



MUSTANG [mʌstæŋ]

: a free-ranging feral and wild horse, or an automobile brand cited from wikipedia

KOREAN MUSTANG

KOREAN MULTICENTER SURVEY OF HEALTH STATUS OUTCOMES AFTER PERCUTANEOUS CORONARY ANGIOPLASTY IN PATIENTS WITH ACUTE CORONARY SYNDROMES

Doo Soo Jeon

The Catholic University of Korea

국내 ACS 환자에서 PCI 전후의

1. Statin 약물 치료 현황

- None vs Low vs High Dose
- Baseline risk factor
- PCI 후 MACE (death, MI, stroke, UA, TLR) 발생 빈도

2. Health-Related Quality of Life (HRQOL)

- Valid, reproducible, and sensitive to clinical change
- The Seattle Angina Questionnaire (SAQ)
- Short Form 36-Item (SF-36)
- EuroQoL
 - EuroQoL Visual Analogue Scale (EQ-VAS)
 - EuroQoL 5-Dimensional Classification (EQ-5D)



연구 설계

1. 조사대상 의료기관

- 전국 종합 병원 48개

2. 조사 대상자

- 조사대상 의료기관 심장내과에 ACS로 입원하여 PCI를 받는 환자
- ACS는 Unstable Angina, NSTEMI, STEMI를 포함
- 서면동의 설명문 및 동의서를 이해할 수 있고 제출할 의사가 있음

Unstable angina (Braunwald class I, II, III)

※ Braunwald class

I . symptoms with exertion (\geq Canadian Class III)

II . subacute symptoms at rest (rest pain 2-30d prior to admission)

III . acute symptoms at rest (within prior 48h)

Myocardial infarction

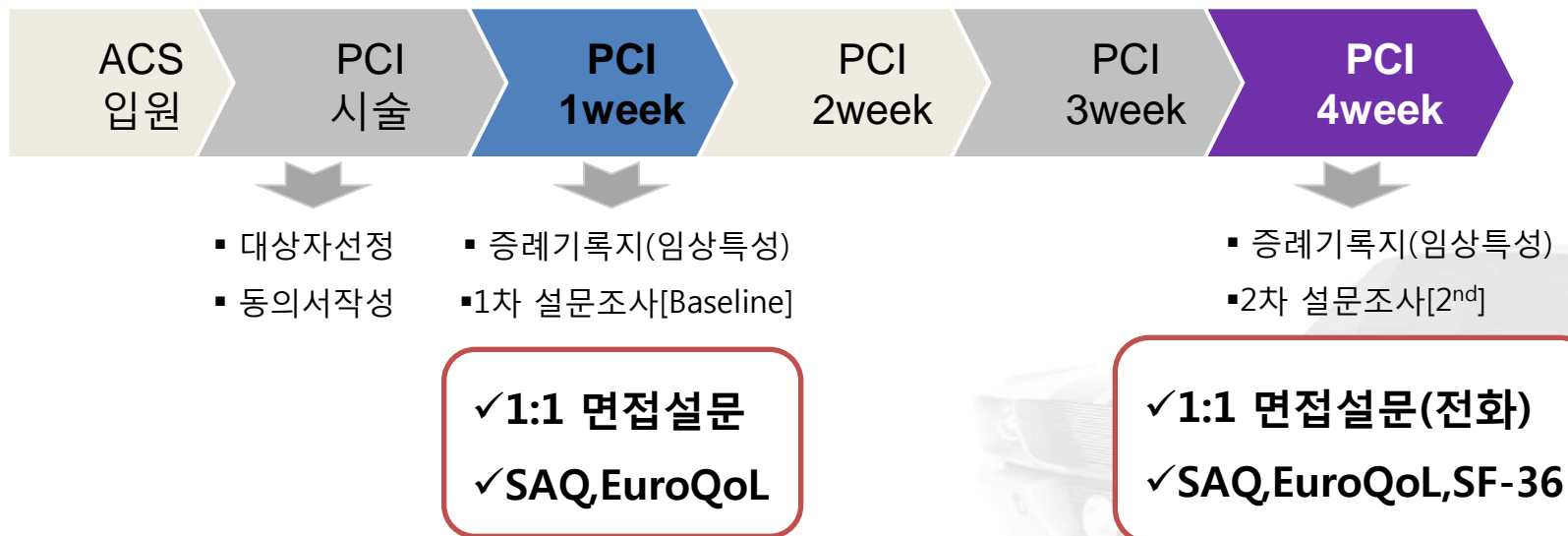
▪ NSTEMI (non ST elevation myocardial infarction)

▪ STEMI (ST elevation myocardial infarction)

연구 설계

3. 조사 방법

- 설문지를 이용한 1:1 면접
- Cross-sectional survey



연구 설계

4. 조사 내용

조사항목	세부내용
인구학적 특성	성별, 연령
임상적 특성	상병, PCI 시술유형, Risk Factor, 재원기간, 약물치료 현황, 예후(2차 발병)
삶의 질 점수	SAQ: Angina specific, self-reported questionnaire CCS Angina Grade
	EuroQoL (EQ-5D, EQ-VAS): Generic, self-reported questionnaire Patients global state of well-being
	SF-36 Generic, self-reported questionnaire Patients global state of well-being

SAQ (the Seattle Angina Questionnaire)

1. Angina specific measure

Physical Limitation (9 Item)

2. 5가지 범주의 19항목 설문

Angina Stability (1 Item)

3. 각 범주에 대해
0점 (Worst)~ 100점 (Best)

Angina Frequency (2 Item)

4. Generic measure에 비해
angina 관련 삶의 질을 구체적
으로 평가할 수 있다.

Treatment Satisfaction (4 Item)

5. 허혈성 심장질환 치료 효과 판정
수단으로 이용

Quality of Life (3 Item)

SAQ (the Seattle Angina Questionnaire)

Physical Limitation (신체활동제한)

1. 다음은 사람들이 주중에 자주하는 활동들의 목록입니다. 몇 가지 의학적인 문제를 겪고 있는 일부 사람들의 경우에는 무엇 때문에 활동에 제약을 받는 지 판단하기 힘들지만, 아래에 열거된 활동들을 살펴보고 **지난 4주 동안** 가슴통증, 흉부압박감 또는 협심증 증상으로 인해 얼마나 제약을 받았는지 해당부분에 ✓표시하시기 바랍니다.

활 동	심하게 제약 받았음	상당히 제약 받았음	어느 정도 제약 받았음	약간 제약 받았음	전혀 제약 받지 않았음	다른 이유로 제약 받거나 해당 활동을 하지 않았음
혼자서 옷 입기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
집안에서 걷기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
샤워하기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
언덕이나 1층 계단을 쉬지 않고 오르기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
정원 가꾸기, 진공청소하기, 식료품 나르기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
빠른 걸음으로 100미터 이상 걷기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
달리기 또는 조깅하기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
가구 등 무거운 물건을 들거나 옮기기 또는 어린아이 들기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
격렬한 운동(즉, 수영, 테니스)에 참여하기	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAQ (the Seattle Angina Questionnaire)

Angina Frequency (협심증 주기)

3. **지난4주 동안** 평균적으로, 몇 차례나 가슴통증, 흉부 압박감, 또는 협심증 증상을 느끼셨습니까?

나는 가슴통증, 흉부 압박감, 또는 협심증 증상을_____느낀 적이 있다.

- | | | | | | |
|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|---------------------------|
| 하루 4차례이상 | 하루 1~3차례 | 매일 아니지만,
1주일에 3차례
이상 | 1주일에
1~2차례 | 1주일에
1차례 미만 | 지난 4주 동안
전혀 느낀 적
없음 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

4. **지난4주 동안** 가슴통증, 흉부 압박감, 또는 협심증 증상 때문에 니트로글리세린(정제 또는 분무제)을 평균적으로 몇 차례나 복용해야 했습니까?

나는 니트로글리세린을_____복용했다.

- | | | | | | |
|--------------------------|--------------------------|----------------------------|--------------------------|--------------------------|---------------------------|
| 하루 4차례이상 | 하루 1~3차례 | 매일 아니지만,
1주일에 3차례
이상 | 1주일에
1~2차례 | 1주일에
1차례 미만 | 지난 4주 동안
전혀 느낀 적
없음 |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

SAQ (the Seattle Angina Questionnaire)

Quality of Life (삶의 질)

9. 지난 4주 동안 가슴통증, 흉부 압박감, 또는 협심증 증상 때문에 삶의 즐거움이 얼마나 제약을 받았습니까?

심하게
제한 받았음

상당히 제한
받았음

어느 정도
제한 받았음

약간
제한 받았음

전혀
제한 받지 않았음

10. 지금과 같이 가슴통증, 흉부 압박감, 또는 협심증 증상으로 여생을 보내야 한다면 기분이 어떠하시겠습니까?

전혀 만족하지
않음

대체로 만족하지
않음

어느 정도
만족함

대체로 만족함

전적으로 만족함

11. 심장마비를 일으키거나 급사할 지도 모른다는 생각이나 걱정을 얼마나 자주 하시겠습니까?

끊임없이 그런
생각이나 걱정을
한다

종종 그런
생각이나
걱정을 한다

가끔 그런
생각이나 걱정을
한다

그런 생각이나
걱정을 거의
하지 않는다

그런 생각이나
걱정을 결코 하지
않는다

SAQ (the Seattle Angina Questionnaire)

Anginal Stability (협심증 안정도)

2. 4주 전과 비교하여, 가장 격렬한 활동을 할 때 가슴통증, 흉부 압박감, 또는 협심증 증상을 얼마나 자주 느끼십니까?

나는 가슴통증, 흉부 압박감, 또는 협심증 증상을_____느낀 적이 있다.

훨씬 더 자주

약간 더 자주

거의 동일하게

약간 덜 자주

훨씬 덜 자주

지난 4주 동안
가슴통증 전혀
느낀 적 없음



SAQ (the Seattle Angina Questionnaire)

Treatment Satisfaction (치료만족도)

5. 가슴통증, 흉부 압박감, 또는 협심증 증상으로 처방에 따라 약을 복용하는 것이 얼마나 성가십니까?

심하게 성가심	상당히 성가심	어느 정도 성가심	약간 성가심	전혀 성가시지 않음	의사가 약을 처방하지 않았음
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. 가슴통증, 흉부 압박감, 또는 협심증 증상을 치료하기 위해 가능한 모든 수단을 강구하고 있는데 대해 얼마나 만족하십니까?

전혀 만족하지 않음	대체로 만족하지 않음	어느 정도 만족함	대체로 만족함	전적으로 만족함
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. 귀하가 가슴통증, 흉부 압박감, 또는 협심증 증상에 관해 의사가 했던 설명에 대해 얼마나 만족하십니까?

전혀 만족하지 않음	대체로 만족하지 않음	어느 정도 만족함	대체로 만족함	전적으로 만족함
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. 전반적으로, 귀하의 가슴통증, 흉부 압박감, 또는 협심증 증상에 대한 현재의 치료에 얼마나 만족하십니까?

전혀 만족하지 않음	대체로 만족하지 않음	어느 정도 만족함	대체로 만족함	전적으로 만족함
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



EuroQoL (EQ-5D)

1. General health measure

2. 총 5개의 큰 문항

- 운동능력 (mobility)
- 자기 관리 능력 (self-care)
- 일상활동 (usual activity)
- 통증/ 불편감 (pain/discomfort)
- 불안/우울 (anxiety/depression)

3. Scale

- 1점: 장애 없음
- 2점: 약간 있음
- 3점: 장애 심함

4. 245 possible health states

일정한 공식에 의해서 → Utility score :

0 (worst, death) – 1 (best possible health)



EuroQoL (EQ-5D)

■ 운동능력

- 나는 걷는데 지장이 없다
- 나는 걷는데 다소 지장이 있다
- 나는 종일 누워있어야 한다

■ 자기 관리

- 나는 목욕을 하거나 옷을 입는데 지장이 없다
- 나는 혼자 목욕을 하거나 옷을 입는데 다소 지장이 있다
- 나는 혼자 목욕을 하거나 옷을 입을 수가 없다

■ 일상 활동 (예. 일, 공부, 가사일, 가족 또는 여가 활동)

- 나는 일상 활동을 하는데 지장이 없다
- 나는 일상 활동을 하는데 다소 지장이 있다
- 나는 일상 활동을 할 수가 없다

■ 통증/불편

- 나는 통증이나 불편감이 없다
- 나는 다소 통증이나 불편감이 있다
- 나는 매우 심한 통증이나 불편감이 있다

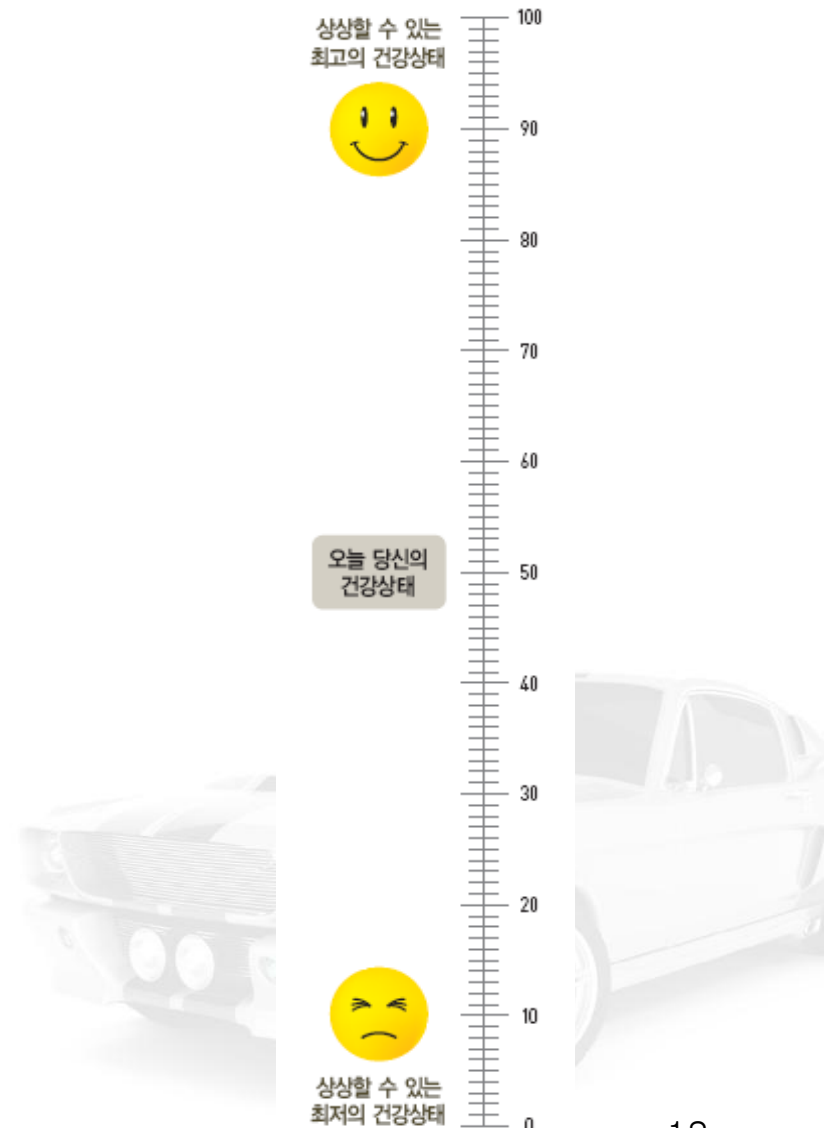
■ 불안/우울

- 나는 불안하거나 우울하지 않다
- 나는 다소 불안하거나 우울하다
- 나는 매우 심하게 불안하거나 우울하다



EuroQoL (EQ-VAS)

1. 20 cm 자 위에 자신 현재 상태를 표현
2. Scale: 0 (worst) – 100 (best)
3. 환자가 자신을 표현하고 검사자가 상태를 판단하기 쉬운 장점이 있다.



