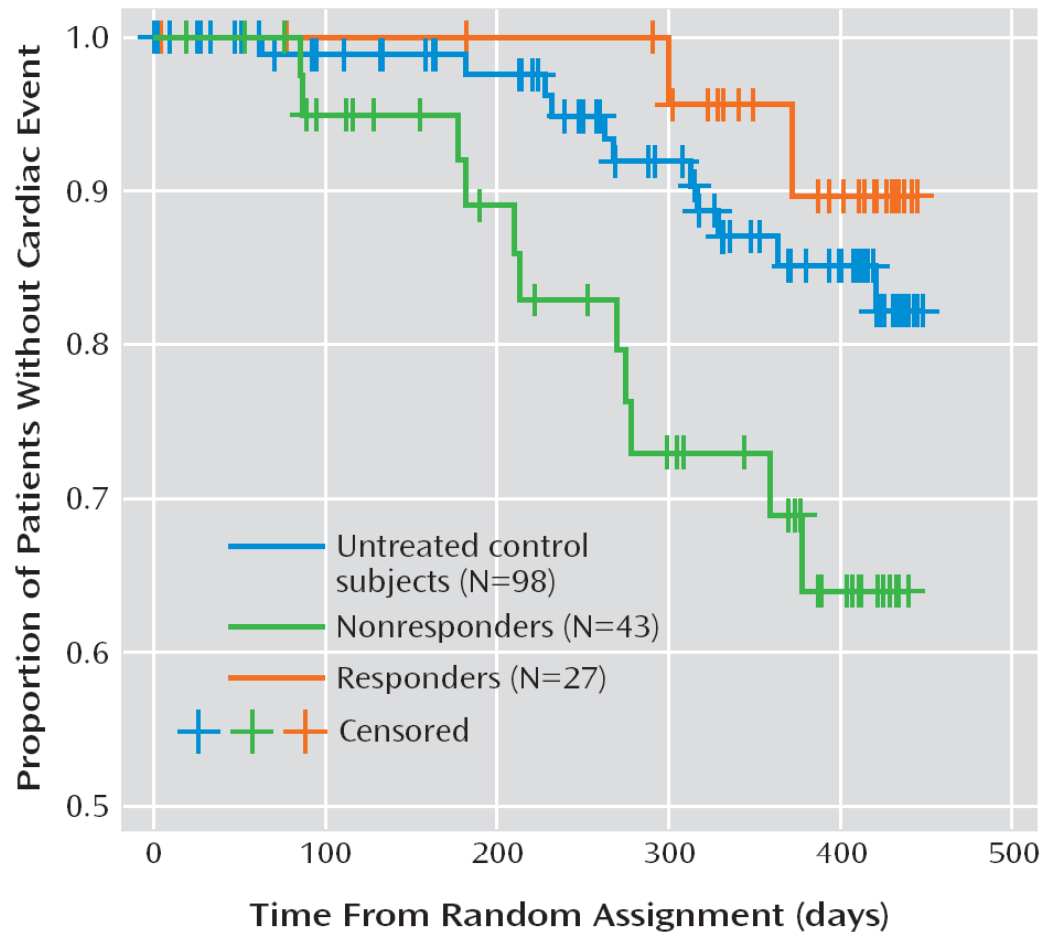


# Clinical Events

(e.g. AMI, sudden cardiac death, etc.)



