

2011-12-03 추계심장학회 산학학술세션

# **KOR**ean **A**trial **F**ibrillation Study

## **- KORAF**

Nationwide Prospective AF Registration Study

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**Korean Society of Circulation (KORAF Investigators)**

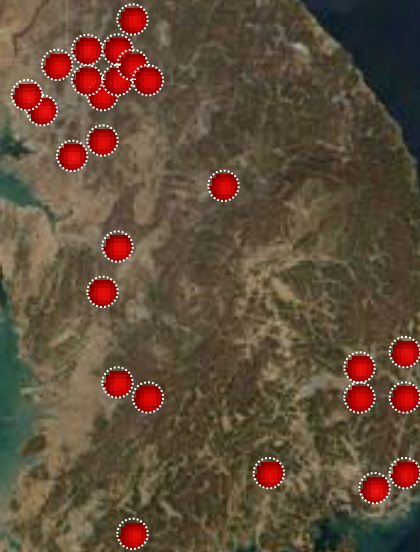
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**Asan Medical Center, Seoul, KOREA**

# **KOR**ean **A**trial **F**ibrillation Study **- KORAF study -**

- In 24 tertiary or referral hospitals
- Documented AF ECG
- Firstly diagnosed
- Exclusions :
  - Association with acute MI, hyperthyroidism, acute lung disease/myocarditis/pericarditis
  - Participation in trials with investigational drugs

# KOrean Atrial Fibrillation Study

## KORAF



27→24 tertiary care hospital

- Catholic University (1,2,3)
- Kyungbuk National University
- Keimyong University
- Korea University
- Kosin University
- Kyunghee University
- Kyungsang University
- Hanllym University
- Gil Hospital
- Dankook University
- Sejong Heart Center
- Seoul National University
- Samsung Medical Center
- Yeongnam University
- Yonsei University
- Asan Medical Center
- Wongwang University
- Inje University (1,2)
- Inha University
- Chunnam National University
- Chunbuk National University
- Chungnam National University
- Chungbuk National University

# Record AF

(REgistry on Cardiac Rhythm  
DisORDers) :

An International, Observational,  
Prospective Survey Assessing the  
Control of Atrial Fibrillation