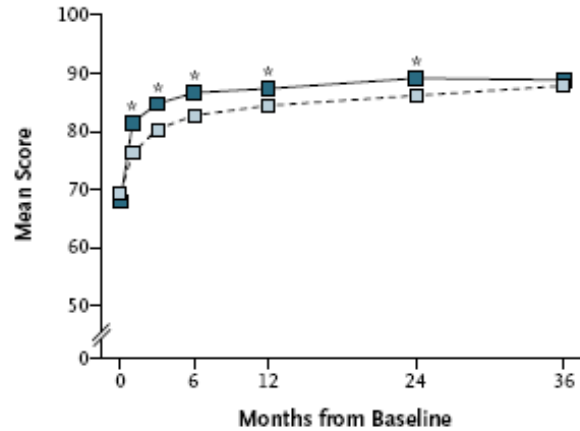
선행 삶의 질 연구 결과 (논문 1)

<p>연구 명</p>	<p>Effect of PCI on Quality of life in patients with stable CAD, Weintraub et al, NEJM 2008</p>																																																
<p>연구 대상</p>	<p>안정형 관상동맥질환 환자 2287명 대상 (무작위로 PCI + 약물치료 군과 약물치료만 받는 군으로 나눔)</p>																																																
<p>측정 도구</p>	<p>1) 협심증과 관련된 특정 건강 상태 : SAQ 2) 전반적인 신체적, 정신적 기능 : RAND -36</p>																																																
<p>연구 결과</p>	<p>A Physical Limitation</p> <table border="1"> <thead> <tr> <th>Months from Baseline</th> <th>PCI + OMT (Mean Score)</th> <th>OMT (Mean Score)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>~74*</td> <td>~66</td> </tr> <tr> <td>1</td> <td>~76*</td> <td>~70</td> </tr> <tr> <td>3</td> <td>~77*</td> <td>~72</td> </tr> <tr> <td>6</td> <td>~77*</td> <td>~72</td> </tr> <tr> <td>12</td> <td>~74</td> <td>~73</td> </tr> <tr> <td>24</td> <td>~73</td> <td>~72</td> </tr> <tr> <td>36</td> <td>~74</td> <td>~74</td> </tr> </tbody> </table> <p>B Angina Stability</p> <table border="1"> <thead> <tr> <th>Months from Baseline</th> <th>PCI + OMT (Mean Score)</th> <th>OMT (Mean Score)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>~54</td> <td>~54</td> </tr> <tr> <td>1</td> <td>~80*</td> <td>~73</td> </tr> <tr> <td>3</td> <td>~77*</td> <td>~73</td> </tr> <tr> <td>6</td> <td>~76*</td> <td>~73</td> </tr> <tr> <td>12</td> <td>~73*</td> <td>~70</td> </tr> <tr> <td>24</td> <td>~73*</td> <td>~69</td> </tr> <tr> <td>36</td> <td>~71</td> <td>~70</td> </tr> </tbody> </table> <p>Legend: ■ PCI + OMT □ OMT</p>	Months from Baseline	PCI + OMT (Mean Score)	OMT (Mean Score)	0	~74*	~66	1	~76*	~70	3	~77*	~72	6	~77*	~72	12	~74	~73	24	~73	~72	36	~74	~74	Months from Baseline	PCI + OMT (Mean Score)	OMT (Mean Score)	0	~54	~54	1	~80*	~73	3	~77*	~73	6	~76*	~73	12	~73*	~70	24	~73*	~69	36	~71	~70
Months from Baseline	PCI + OMT (Mean Score)	OMT (Mean Score)																																															
0	~74*	~66																																															
1	~76*	~70																																															
3	~77*	~72																																															
6	~77*	~72																																															
12	~74	~73																																															
24	~73	~72																																															
36	~74	~74																																															
Months from Baseline	PCI + OMT (Mean Score)	OMT (Mean Score)																																															
0	~54	~54																																															
1	~80*	~73																																															
3	~77*	~73																																															
6	~76*	~73																																															
12	~73*	~70																																															
24	~73*	~69																																															
36	~71	~70																																															

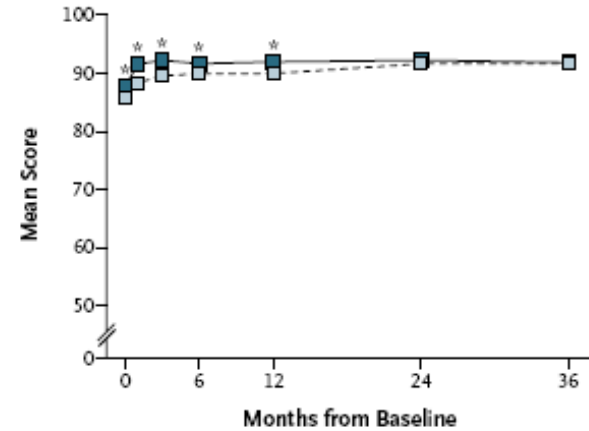
선행 삶의 질 연구 결과 (논문 1)

연구 결과

C Angina Frequency



D Treatment Satisfaction



E Quality of Life

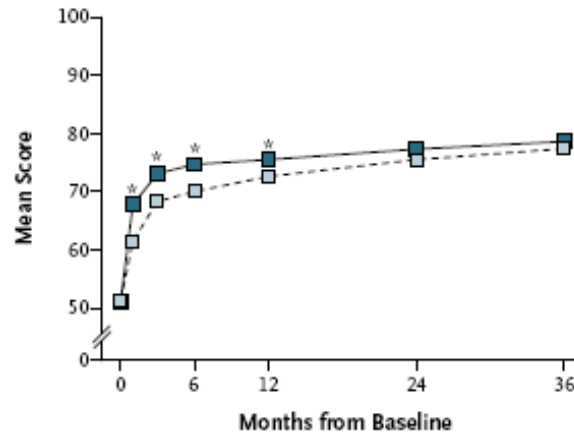


Figure 2. Mean Scores over Time in Five Domains of the Seattle Angina Questionnaire.

An asterisk indicates $P < 0.01$ for the difference between treatment groups. OMT denotes optimal medical therapy, and PCI percutaneous coronary intervention.



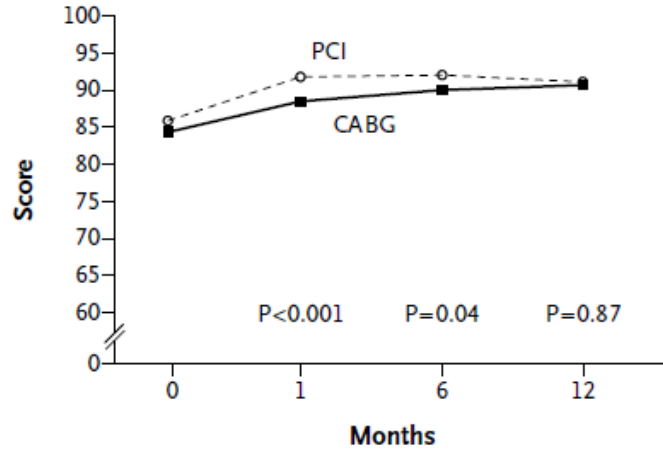
선행 삶의 질 연구 결과 (논문 2)

<p>연구 명</p>	<p>QoL after PCI with DES or CABG, Cohen et al, NEJM 2011</p>																																								
<p>연구 대상</p>	<p>3VD or 좌주간지 관상동맥질환 환자 1800명 대상</p>																																								
<p>측정 도구</p>	<p>1) 협심증과 관련된 특정 건강 상태 : SAQ 2) 전반적인 신체적 기능 : SF -36</p>																																								
<p>연구 결과</p>	<div style="display: flex; justify-content: space-around;"> <div> <p>A SAQ Angina Frequency</p> <table border="1"> <caption>SAQ Angina Frequency Data</caption> <thead> <tr> <th>Months</th> <th>CABG Score</th> <th>PCI Score</th> <th>P-value</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>~70</td> <td>~70</td> <td>-</td> </tr> <tr> <td>1</td> <td>~89</td> <td>~90</td> <td>0.17</td> </tr> <tr> <td>6</td> <td>~93</td> <td>~91</td> <td>0.04</td> </tr> <tr> <td>12</td> <td>~94</td> <td>~93</td> <td>0.03</td> </tr> </tbody> </table> </div> <div> <p>B SAQ Physical Limitation</p> <table border="1"> <caption>SAQ Physical Limitation Data</caption> <thead> <tr> <th>Months</th> <th>CABG Score</th> <th>PCI Score</th> <th>P-value</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>~66</td> <td>~66</td> <td>-</td> </tr> <tr> <td>1</td> <td>~67</td> <td>~79</td> <td><0.001</td> </tr> <tr> <td>6</td> <td>~80</td> <td>~81</td> <td>0.13</td> </tr> <tr> <td>12</td> <td>~82</td> <td>~81</td> <td>0.21</td> </tr> </tbody> </table> </div> </div>	Months	CABG Score	PCI Score	P-value	0	~70	~70	-	1	~89	~90	0.17	6	~93	~91	0.04	12	~94	~93	0.03	Months	CABG Score	PCI Score	P-value	0	~66	~66	-	1	~67	~79	<0.001	6	~80	~81	0.13	12	~82	~81	0.21
Months	CABG Score	PCI Score	P-value																																						
0	~70	~70	-																																						
1	~89	~90	0.17																																						
6	~93	~91	0.04																																						
12	~94	~93	0.03																																						
Months	CABG Score	PCI Score	P-value																																						
0	~66	~66	-																																						
1	~67	~79	<0.001																																						
6	~80	~81	0.13																																						
12	~82	~81	0.21																																						

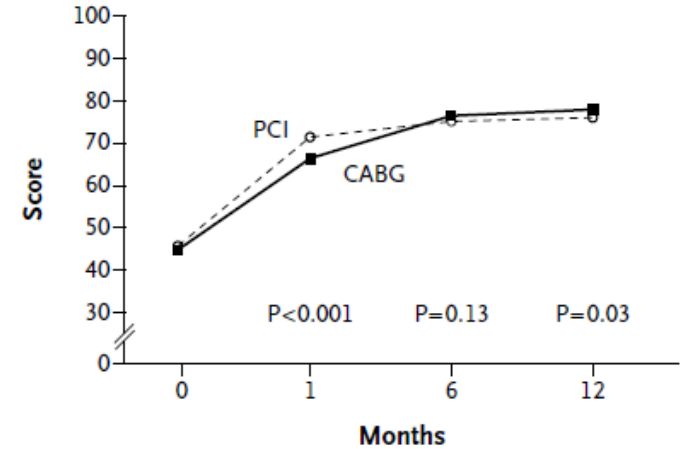
선행 삶의 질 연구 결과 (논문 2)