# 가



cardiac event  
after 24 weeks

- 25.6% of the nonresponders

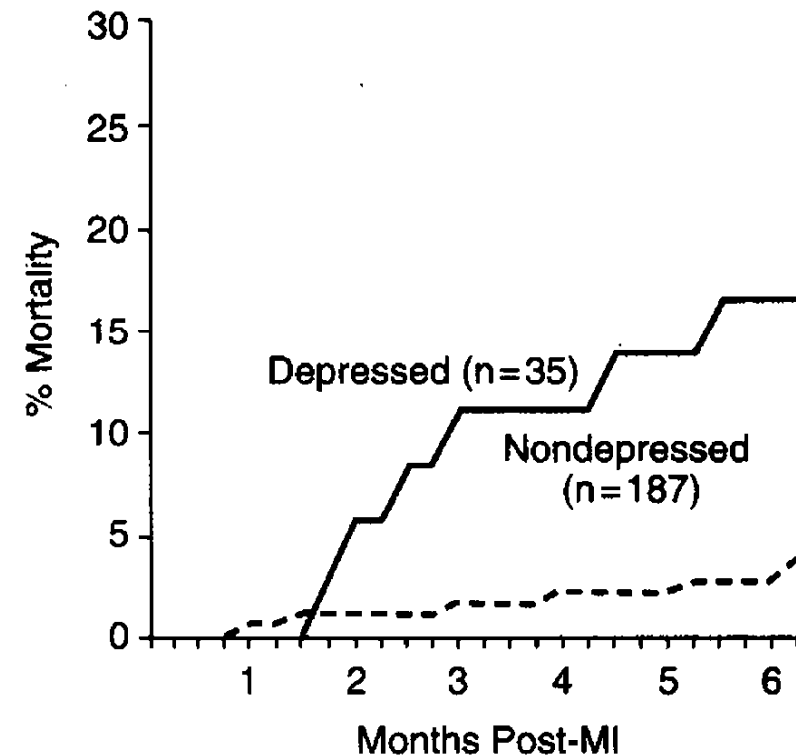
- 7.4% of the responders

- 11.2% of the untreated control subjects

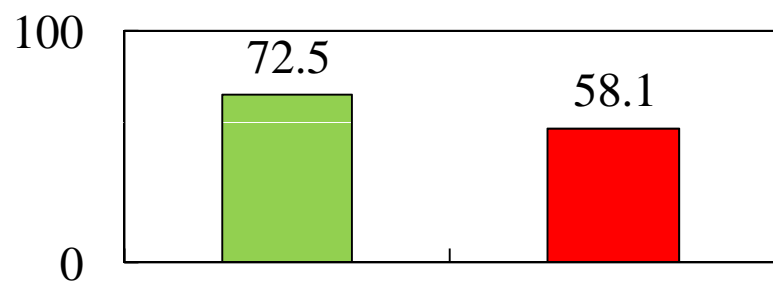
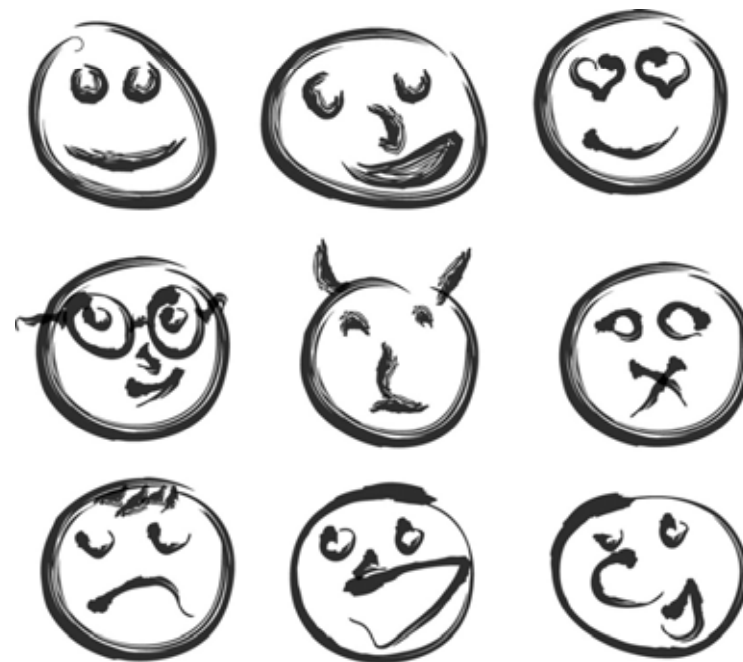
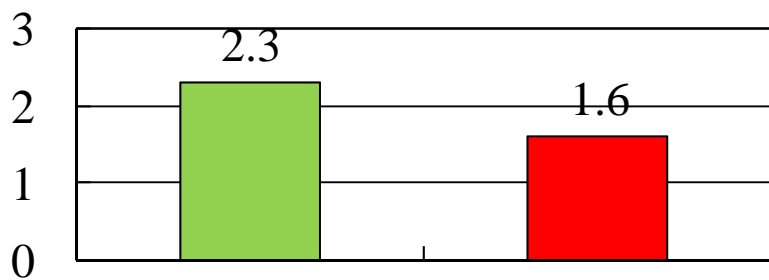
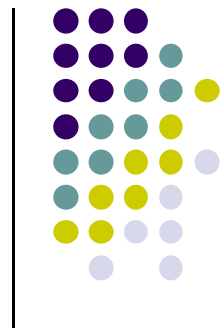
# 가