- In 21 countries
- History of AF < 1y, treated or not
- Newly diagnosed AF

Am J Cardiol 2010;105:687– 693  
J Am Coll Cardiol 2011;58:493–501

**BASELINE**

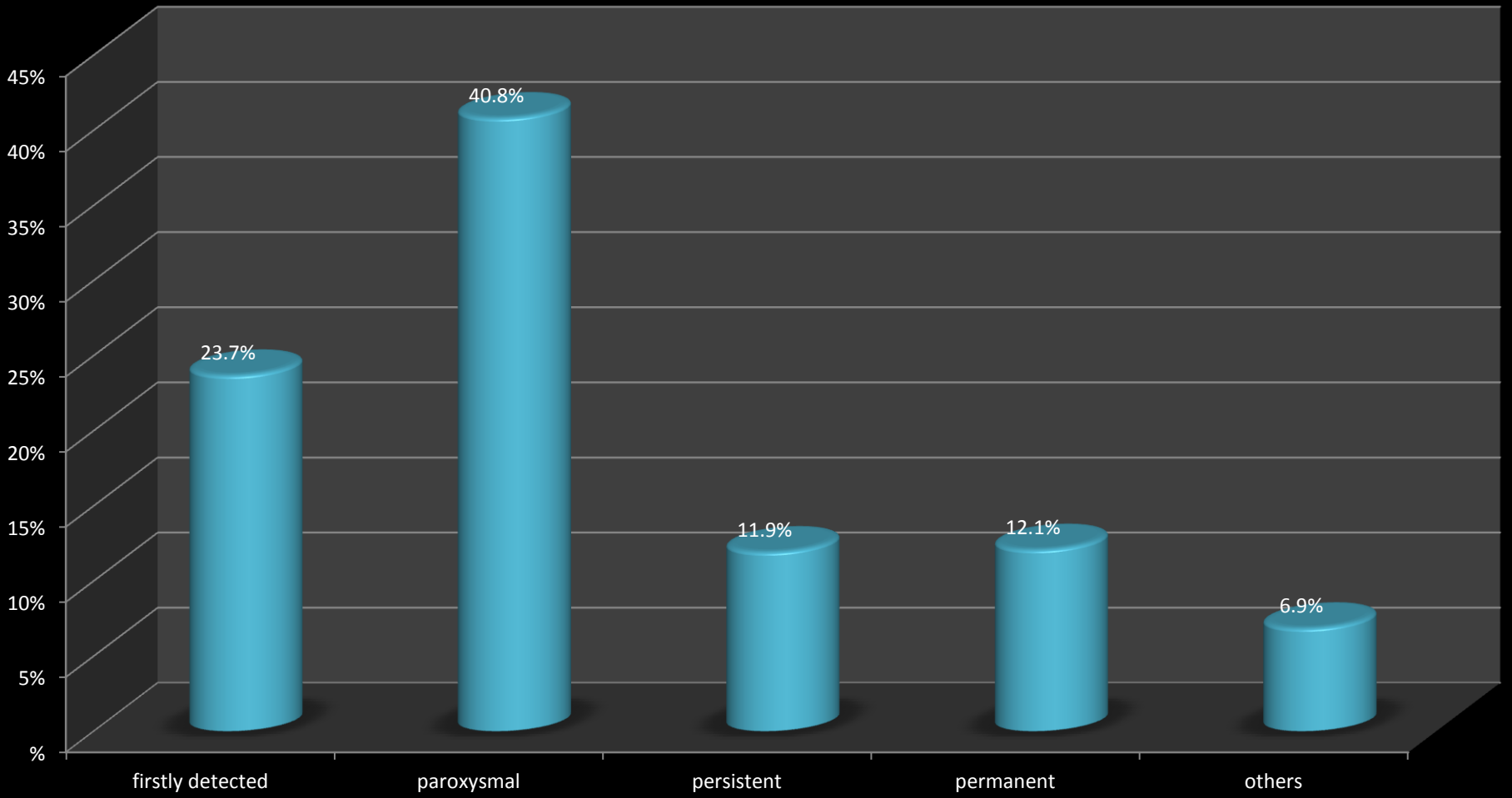
# KORAF

- $N = 3,570$
- Mean age :  $63 \pm 13$  years
- M:F = 63:37

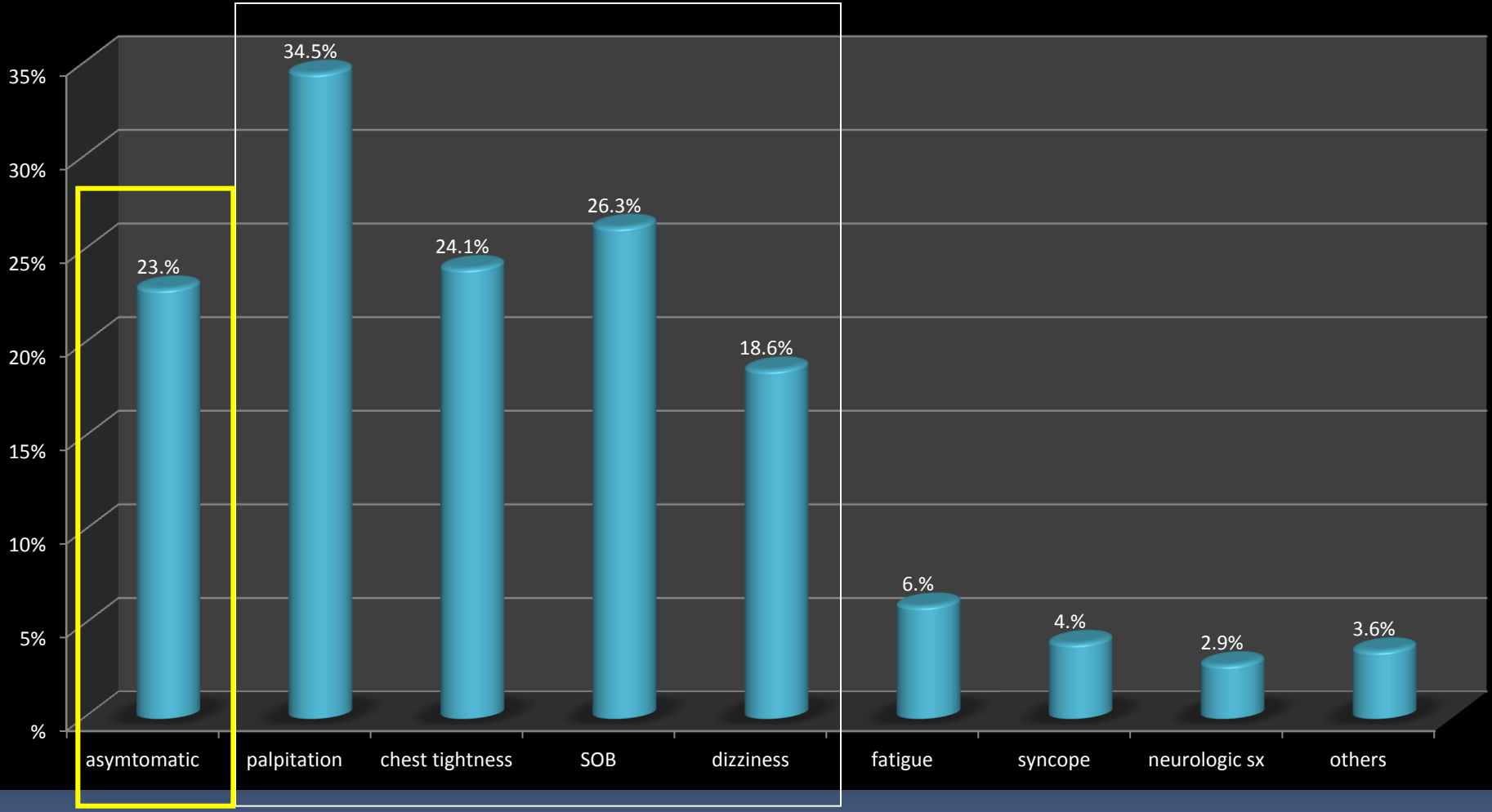
## Record AF

- $N = 5,895$
- Mean age : 65.6 years