연구 결과

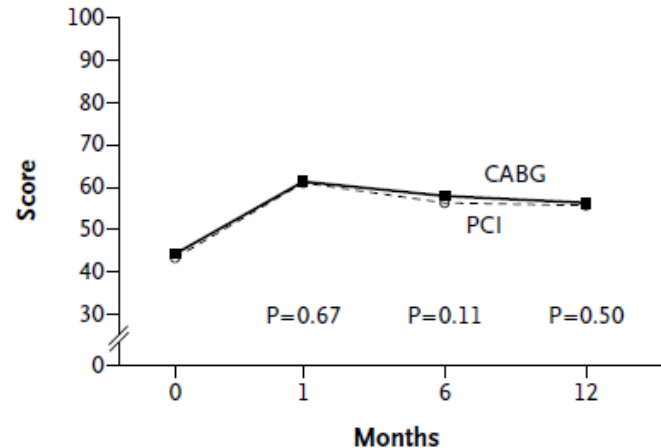
C SAQ Treatment Satisfaction



D SAQ Quality of Life

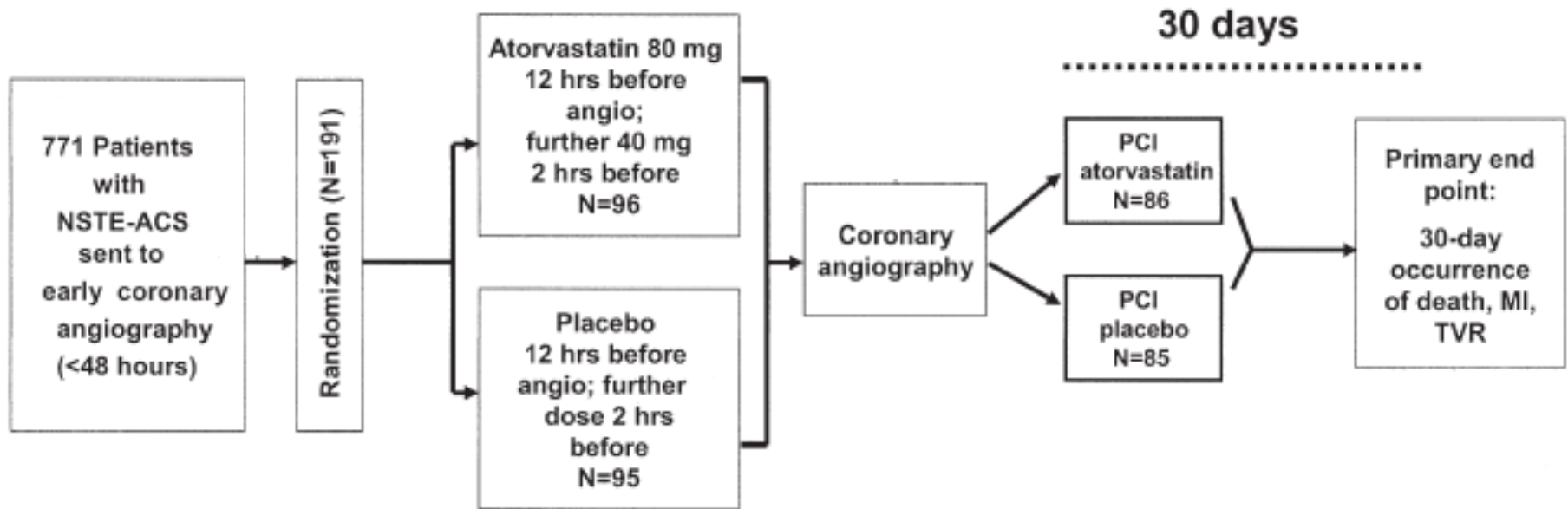


E SAQ Angina Stability

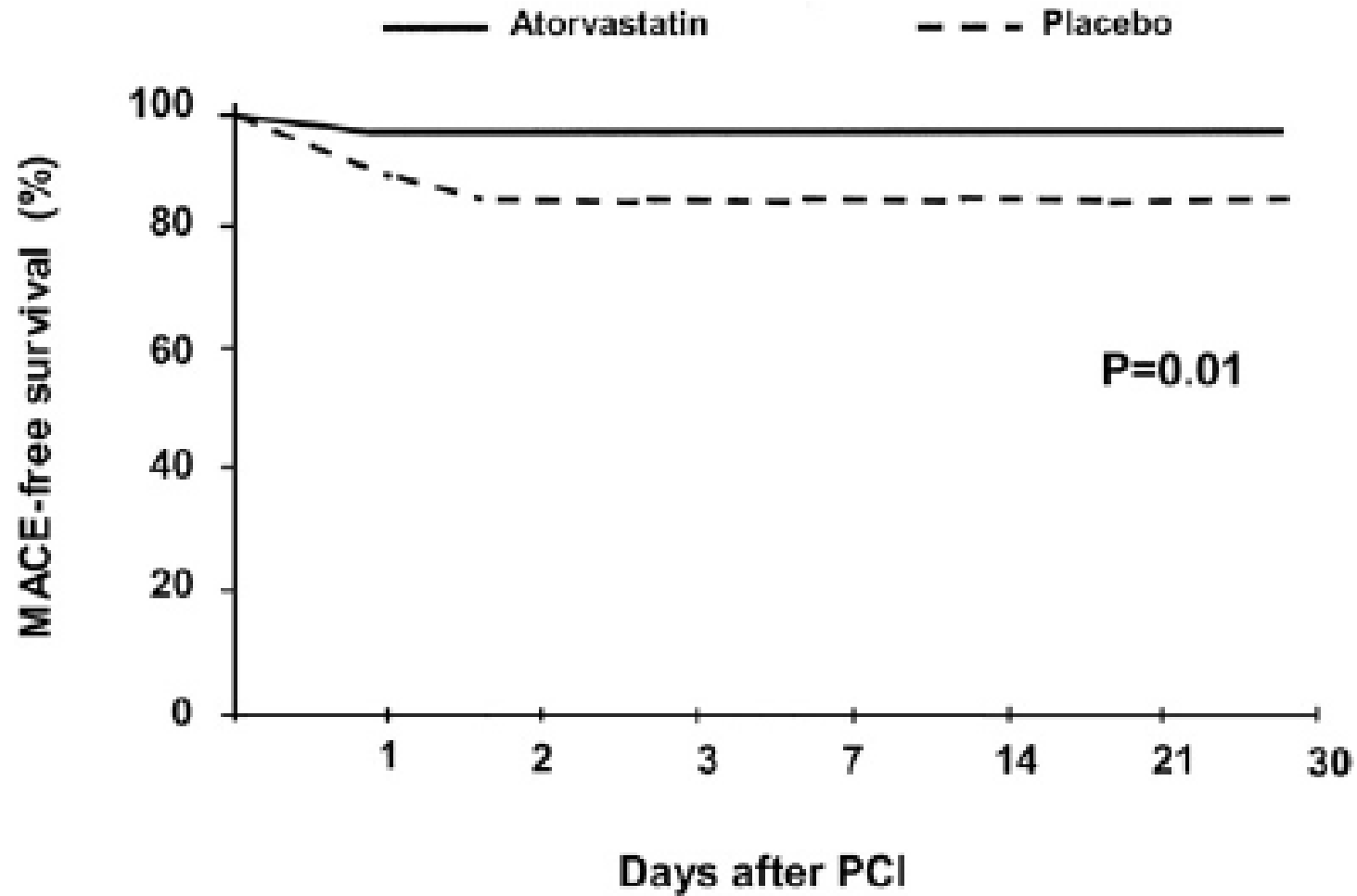


ACS에서 PCI 전후의 Statin 약물 치료 현황

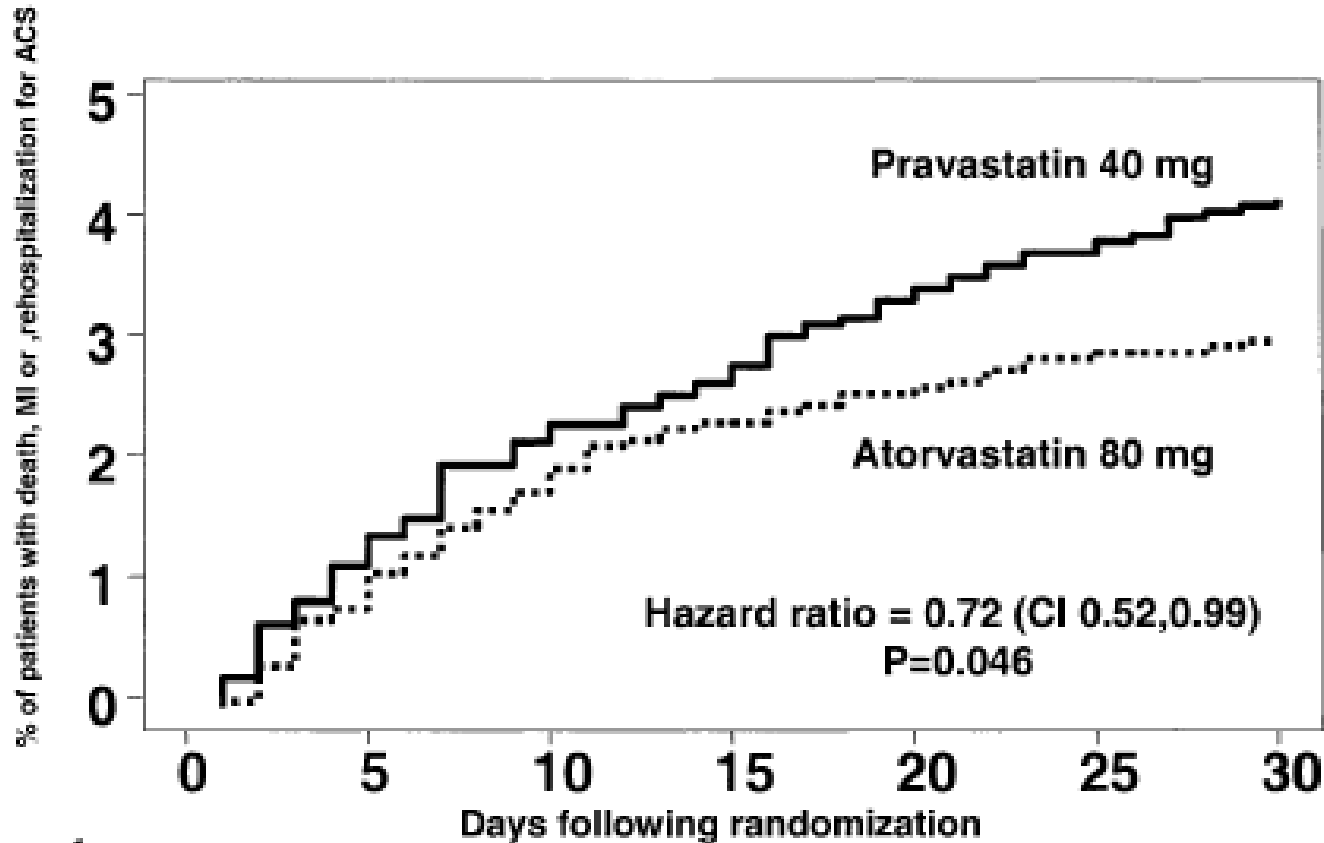
ARMYDA-ACS (Protocol)



ARMYDA-ACS



PROVE IT-TIMI 22 Trial (UA, NSTEMI, STEMI)



Number of
Patients
at risk

2063
2099

2025
2064

2002
2042

1988
2026

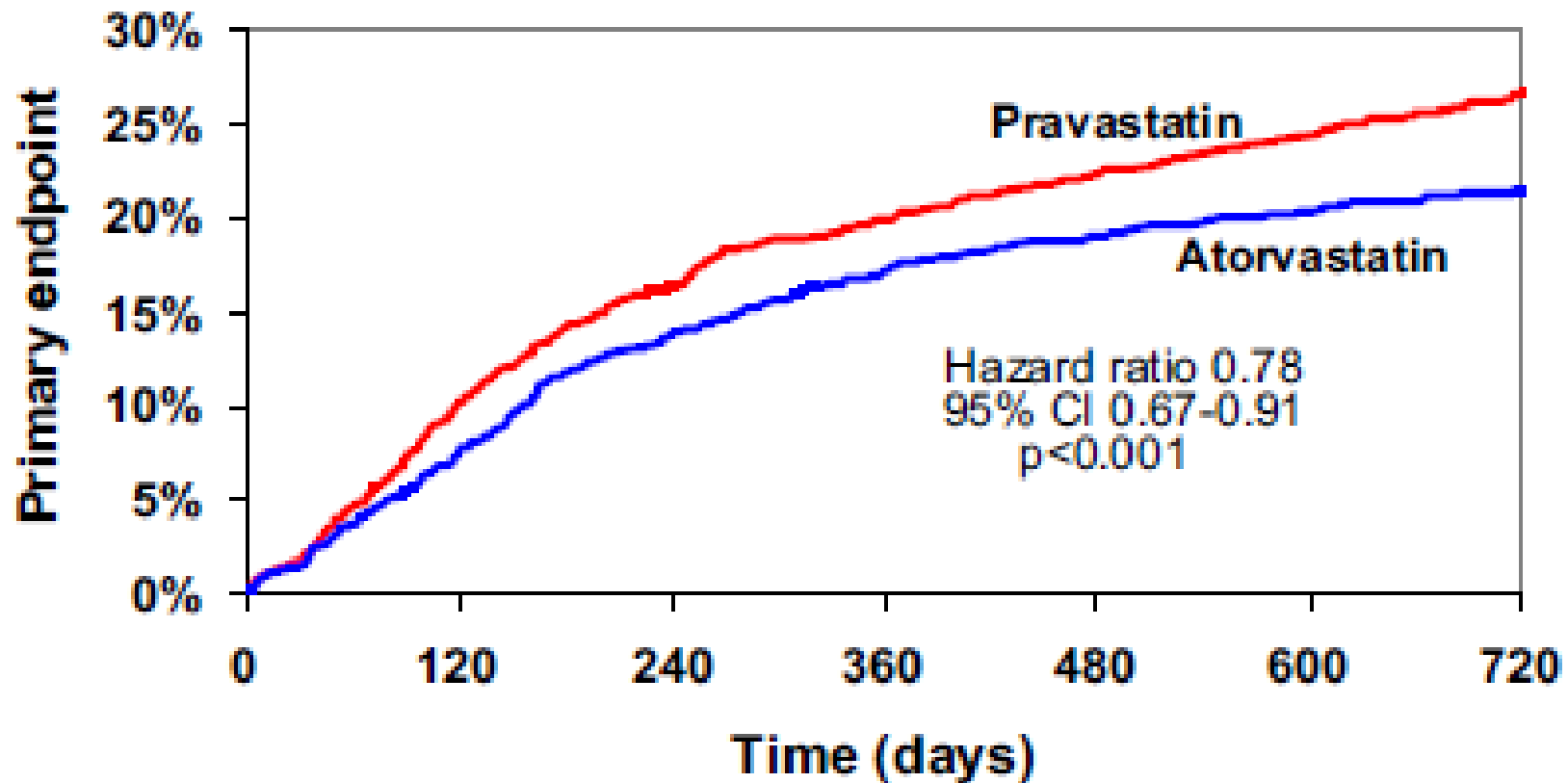
1969
2015

1958
2007

1943
1997

Pravastatin
Atorvastatin

PCI-PROVE IT



The STATIN STEMI Trial

	Atorvastatin		p Value
	80 mg (n = 86)	10 mg (n = 85)	
Death			0.31
Any cause	1 (1.2)	3 (3.5)	
Cardiovascular	0 (0.0)	3 (3.5)	
Nonfatal MI	4 (4.7)	6 (7.1)	0.50
Periprocedural MI	3 (3.5)	5 (5.9)	0.50
TVR	0 (0.0)	1 (1.2)	0.50
MACE	5 (5.8)	9 (10.6)	0.26
Stent thrombosis	0 (0.0)	1 (1.2)	0.50

Statin Therapy in ACS

- **ATP III Guideline**
 - LDL goal < 70 mg/dl
- **PROVE IT–TIMI 22 trial (UA/NSTEMI + STEMI)**
 - ACC/AHA Guideline
 - Intensive statin therapy
 - At least at the time of hospital discharge
- **ARMYDA–ACS (NSTEMI)**
 - High dose statin before PCI
- **The STATIN STEMI Trial**
 - Pre–PCI high dose statin in STEMI
 - No clinical benefit



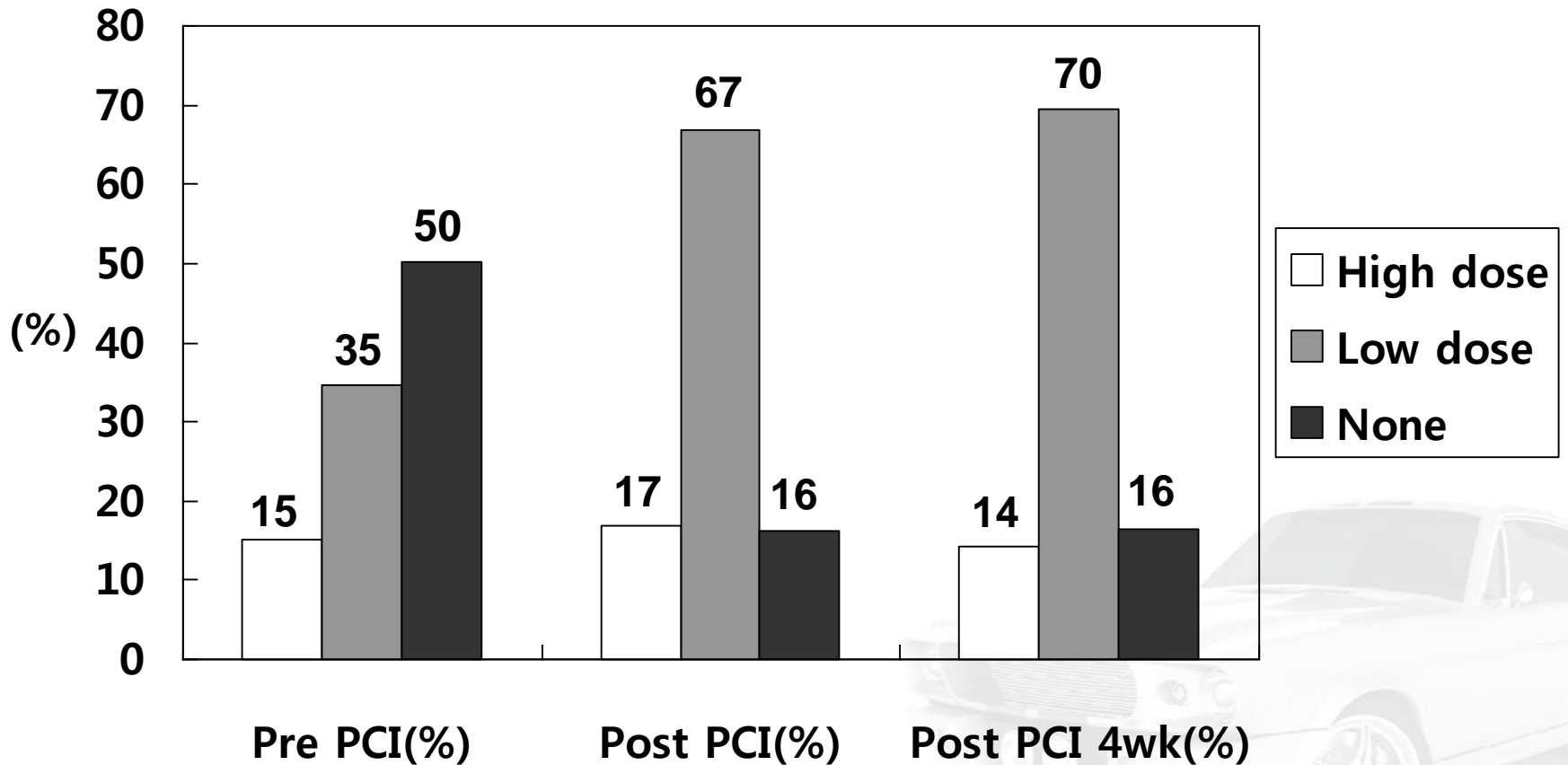
Statin therapy in ACS

The lower, the better.