- Major depression is a significant predictor of mortality in AMI pt.s
  - At 6 months following MI
    - *HR 5.74, 95%CI (4.61, 6.87)*
  - At 18 months following MI
    - *OR for BDI 7.82, 95%CI (2.42, 25.26)*



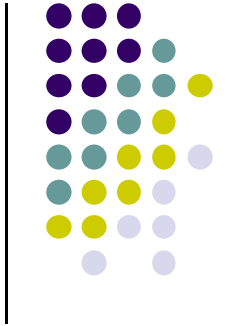
*Frasure-Smith N, et al. JAMA 1993;270:1819-1825.  
Frasure-Smith N, et al. Circulation 1995;91:999-1005.*





- 
- 
- 

■





가

: stigma

: understandable



Booth BM et al. Arch Intern Med. 1998;158:1551-1559.  
Ziegelstein RC et al. Arch Intern Med. 2000;160:1818-1823.

# DSM-IV



- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

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가

.

	Beck Depression Inventory	Hospital Anxiety & Depression Scale
가	Hamilton Depression Rating Scale	Montgomery Asberg Depression Rating Scale

# 가



Table 4. Logistic regression analysis of factors affecting misclassification.

	BDI	HADS-D	HAMD	MADRS
Age, higher	<b>1.04 (1.02-1.07)</b>	1.02 (0.99-1.05)	1.03 (0.99-1.05)	1.02 (0.99-1.05)
Gender, female	<b>1.83 (1.16-2.88)</b>	1.30 (0.76-2.20)	<b>3.00 (1.74-5.17)</b>	<b>1.73 (1.07-2.79)</b>
Education, lower	<b>1.06 (1.01-1.10)</b>	1.03 (0.98-1.08)	<b>1.05 (1.00-1.10)</b>	1.04 (0.99-1.08)
GRACE score, higher	<b>1.01 (1.01-1.02)</b>	<b>1.02 (1.01-1.03)</b>	<b>1.02 (1.01-1.03)</b>	<b>1.02 (1.01-1.03)</b>

BDI=Beck Depression Inventory; HADS-D=Hospital Anxiety and Depression Scale-depression subscale; HAMD=Hamilton Depression Rating Scale; MADRS=Montgomery Asberg Depression Rating Scale; GRACE : Global Registry of Acute Coronary Events.

Values in bold type show statistical significance ( $p < 0.05$ ).