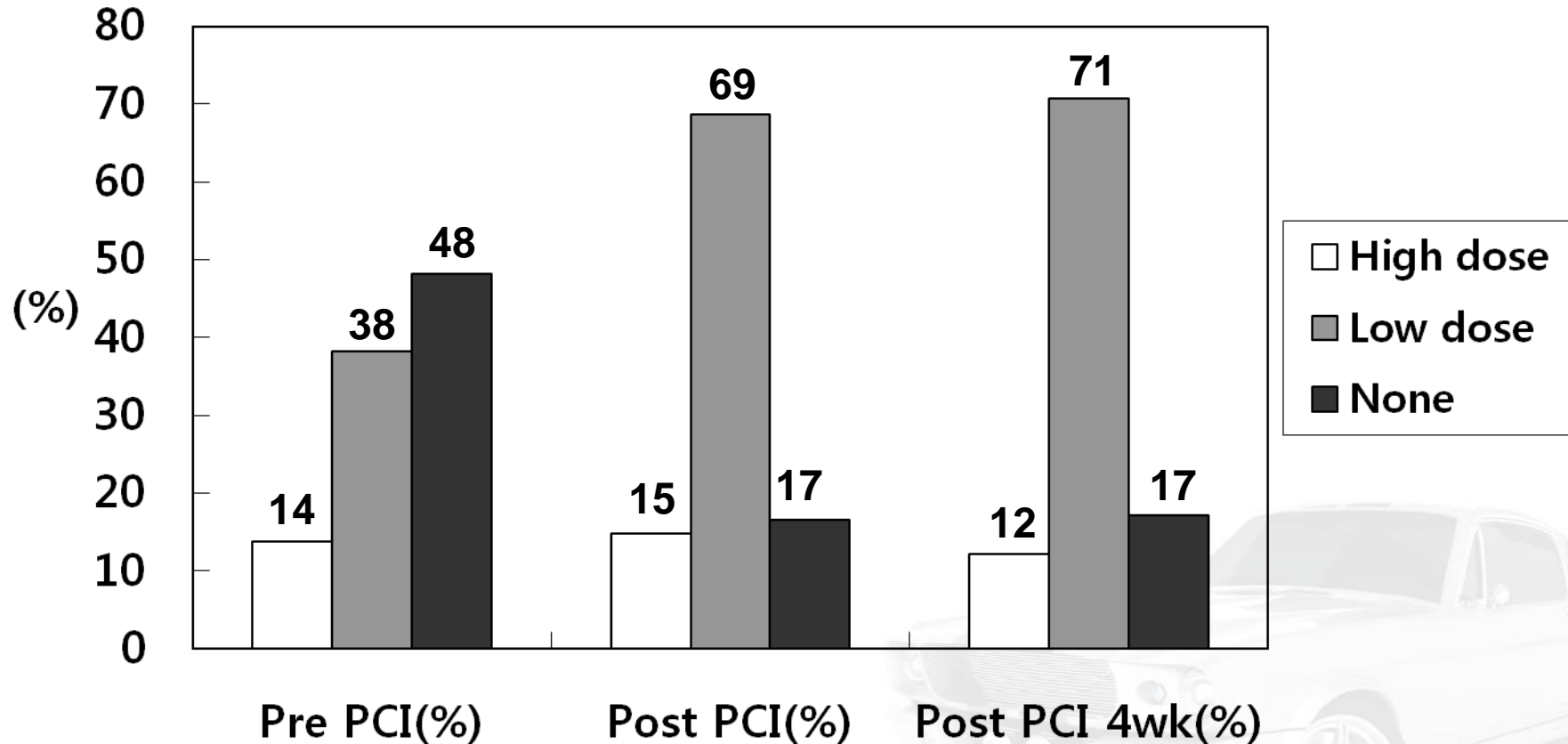
The faster, the better.



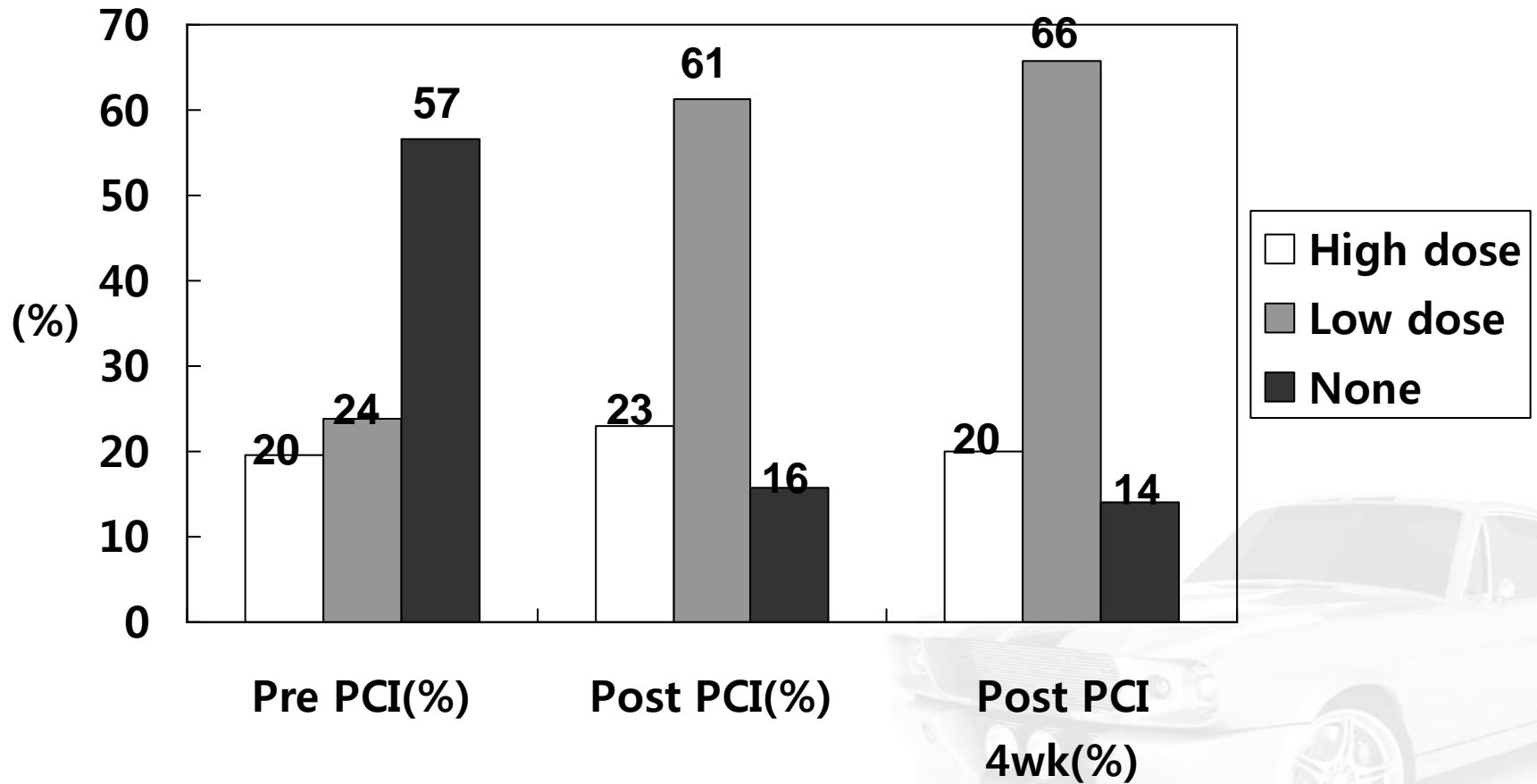
Statin 투여 현황 (All)



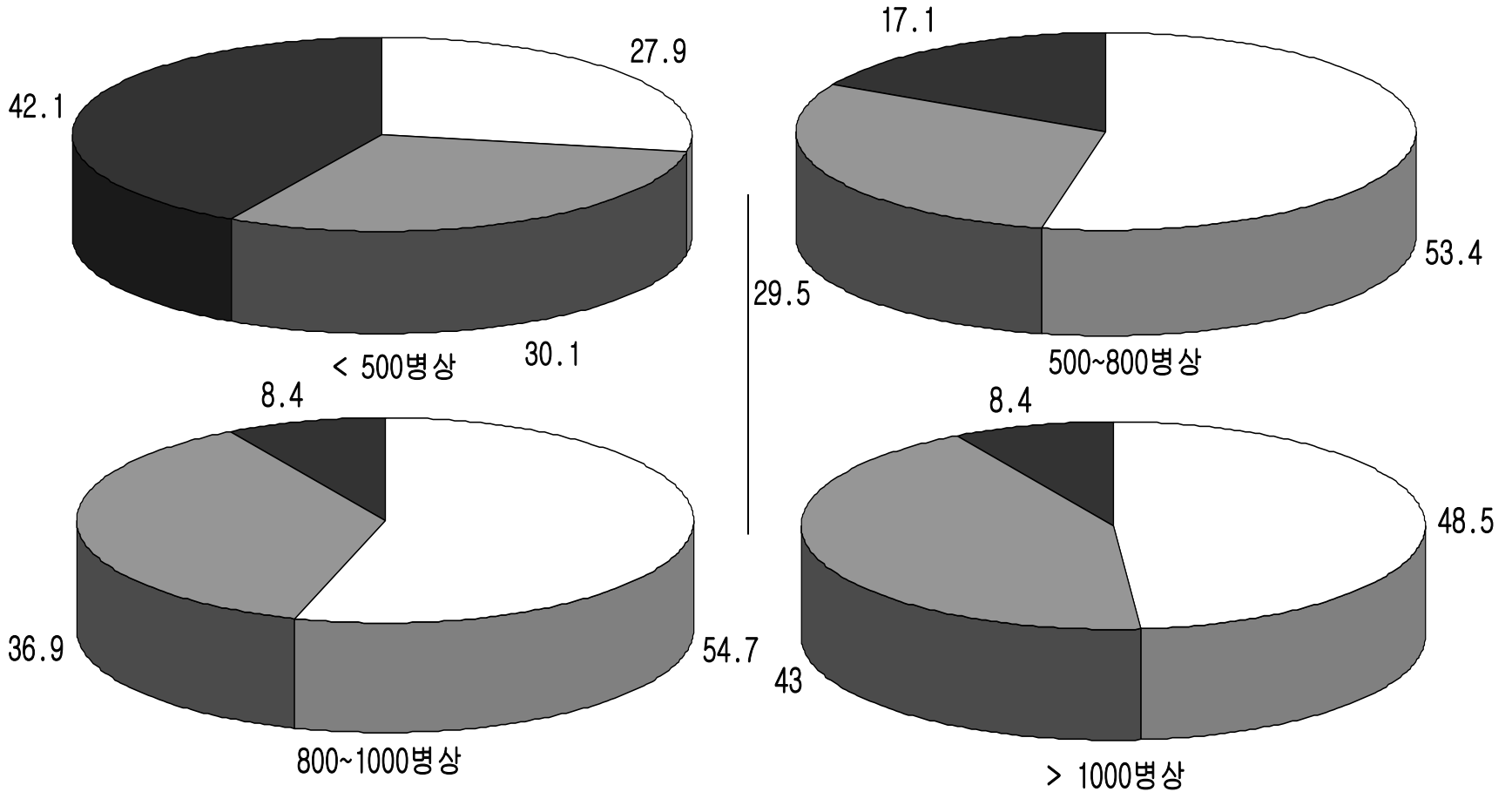
Statin 투여 현황 (UA/NSTEMI)



Statin 투여 현황 (STEMI)

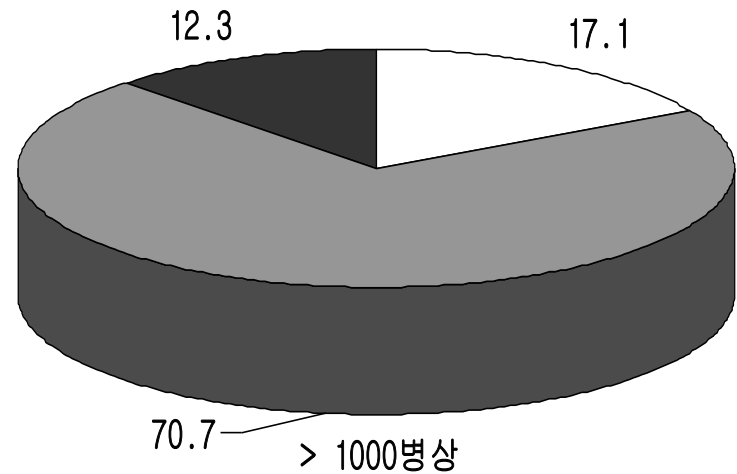
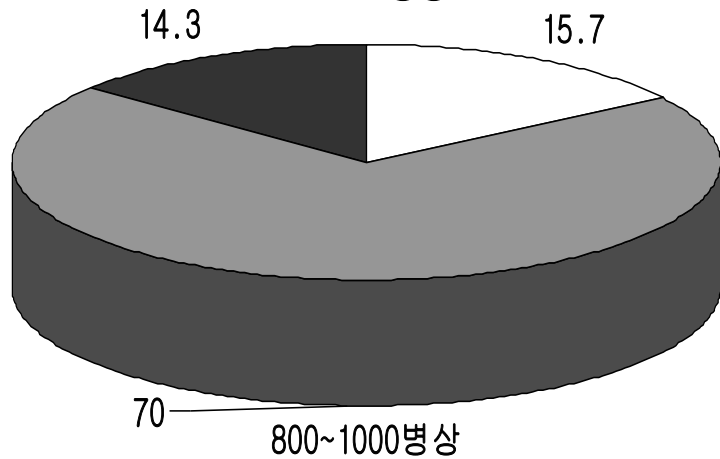
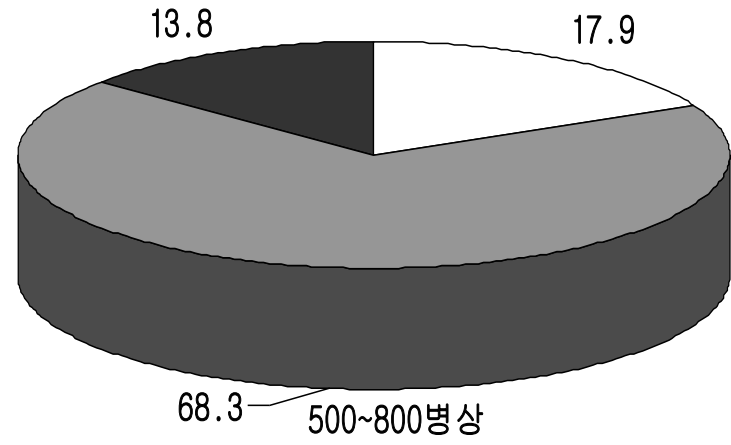
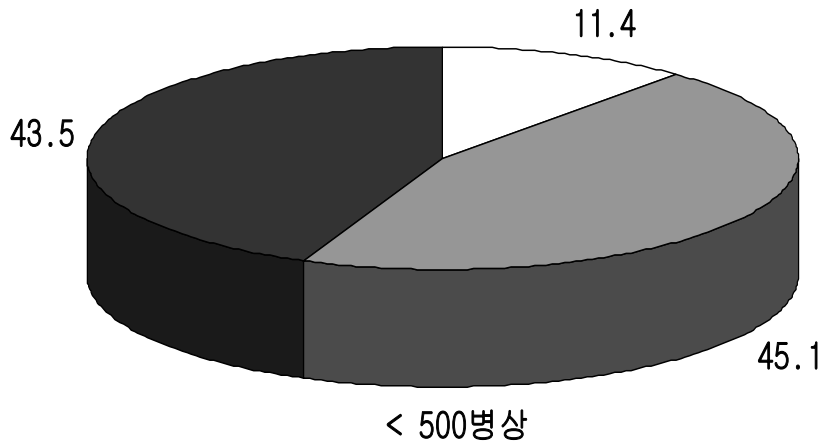