# Hospital Anxiety & Depression Scale



- 1) 나는 긴장감 또는 "정신적 고통"을 느낀다.
  0. 전혀 아니다.
  1. 가끔 그렇다.
  2. 자주 그렇다.
  3. 거의 그렇다.
- 2) 나는 즐겨오던 것들을 현재도 즐기고 있다.
  0. 똑같이 즐긴다.
  1. 많이 즐기지는 못한다.
  2. 단지 조금만 즐긴다.
  3. 거의 즐기지 못한다.
- 3) 나는 무언가 무서운 일이 일어날 것 같은 느낌이 든다.
  0. 전혀 아니다.
  1. 조금 있지만 걱정하지 않는다.
  2. 있지만 그렇게 나쁘지는 않다.
  3. 매우 분명하고 기분이 나쁘다.
- 4) 나는 사물을 긍정적으로 보고 잘 웃는다.
  0. 나는 항상 그렇다.
  1. 현재는 그다지 그렇지 않다.
  2. 거의 그렇지 않다.
  3. 전혀 아니다.
- 5) 마음속에 걱정스러운 생각이 든다.
  0. 거의 그렇지 않다.
  1. 가끔 그렇다.
  2. 자주 그렇다.
  3. 항상 그렇다.
- 6) 나는 기분이 좋다.
  0. 항상 그렇다.
  1. 자주 그렇다.
  2. 가끔 그렇다.
  3. 전혀 그렇지 않다.
- 7) 나는 편하게 긴장을 풀 수 있다.
  0. 항상 그렇다.
  1. 대부분 그렇다.
  2. 대부분 그렇지 않다.
  3. 전혀 그렇지 않다.
- 8) 나는 기력이 떨어진 것 같다.
  0. 전혀 아니다.
  1. 가끔 그렇다.
  2. 자주 그렇다.
  3. 거의 항상 그렇다.
- 9) 나는 초조하고 두렵다.
  0. 전혀 아니다.
  1. 가끔 그렇다.
  2. 자주 그렇다.
  3. 매우 자주 그렇다.
- 10) 나는 나의 외모에 관심을 잃었다.
  0. 여전히 관심이 있다.
  1. 전과 같지는 않다.
  2. 이전보다 확실히 관심이 적다.
  3. 확실히 잃었다.
- 11) 나는 가만히 있지 못하고 안절부절한다.
  0. 전혀 그렇지 않다.
  1. 가끔 그렇다.
  2. 자주 그렇다.
  3. 매우 그렇다.
- 12) 나는 일들을 즐거운 마음으로 기대한다.
  0. 내가 전에 그랬던 것처럼 그렇다.
  1. 전보다 조금 덜 그렇다.
  2. 전보다 확실히 덜 그렇다.
  3. 전혀 그렇지 않다.
- 13) 나는 갑자기 당황스럽고 두려움을 느낀다.
  0. 전혀 그렇지 않다.
  1. 가끔 그렇다.
  2. 꽤 자주 그렇다.
  3. 거의 항상 그렇다.
- 14) 나는 좋은 책 또는 라디오, 텔레비전을 즐길 수 있다.
  0. 자주 즐긴다.
  1. 가끔 즐긴다.
  2. 거의 못 즐긴다.
  3. 전혀 못 즐긴다.

# 가



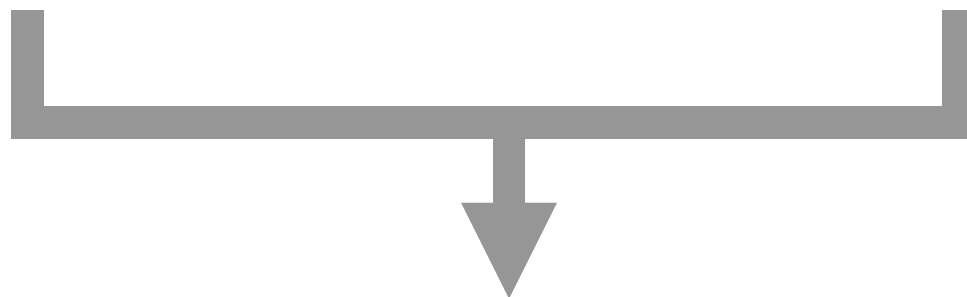
- “ 2 가 ?” ,
- “ 2 ?”



*(JAMA. 2003;289:3169-70)*



( , )

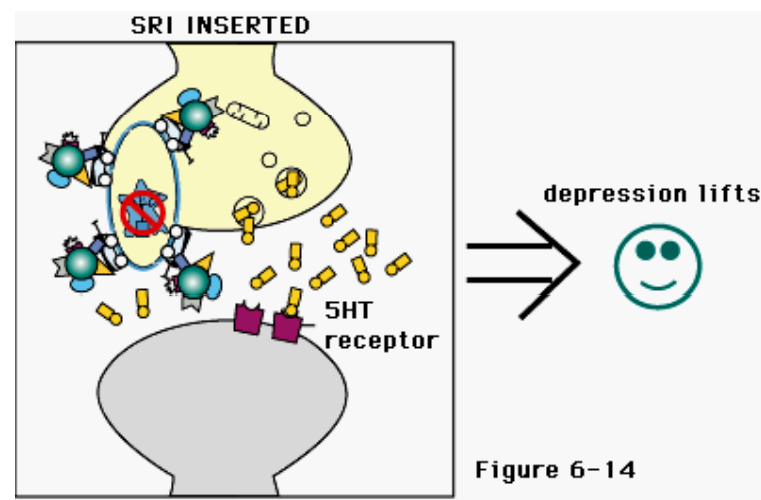


**가 !**



## Selective serotonin reuptake inhibitors (SSRI)

- ▶ Fluoxetine (Prozac) 20mg
- ▶ Sertraline (Zoloft) 50mg
- ▶ Paroxetine (Seroxat) 20mg
- ▶ Citalopram (Cipram) 20mg





# SADHART study (sertraline)

**Table 6.** Antidepressant Efficacy Results\*

	Sertraline	Placebo	P Value
All randomized patients			
No.	186	183	
CGI-I score, mean (SD)†	2.57 (0.06)	2.75 (0.07)	.049
HAM-D change score, mean (SD)‡	-8.4 (0.41)	-7.6 (0.41)	.14
CGI-I responder, No. (%)	125 (67)	97 (53)	.01
Any recurrent MDD			
No.	96	90	
CGI-I score, mean (SD)†	2.49 (0.09)	2.80 (0.09)	.02
HAM-D change score, mean (SD)‡	-9.8 (0.59)	-7.6 (0.61)	.009
CGI-I responder, No. (%)	69 (72)	46 (51)	.003
More severe (2 prior episodes plus HAM-D score ≥18)			
No.	50	40	
CGI-I score, mean (SD)†	2.41 (0.13)	2.98 (0.12)	.002
HAM-D change score, mean (SD)‡	-12.3 (0.88)	-8.9 (0.98)	.01
CGI-I responder, No. (%)	39 (78)	18 (45)	.001

\*Patients with no follow-up data are included in the analysis by imputing no change. CGI-I indicates Clinical Global Impression Improvement Scale; MDD, major depressive disorder; and HAM-D, Hamilton Depression Scale.

†For repeated measures of analysis of CGI-I, weeks 2, 6, 10, 16, and 24 are used. CGI-I at week 0 is used as a covariate in the model. Responders have CGI-I scores of ≤2 (much or very much improved) at end point.

‡For repeated-measures analysis of HAM-D, weeks 6, 10, and 16 are used.