병상수에 따른 Statin 투여 Pattern (Pre-PCI)



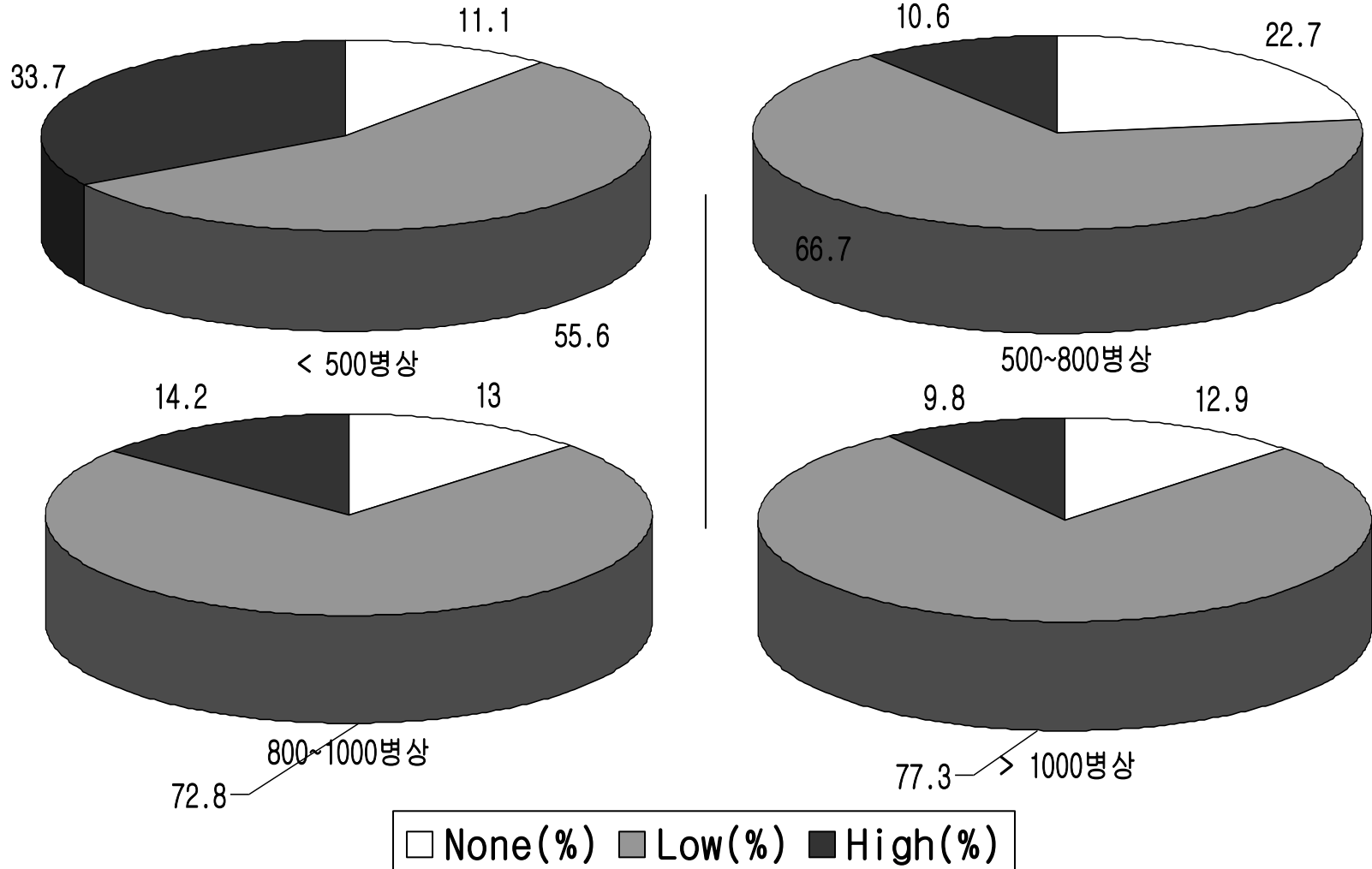
□ None(%) ■ Low(%) ■ High(%)

병상수에 따른 Statin 투여 Pattern (Post-PCI)



□ None(%) ■ Low(%) ■ High(%)

병상수에 따른 Statin 투여 Pattern (Post-PCI 4 wk)



High Dose Statin 투여에 영향을 미치는 요인 (Pre-PCI)

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age	1.003	0.995-1.012	0.442	1.014	1.003-1.024	0.011
Male	0.924	0.756-1.13	0.443	0.889	0.691-1.144	0.360
Diagnosis(STEMI)	1.536	1.252-1.884	0.000	1.717	1.343-2.195	0.000
Previous history of MI/PCI/CABG/stroke	0.761	0.598-0.968	0.026	0.830	0.635-1.084	0.171
Current smoker	1.351	1.106-1.649	0.003	1.457	1.136-1.87	0.003
DM	1.103	0.903-1.346	0.337	1.156	0.92-1.453	0.214
Hypertension	0.827	0.684-1.001	0.051	0.863	0.691-1.079	0.197
Dyslipidemia	1.220	0.986-1.509	0.067	1.192	0.939-1.512	0.148
SAQ baseline						
physical limitation	0.996	0.992-1	0.077	1.003	0.998-1.009	0.252
angina frequency	0.993	0.99-0.997	0.000	0.994	0.989-0.998	0.008
angina stability	1.002	0.999-1.005	0.295			
treat satisfaction	1.007	1-1.013	0.036			
QoL	0.987	0.982-0.992	0.000	0.984	0.978-0.991	0.000
EQ-5D baseline						
Total	0.946	0.674-1.329	0.750	1.318	0.866-2.007	0.198

High Dose Statin 투여에 영향을 미치는 요인 (Post-PCI)

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age	0.986	0.978-0.994	0.001	0.996	0.986-1.006	0.459
Male	1.164	0.954-1.42	0.134	0.923	0.72-1.183	0.526
Diagnosis(STEMI)	1.726	1.422-2.096	0.000	1.740	1.376-2.201	0.000
Previous history of MI/PCI/CABG/stroke	0.711	0.563-0.898	0.004	0.872	0.674-1.128	0.296
Current smoker	1.546	1.279-1.868	0.000	1.362	1.074-1.728	0.011
DM	0.840	0.689-1.024	0.084	0.932	0.743-1.168	0.540
Hypertension	0.795	0.663-0.954	0.013	0.925	0.746-1.146	0.475
Dyslipidemia	1.463	1.199-1.786	0.000	1.409	1.127-1.761	0.003
SAQ baseline						
physical limitation	1.002	0.998-1.007	0.299	1.002	0.997-1.008	0.435
angina frequency	0.997	0.993-1	0.080	0.994	0.99-0.999	0.011
angina stability	1.007	1.004-1.009	0.000			
treat satisfaction	1.000	0.995-1.006	0.902			
QoL	0.995	0.99-0.999	0.026	0.991	0.985-0.997	0.004
EQ-5D baseline						
Total	1.755	1.217-2.529	0.003	1.923	1.243-2.976	0.003

Statin 미투여에 영향을 미치는 요인 (Post-PCI)

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age	1.013	1.004-1.021	0.003	1.009	0.999-1.02	0.074
Male	1.033	0.847-1.259	0.751	1.052	0.827-1.339	0.677
Diagnosis(STEMI)	0.944	0.763-1.169	0.598	0.914	0.71-1.177	0.485
Previous history of MI/PCI/CABG/stroke	1.123	0.906-1.393	0.289	1.085	0.855-1.377	0.502
Current smoker	0.867	0.706-1.065	0.173	0.898	0.698-1.155	0.403
DM	1.158	0.955-1.405	0.135	1.045	0.838-1.305	0.694
Hypertension	0.875	0.727-1.053	0.157	0.869	0.7-1.078	0.201
Dyslipidemia	0.338	0.255-0.446	0.000	0.336	0.246-0.457	0.000
SAQ baseline						
physical limitation	1.003	0.999-1.008	0.126	1.000	0.994-1.005	0.906
angina frequency	1.005	1.002-1.009	0.004	1.002	0.997-1.007	0.426
angina stability	0.999	0.996-1.002	0.578			
treat satisfaction	1.000	0.994-1.006	0.955			
QoL	1.014	1.01-1.019	0.000	1.013	1.007-1.019	0.000
EQ-5D baseline						
Total	0.917	0.661-1.273	0.605	0.739	0.504-1.083	0.120

High Dose Statin 투여에 영향을 미치는 요인 (Post-PCI 4 wk)

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age	0.981	0.972-0.989	0.000	0.991	0.98-1.002	0.106
Male	1.201	0.969-1.489	0.095	0.869	0.662-1.14	0.310
Diagnosis(STEMI)	1.816	1.478-2.232	0.000	1.704	1.321-2.197	0.000
Previous history of MI/PCI/CABG/stroke	0.840	0.66-1.071	0.159	1.041	0.792-1.369	0.771
Current smoker	1.756	1.437-2.146	0.000	1.556	1.206-2.008	0.001
DM	0.846	0.685-1.046	0.123	0.899	0.702-1.152	0.400
Hypertension	0.787	0.647-0.956	0.016	0.893	0.708-1.127	0.342
Dyslipidemia	1.487	1.203-1.838	0.000	1.445	1.136-1.837	0.003
SAQ baseline						
physical limitation	1.002	0.998-1.007	0.342	1.003	0.997-1.009	0.271
angina frequency	0.995	0.992-0.999	0.014	0.993	0.988-0.997	0.003
angina stability	1.005	1.001-1.008	0.004			
treat satisfaction	1.005	0.998-1.011	0.144			
QoL	0.994	0.989-0.999	0.025	0.991	0.984-0.997	0.006
EQ-5D baseline						
Total	1.508	1.028-2.211	0.036	1.559	0.986-2.465	0.058

Statin 미투여에 영향을 미치는 요인 (Post-PCI 4wk)

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age	1.014	1.005-1.022	0.002	1.010	0.999-1.02	0.065
Male	1.018	0.836-1.241	0.858	1.013	0.797-1.289	0.913
Diagnosis (STEMI)	0.792	0.636-0.987	0.037	0.831	0.641-1.077	0.162
Previous history of MI/PCI/CABG/stroke	1.018	0.818-1.267	0.870	0.928	0.728-1.183	0.548
Current smoker	0.970	0.793-1.187	0.768	0.963	0.748-1.238	0.767
DM	1.162	0.958-1.409	0.127	1.041	0.835-1.299	0.720
Hypertension	1.008	0.837-1.214	0.932	1.053	0.847-1.309	0.643
Dyslipidemia	0.309	0.232-0.412	0.000	0.290	0.211-0.4	0.000
SAQ baseline						
physical limitation	1.003	0.999-1.007	0.158	1.003	0.997-1.008	0.302
angina frequency	1.002	0.998-1.005	0.359	0.997	0.992-1.001	0.153
angina stability	1.003	1-1.006	0.054			
treat satisfaction	0.997	0.991-1.003	0.357			
QoL	1.014	1.009-1.019	0.000	1.015	1.009-1.021	0.000
EQ-5D baseline						
Total	0.872	0.63-1.208	0.411	0.781	0.531-1.151	0.212

Statin 투여 Pattern (정의)

	Pre-PCI/Post-PCI/Post-PCI 4wk	N	Total
None Pattern	None/None/None	324	324 (12.6%)
Low-Dose Pattern	Low/Low/Low	924	1852 (71.8%)
	None/Low/Low	928	
High-Dose Pattern	High/High/High	231	402 (15.6%)
	Low/High/High	44	
	None/High/High	127	

Statin 투여 Pattern에 영향을 미치는 요인 (None Pattern)

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age	1.017	1.006-1.028	0.002	1.015	1.001-1.028	0.033
Male	1.050	0.814-1.353	0.708	1.022	0.755-1.384	0.889
Diagnosis(STEMI)	0.755	0.564-1.011	0.059	0.749	0.533-1.052	0.095
Previous history of MI/PCI/CABG/stroke	0.955	0.72-1.266	0.748	0.838	0.613-1.145	0.267
Current smoker	0.920	0.709-1.194	0.530	0.942	0.683-1.299	0.716
DM	1.160	0.908-1.483	0.236	0.995	0.751-1.32	0.973
Hypertension	0.965	0.762-1.222	0.767	0.968	0.735-1.275	0.819
Dyslipidemia	0.235	0.158-0.351	0.000	0.229	0.148-0.353	0.000
SAQ baseline						
physical limitation	1.006	1-1.012	0.040	1.002	0.995-1.009	0.514
angina frequency	1.004	0.999-1.009	0.089	0.998	0.992-1.004	0.511
angina stability	1.002	0.998-1.006	0.294			
treat satisfaction	0.997	0.99-1.005	0.466			
QoL	1.020	1.014-1.027	0.000	1.019	1.011-1.027	0.000
EQ-5D baseline						
Total	1.108	0.712-1.724	0.650	0.895	0.537-1.49	0.669

Statin 투여 Pattern에 영향을 미치는 요인 (High Dose Pattern)

	Univariate			Multivariate		
	OR	95% CI	P value	OR	95% CI	P value
Age	0.982	0.973-0.992	0.000	0.995	0.983-1.007	0.429
Male	1.167	0.922-1.478	0.198	0.823	0.61-1.109	0.200
Diagnosis(STEMI)	1.999	1.59-2.512	0.000	1.995	1.506-2.644	0.000
Previous history of MI/PCI/CABG/stroke	0.740	0.563-0.973	0.031	0.980	0.721-1.333	0.899
Current smoker	1.829	1.466-2.281	0.000	1.718	1.298-2.275	0.000
DM	0.833	0.66-1.053	0.127	0.908	0.691-1.194	0.491
Hypertension	0.764	0.617-0.946	0.014	0.899	0.696-1.163	0.419
Dyslipidemia	1.529	1.216-1.922	0.000	1.502	1.159-1.946	0.002
SAQ baseline						
physical limitation	1.001	0.996-1.006	0.705	1.004	0.997-1.011	0.240
angina frequency	0.993	0.989-0.997	0.001	0.990	0.985-0.995	0.000
angina stability	1.006	1.003-1.01	0.000			
treat satisfaction	1.004	0.997-1.011	0.215			
QoL	0.991	0.986-0.997	0.001	0.988	0.981-0.996	0.002
EQ-5D baseline						
Total	1.556	1.01-2.398	0.045	1.795	1.06-3.04	0.029

요약

- High dosage statin 사용
 - STEMI
 - Dyslipidemia (+)
 - SAQ가 나쁜 환자
 - General Health가 좋은 환자
- Low dosage statin 사용
 - Old age
 - Dyslipidemia (-)
 - SAQ가 좋은 환자

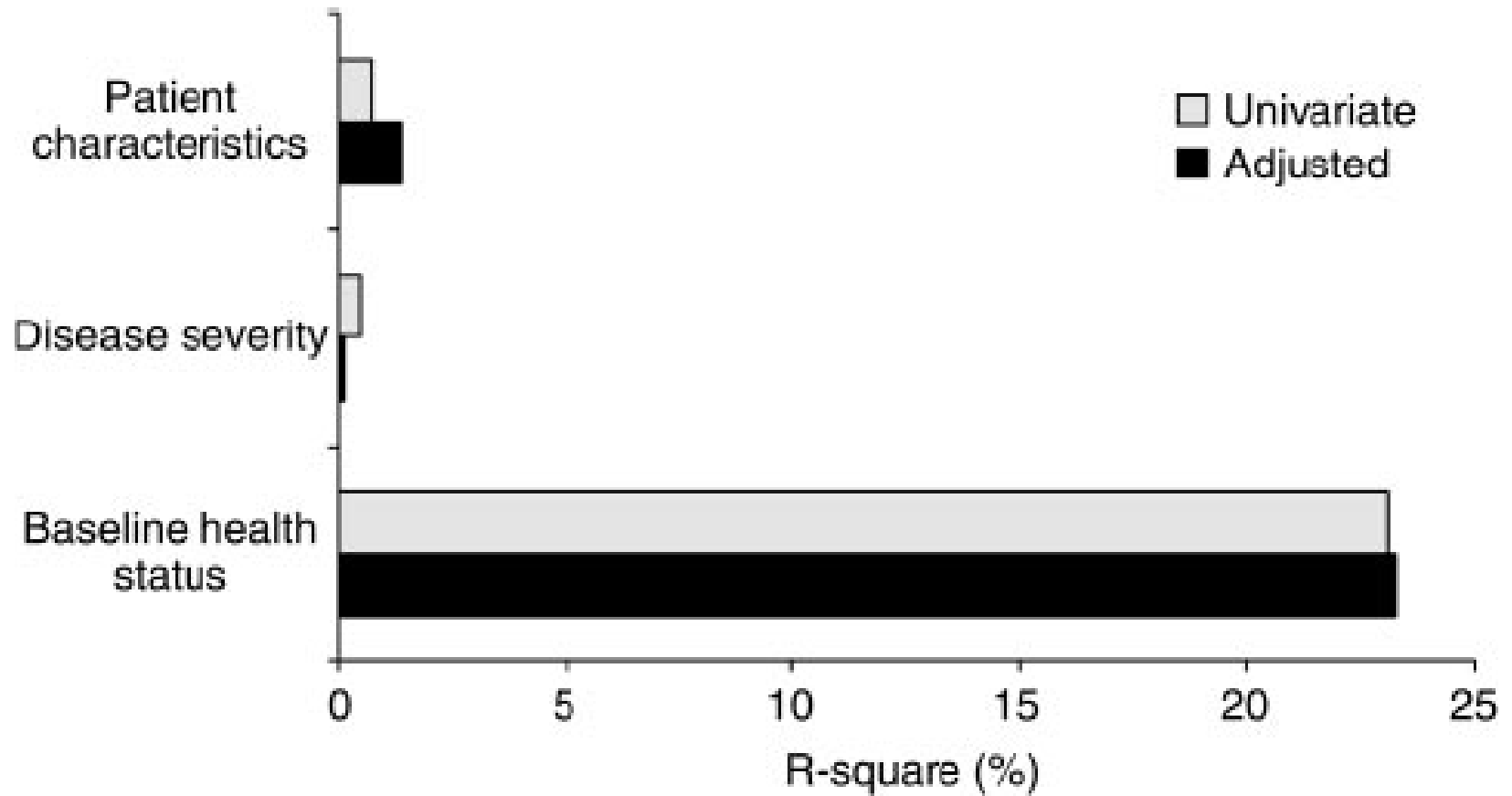
PCI를 받은 ACS에서 Quality of Life 변화 관찰

- Changes in QoL following PCI in ACS
: UA/NSTEMI vs STEMI
- Sex discrepancies in QoL outcomes among ACS undergoing PCI
: Female vs Male

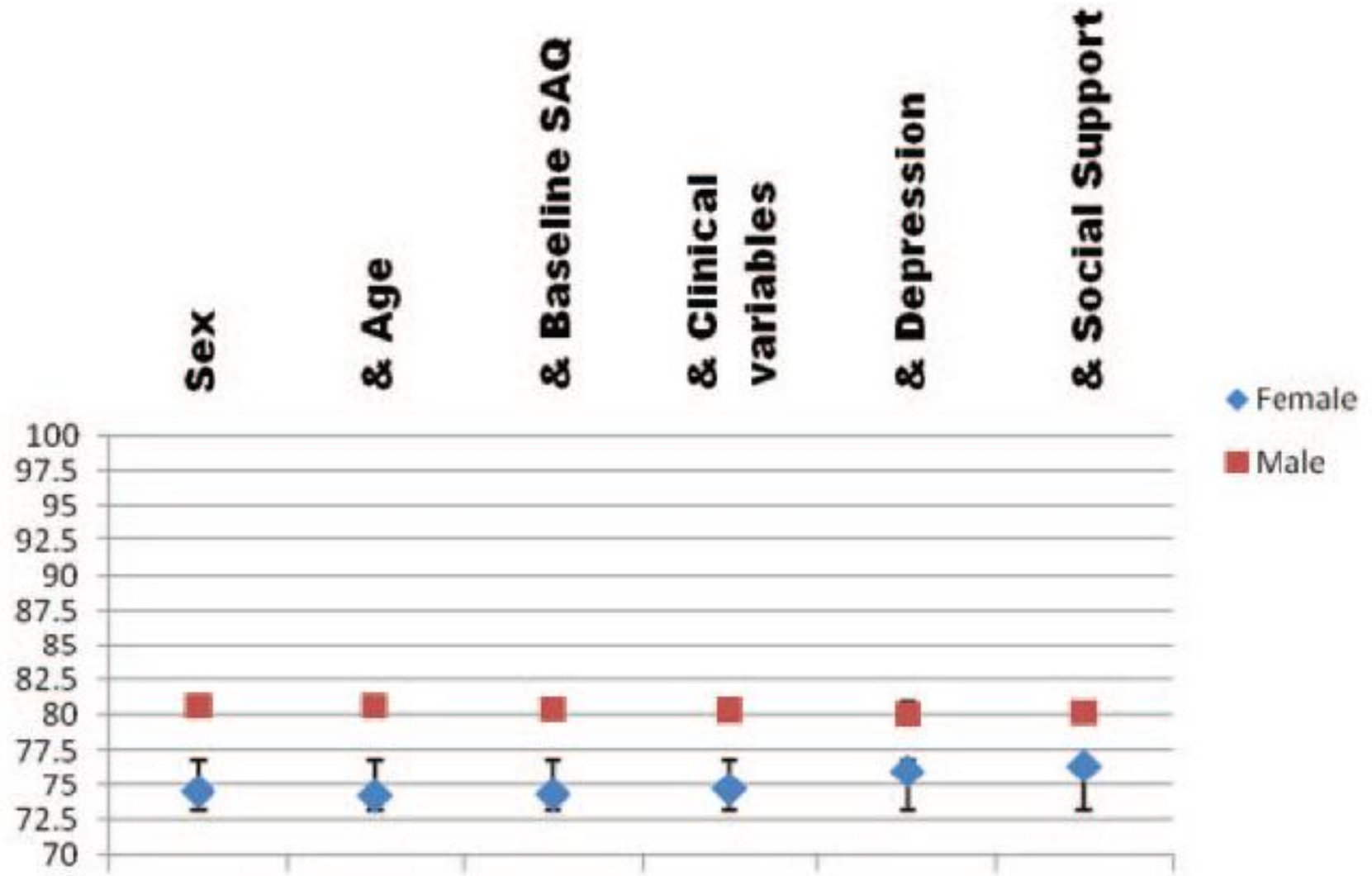


CAD에서 치료 전후 QoL 변화의 분석

Predictors of QoL Benefit after PCI in Non-ACS



Sex -Associated Discrepancies in QoL Response In CAD



Baseline characteristics

	Overall (n=3,362)	UA/NSTEMI (n=2,516)	STEMI (n=846)	P value
Age, years	63.7 ± 11.1	64.5 ± 10.5	61.3 ± 12.3	<0.001
Male, n (%)	2,312 (68.8%)	1,655 (65.8%)	657 (77.7%)	<0.001
Diabetes, n (%)	1,089 (32.4%)	874 (34.7%)	215 (25.4%)	<0.001
Hypertension, n (%)	1,931 (57.4%)	1,561 (62.0%)	370 (43.7%)	<0.001
Current smoking, n (%)	992 (29.5%)	610 (24.2%)	382 (45.2%)	<0.001
Hypercholesterolemia	824 (24.5%)	612 (24.3%)	212 (25.1%)	0.634
Previous MI, n (%)	206 (6.1%)	168 (6.7%)	38 (4.5%)	0.024
Previous PCI, n (%)	511 (15.2%)	446 (17.7%)	65 (7.7%)	0.092
Previous CABG, n (%)	43 (1.3%)	37 (1.5%)	6 (0.7%)	0.092
Previous stroke, n (%)	190 (5.6%)	143 (5.7%)	47 (5.6%)	0.927
Hospital stay, days	6.1 ± 4.9	5.7 ± 0.5	7.3 ± 4.5	<0.001

Angina-specific HRQOL (Baseline)

	UA/NSTEMI (n=2,516)	STEMI (n=846)	P value
Physical limitation	67.4 ± 26.2	81.0 ± 22.1	<0.001
Angina frequency	52.4 ± 33.4	56.0 ± 28.7	0.005
Angina stability	75.1 ± 15.7	77.6 ± 15.2	<0.001
Treatment satisfaction	45.0 ± 19.0	50.1 ± 20.5	<0.001
Quality of life	75.2 ± 22.8	83.1 ± 22.4	<0.001

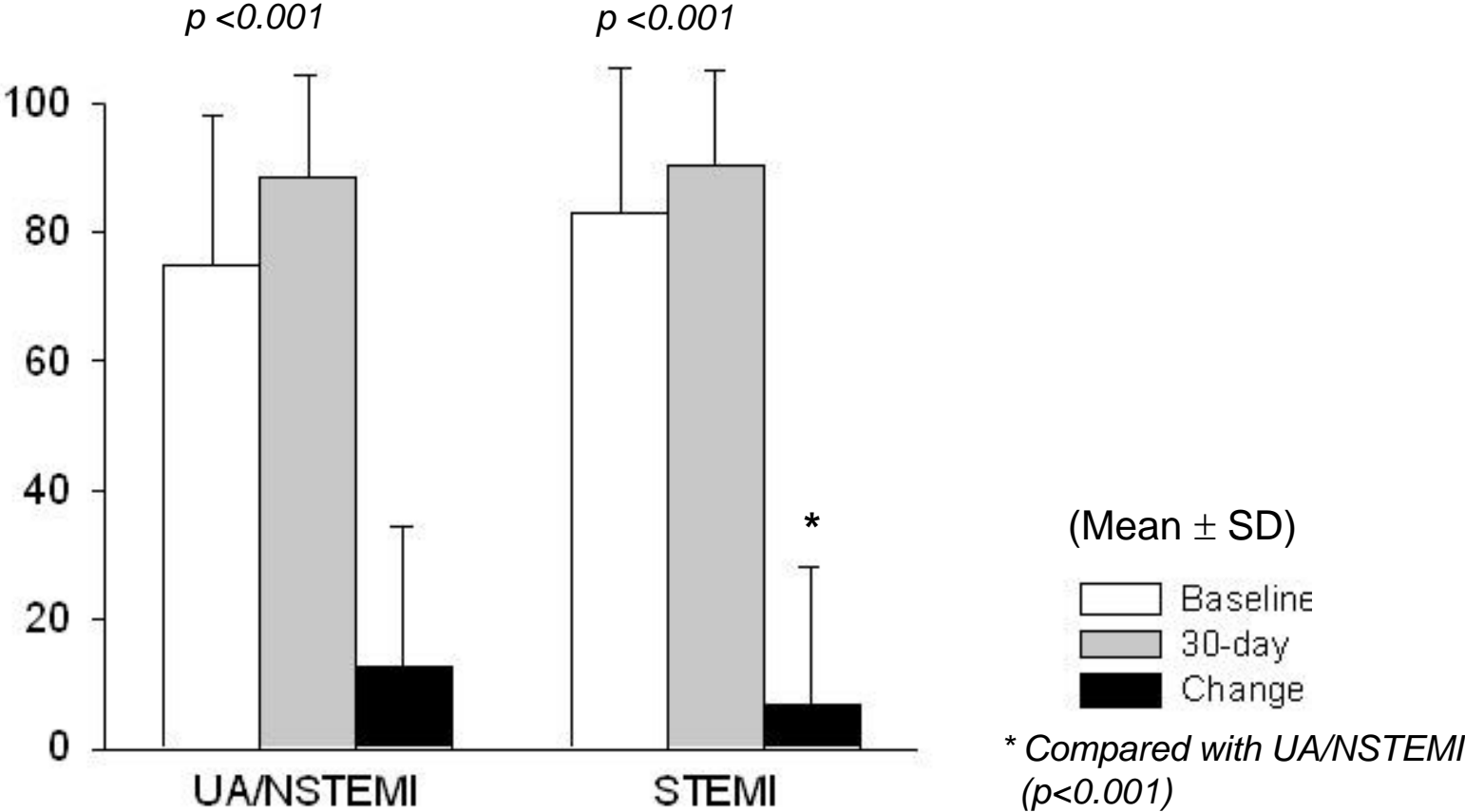
Angina-specific HRQOL (30-day)

	UA/NSTEMI (n=2,516)	STEMI (n=846)	P value
Physical limitation	88.5 ± 15.9	90.4 ± 14.5	<i>0.005</i>
Angina frequency	90.4 ± 16.7	92.7 ± 14.1	<i>0.001</i>
Angina stability	65.5 ± 23.4	62.5 ± 22.4	<i>0.001</i>
Treatment satisfaction	77.1 ± 15.3	77.7 ± 15.0	0.270
Quality of life	56.1 ± 18.6	56.6 ± 18.7	0.521