# Citalopram study



**Table 2.** Adjusted Mean Baseline to 12-Week Changes in Depression and Other Outcomes\*

Measures	Factorial Groups				IPT vs Clinical Management			Citalopram vs Placebo		
	IPT + Citalopram (n = 67)	IPT + Placebo (n = 75)	Clinical Management + Citalopram (n = 75)	Clinical Management + Placebo (n = 67)	IPT (n = 142)	Clinical Management (n = 142)	P Value	Citalopram (n = 142)	Placebo (n = 142)	P Value
	Primary outcome: 24-item HAM-D score, mean (SD)†	13.7 (9.96)	10.5 (9.96)	16.1 (9.96)	12.8 (9.97)	12.1 (9.97)	14.4 (9.97)	.06	14.9 (9.99)	11.6 (9.99)
Between-group difference (96.7% CI)					-2.26 (-4.78 to 0.27)			3.33 (0.80 to 5.85)		
Secondary outcome: BDI-II score, mean (SD)‡	15.4 (10.67)	11.5 (10.68)	14.0 (10.67)	10.7 (10.68)	13.5 (10.69)	12.4 (10.69)	.37	14.7 (10.68)	11.1 (10.68)	.005
Between-group difference (98.3% CI)					1.13 (-1.90 to 4.16)			3.61 (0.58 to 6.64)		
Exploratory outcomes										
IDS score, mean (SD)§	16.8 (13.12)	12.8 (13.08)	20.4 (13.08)	14.9 (13.13)	14.8 (13.12)	17.7 (13.12)	.06	18.6 (13.12)	13.8 (13.12)	.002
Between-group difference (95% CI)					-2.91 (-5.96 to 0.15)			4.76 (1.71 to 7.81)		
17-item HAM-D score, mean (SD)	9.9 (7.60)	7.7 (7.60)	11.8 (7.60)	9.3 (7.60)	8.8 (7.60)	10.5 (7.60)	.07	10.7 (7.61)	8.5 (7.61)	.02
Between-group difference (95% CI)					-1.66 (-3.43 to 0.11)			2.19 (0.42 to 3.96)		
FPI score, mean (SD)¶	-0.14 (0.41)	-0.07 (0.42)	-0.14 (0.41)	-0.02 (0.41)	-0.11 (0.42)	-0.06 (0.41)	.56	-0.14 (0.41)	-0.05 (0.42)	.05
Between-group difference (95% CI)					-0.03 (-0.13 to 0.07)			-0.10 (-0.19 to 0)		
IPRI score, mean (SD)#	-4.9 (6.61)	-2.0 (6.57)	-3.8 (6.67)	-1.9 (6.62)	-3.5 (6.63)	-2.8 (6.63)	.36	-4.3 (6.63)	-2.0 (6.63)	.004
Between-group difference (95% CI)					-0.72 (-2.26 to 0.83)			-2.31 (-3.86 to -0.77)		

Abbreviations: BDI-II, Beck Depression Inventory II; CI, confidence interval; FPI, Functional Performance Inventory; HAM-D, Hamilton Depression Rating Scale; IDS, Inventory of Depressive Severity; IPRI, Interpersonal Relationships Inventory; IPT, interpersonal psychotherapy.

\*Adjusted for baseline score, fitting both main effects and 2-way interaction in an intention-to-treat, last-observation-carried-forward analysis. Negative values for the FPI and IPRI indicate improvements.

†P = .91 for IPT × citalopram interaction.

‡P = .82 for IPT × citalopram interaction.

§P = .64 for IPT × citalopram interaction.

||P = .94 for IPT × citalopram interaction.

¶P = .62 for IPT × citalopram interaction.

#P = .46 for IPT × citalopram interaction.



## Escitalopram in Depressive Patients With Acute Coronary Artery Syndrome

This study is not yet open for patient recruitment.

Verified by Chonnam National University Hospital January 2007

Sponsored by: Chonnam National University Hospital

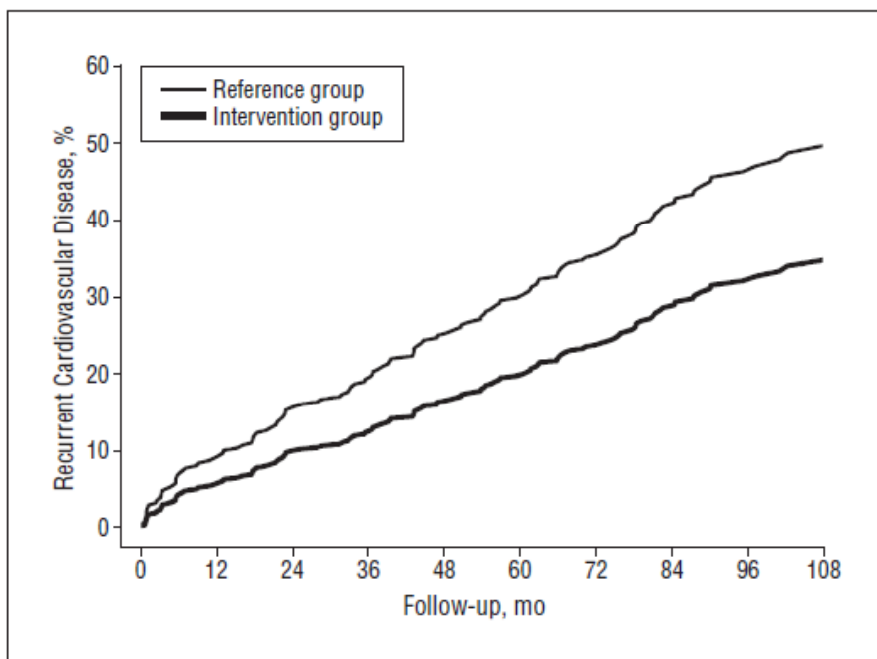
Information provided by: Chonnam National University Hospital