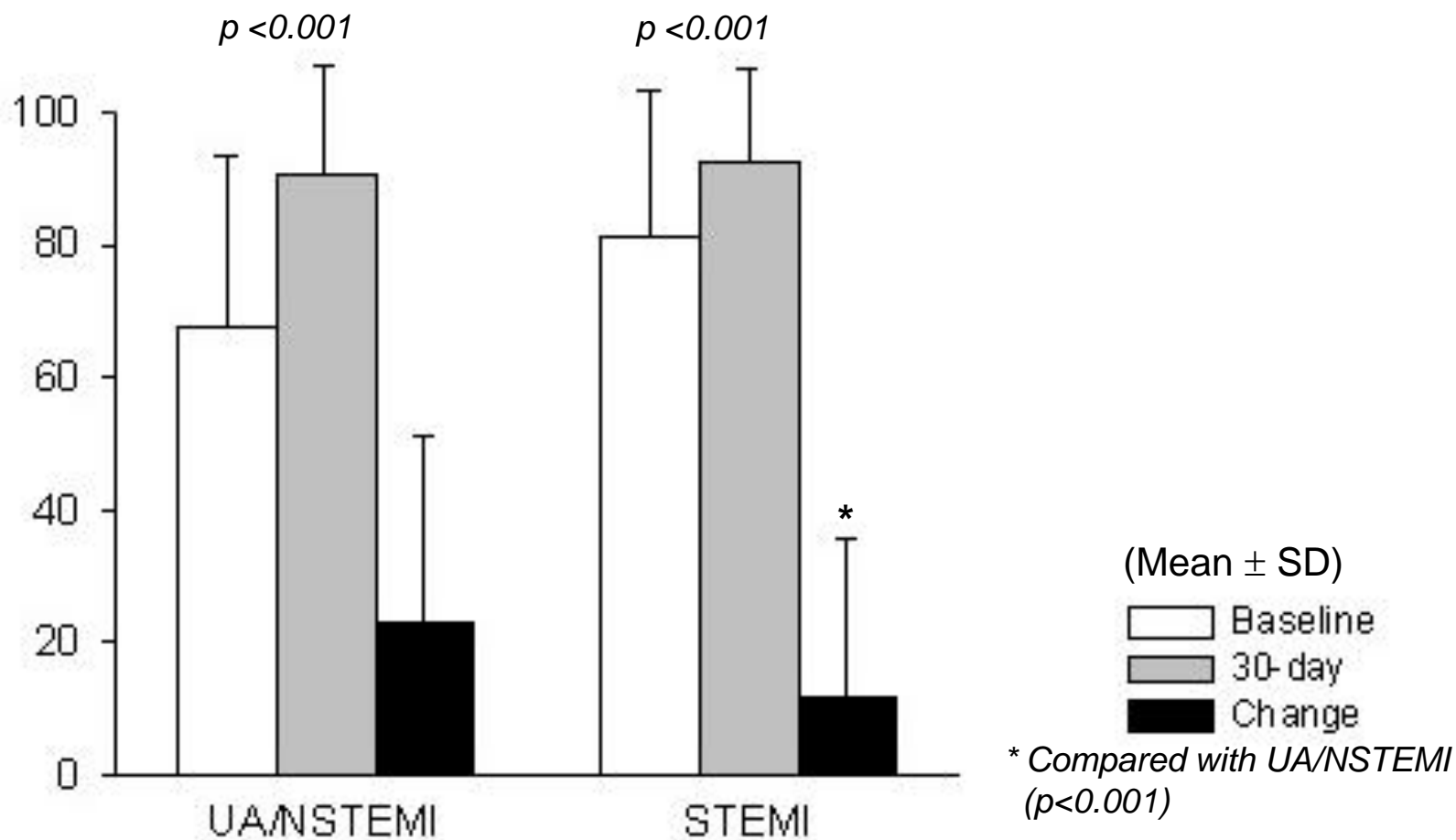
HRQOL for General Health Status

	UA/NSTEMI (n=2,516)	STEMI (n=846)	P value
Baseline			
EQ-5D	0.77 ± 0.27	0.78 ± 0.29	0.207
EQ-VAS	67.7 ± 21.4	68.8 ± 19.3	0.178
30-day			
EQ-5D	0.86 ± 0.21	0.89 ± 0.17	<i>0.001</i>
EQ-VAS	70.9 ± 23.8	74.7 ± 18.9	<i><0.001</i>