ClinicalTrials.gov Identifier: NCT00419471

### ▶ Purpose

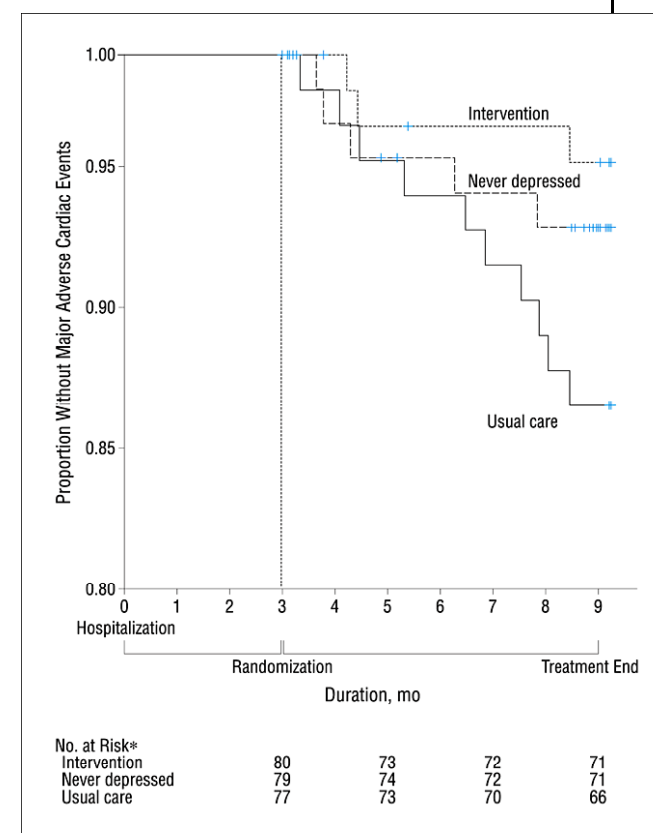
This study aimed to evaluate the efficacy and safety of escitalopram in the treatment of depressive patients with acute coronary artery syndrome (CAS).

Condition	Intervention	Phase
Depressive Disorder Coronary Disease	Drug: Escitalopram	<a href="#">Phase IV</a>



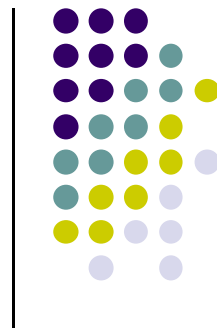
**Figure 2.** Cumulative first recurrent fatal and nonfatal cardiovascular events during 9 years (108 months) from baseline, adjusted for the influence of age, sex, marital status, education, smoking habits, comorbidity (number of previous acute myocardial infarctions, angina pectoris, hyperlipidemia, hypertension, heart failure, diabetes mellitus, asthma/chronic obstructive pulmonary disease, and stroke), peripheral artery disease, and 2-year mean systolic blood pressure, serum cholesterol, and serum triglyceride level, and scores for vital exhaustion, coping ability resources, and credence in the future, by treatment group.

*Arch Intern Med.* 2011;171(2):134-140



**Figure 2.** Kaplan-Meier survival curves for major adverse cardiac events in the Coronary Psychosocial Evaluation Studies for randomized patients and the nondepressed cohort. \*The number at risk at 9 months includes those who were evaluated during the ninth month.

*Arch Intern Med.* 2010;170(7):600-608



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