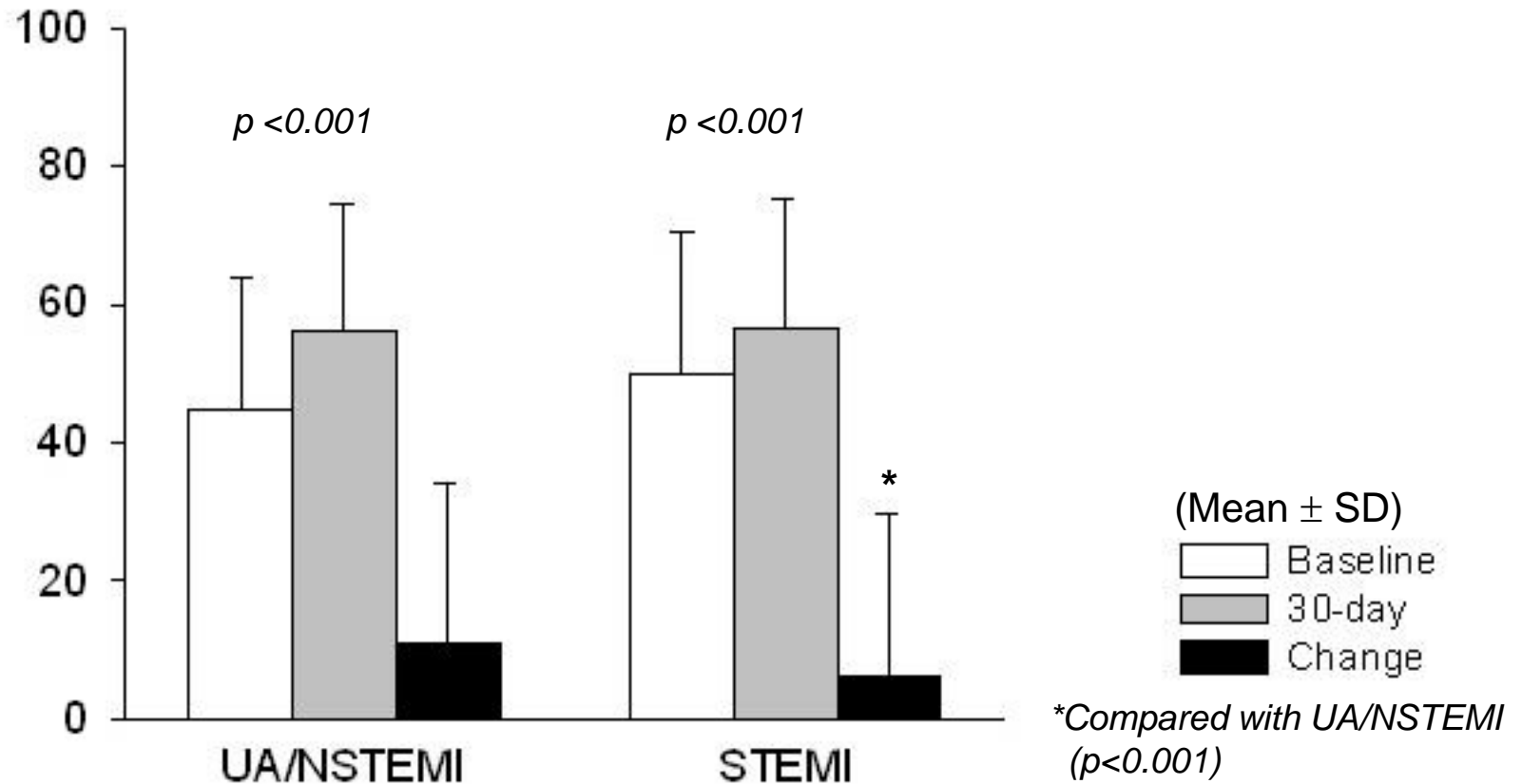
SAQ subscale – Physical limitation



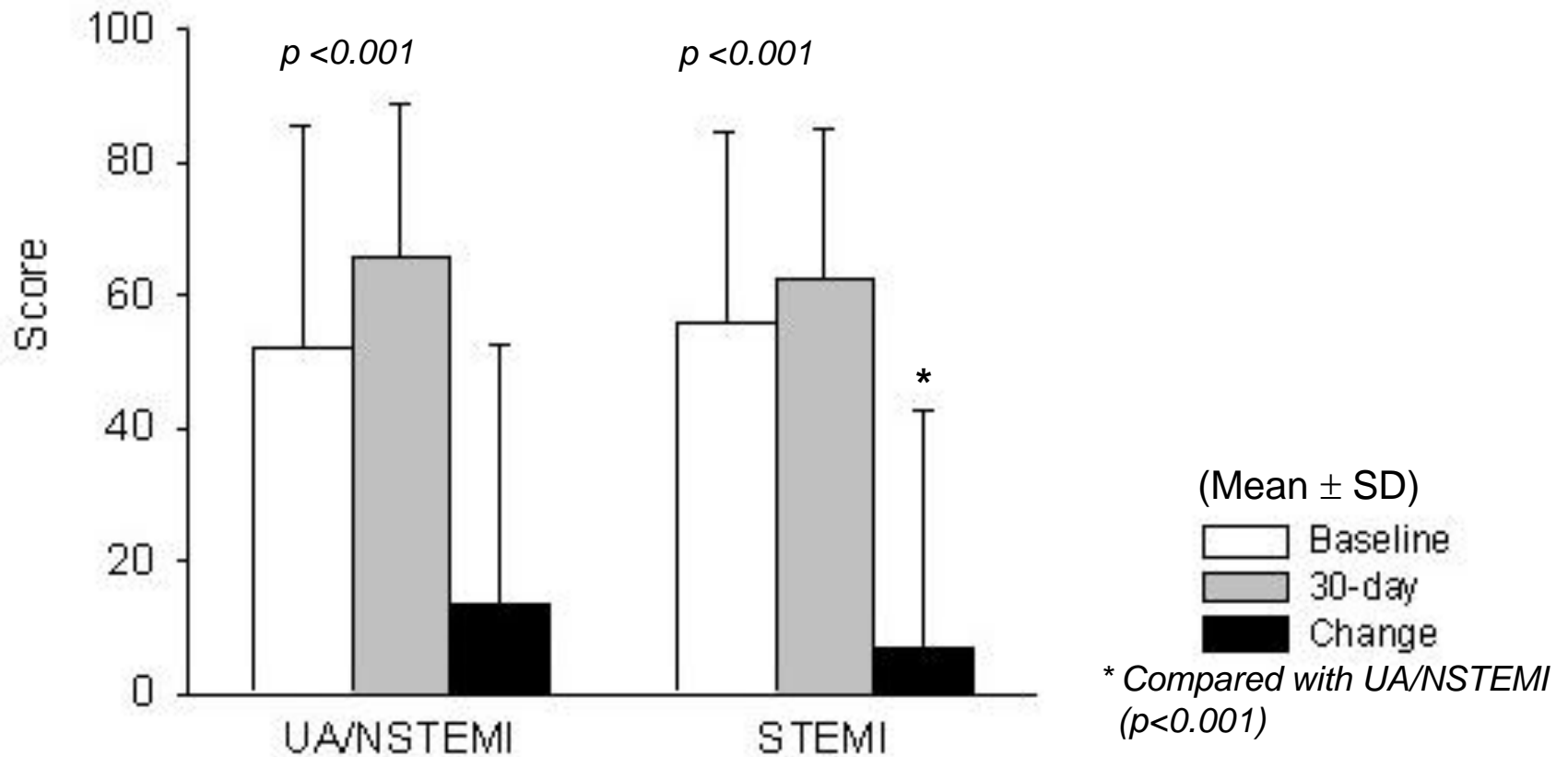
SAQ stability – Angina frequency



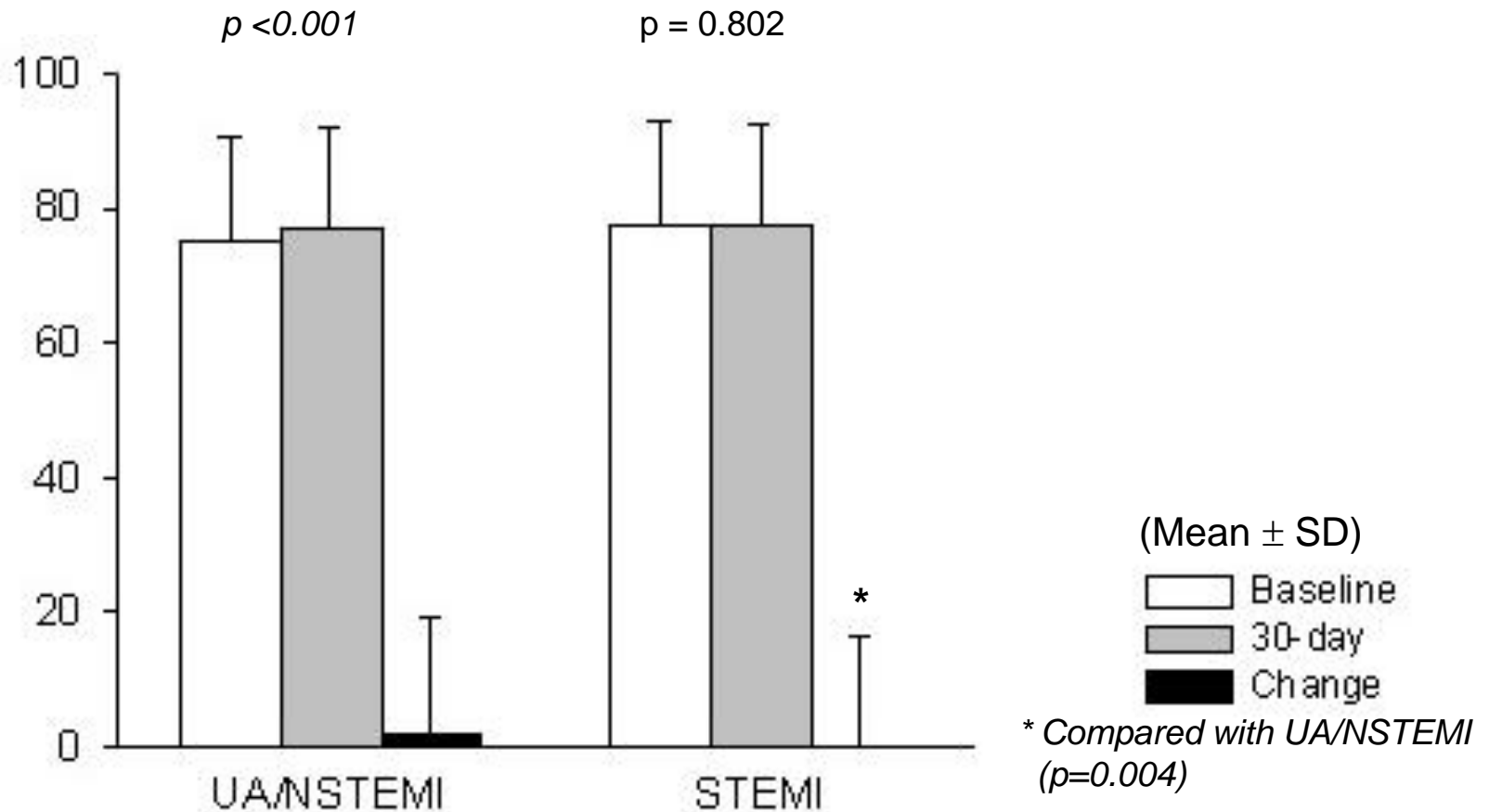
SAQ subscale – Quality of Life



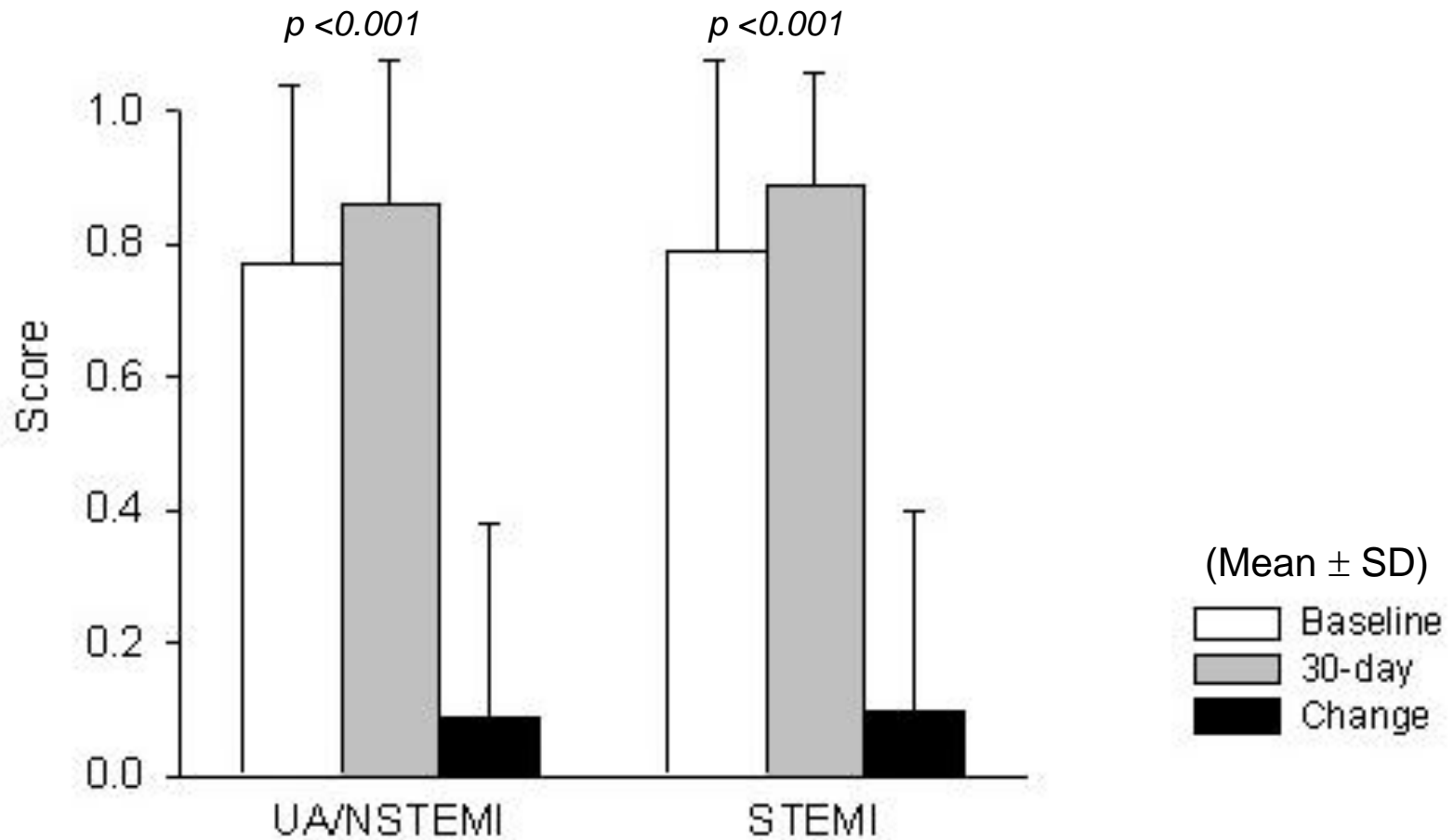
SAQ subscale - Angina stability



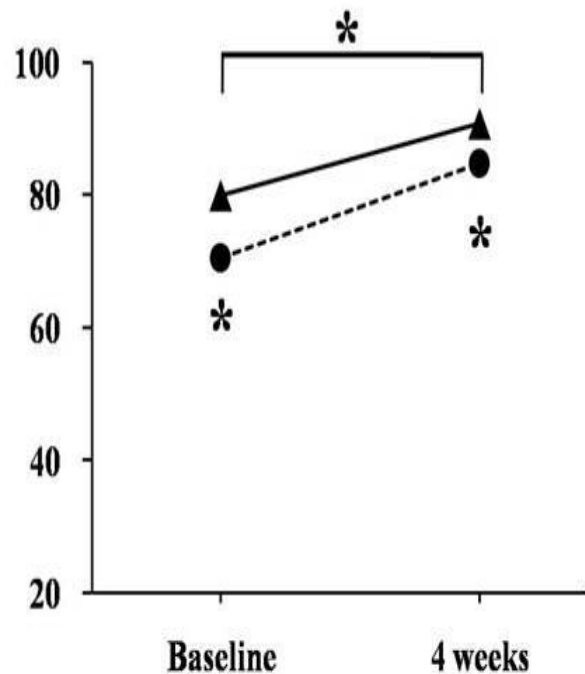
SAQ subscale – Treatment satisfaction



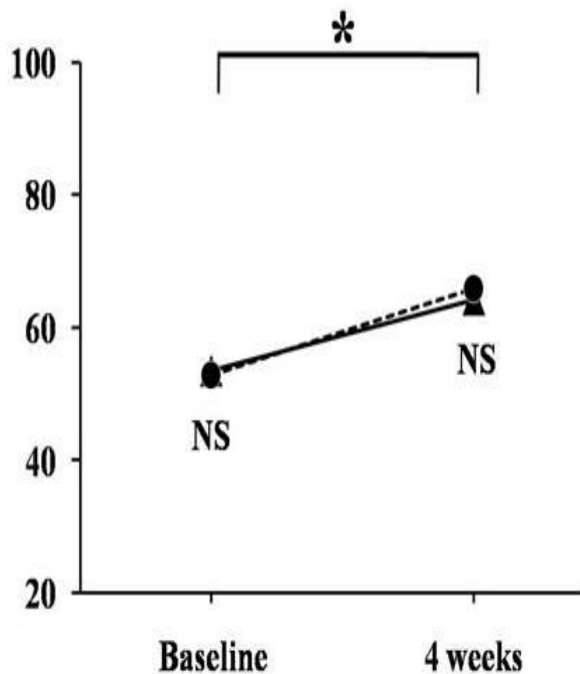
EQ-5D index



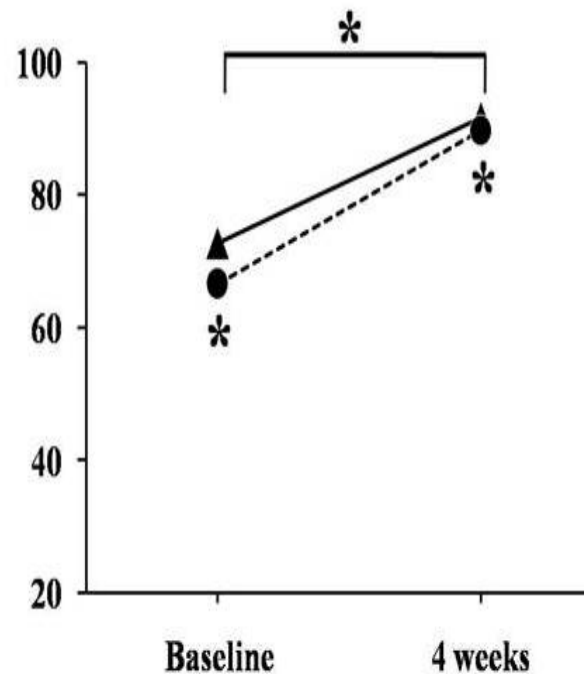
Physical limitation



Angina stability

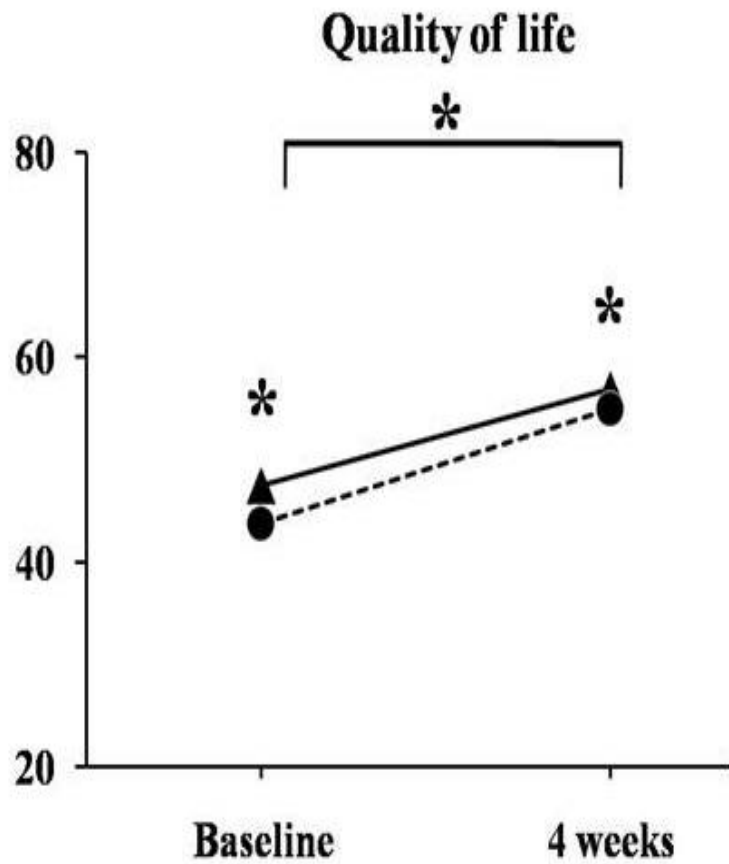


Angina frequency

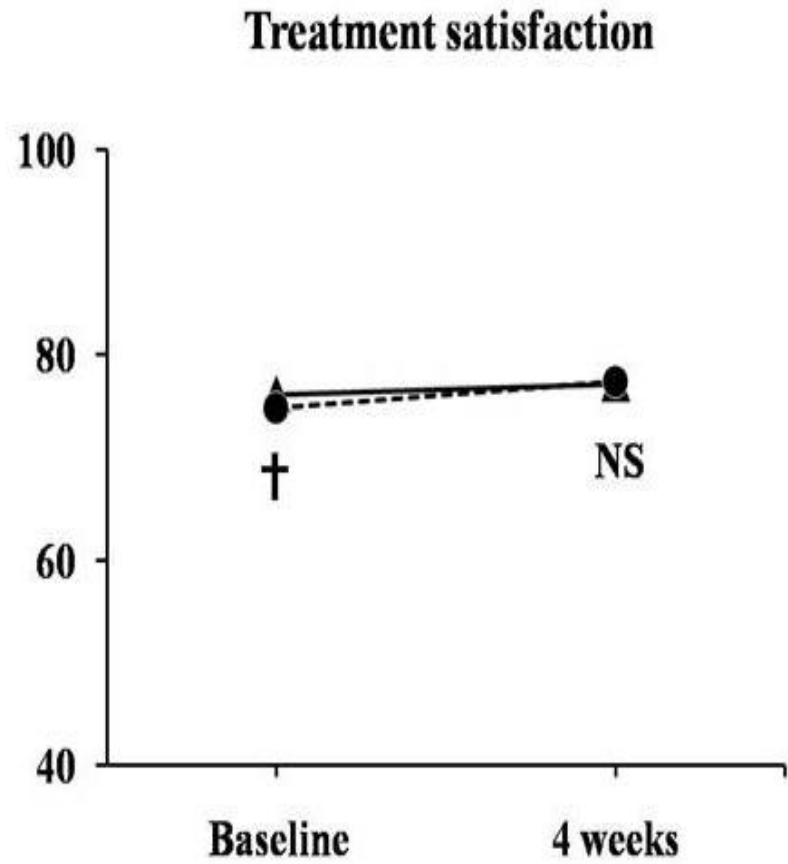


▲ Men ● Women

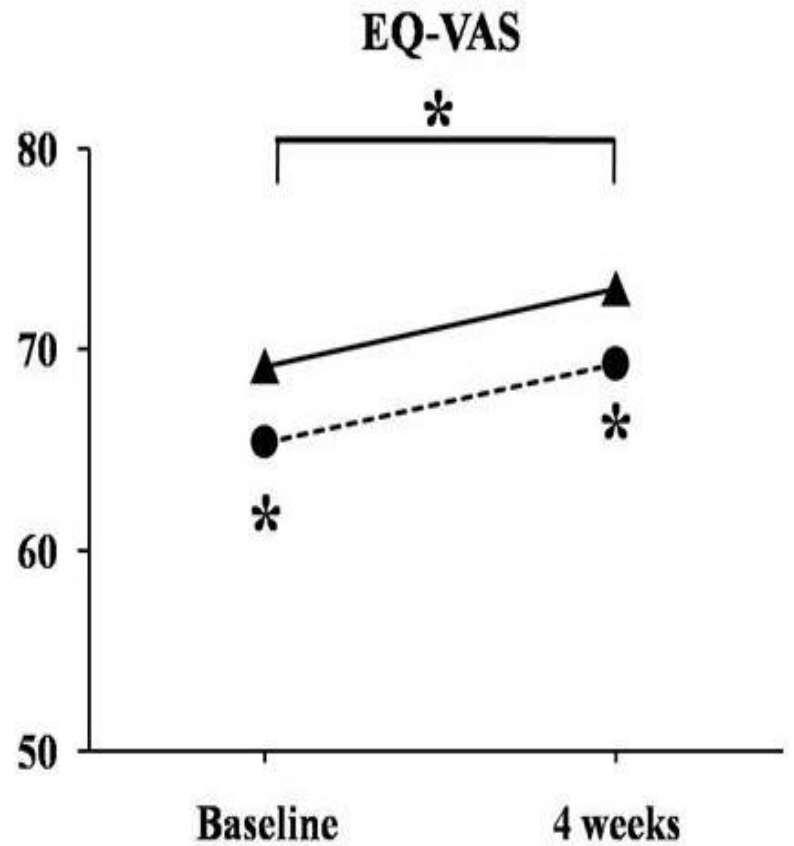
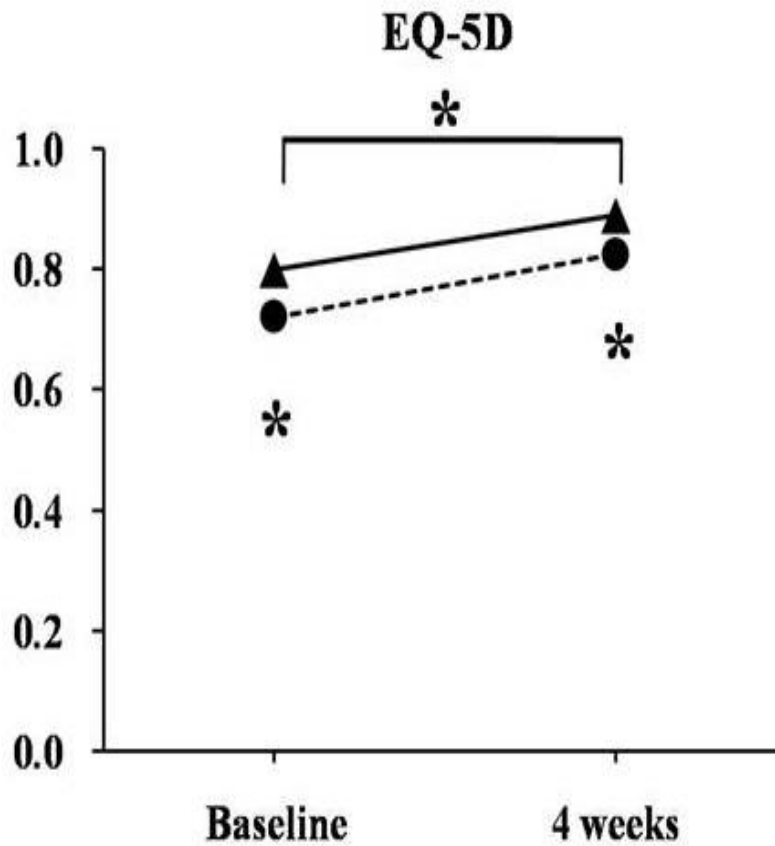
† $p < 0.05$; * $p < 0.01$; NS > 0.05



▲ Men ● Women



† $p < 0.05$; * $p < 0.01$; NS > 0.05



▲ Men ● Women

† $p < 0.05$; * $p < 0.01$; NS > 0.05