- M:F = 57:43

# Classification of AF



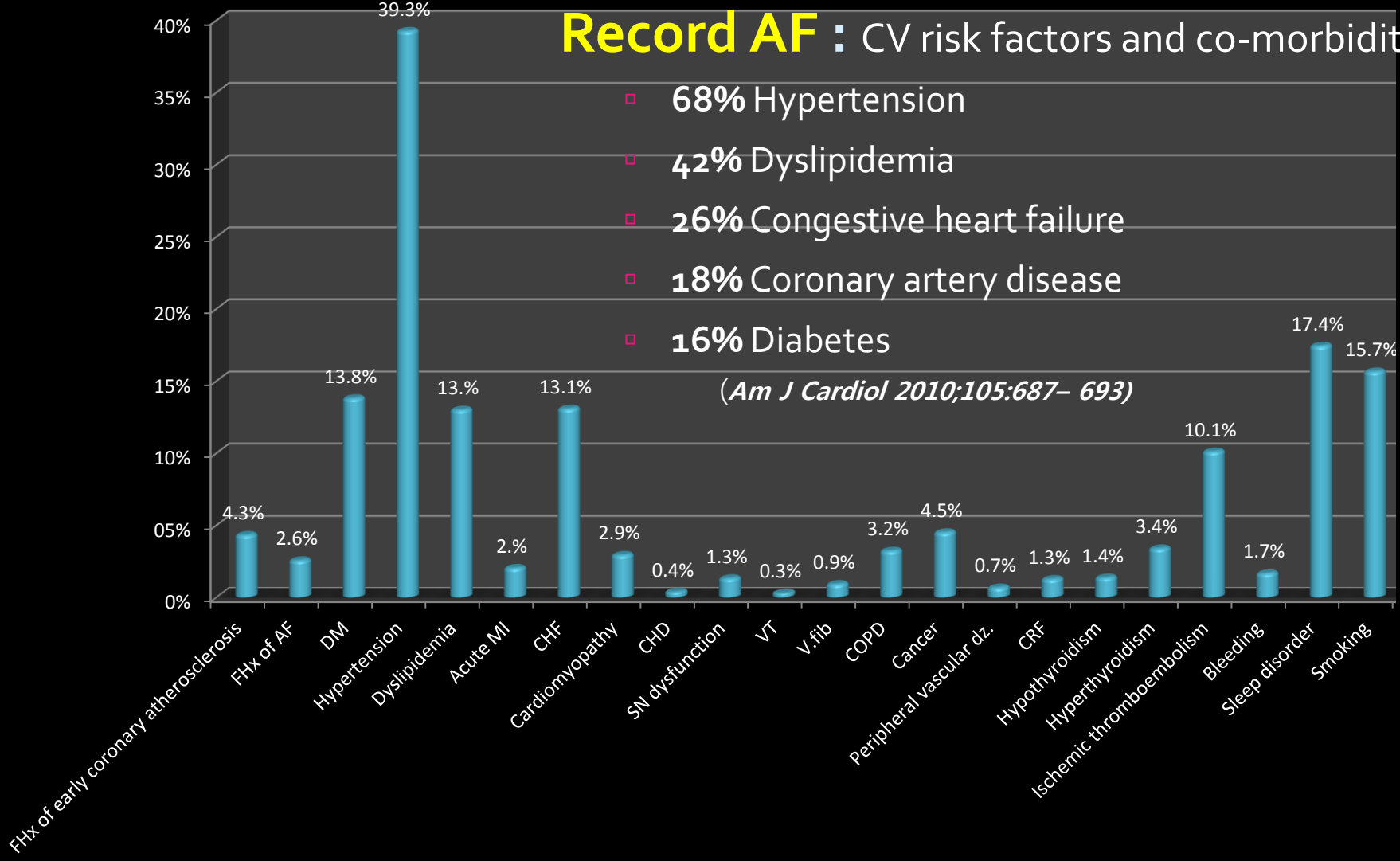
# Subjective symptoms



Unpublished data



# Risk factor & Associated diseases



# Provocating conditions/Factors

- Unknown : 71.7%
- **3 major factors : mental stress, alcohol, sleep apnea**
- Heavy meal : 1.5%  
Caffeine : 0.6%
- Valvular HD : 9.2% (MR > MS > AR > AS)
- WPW : 0.6%

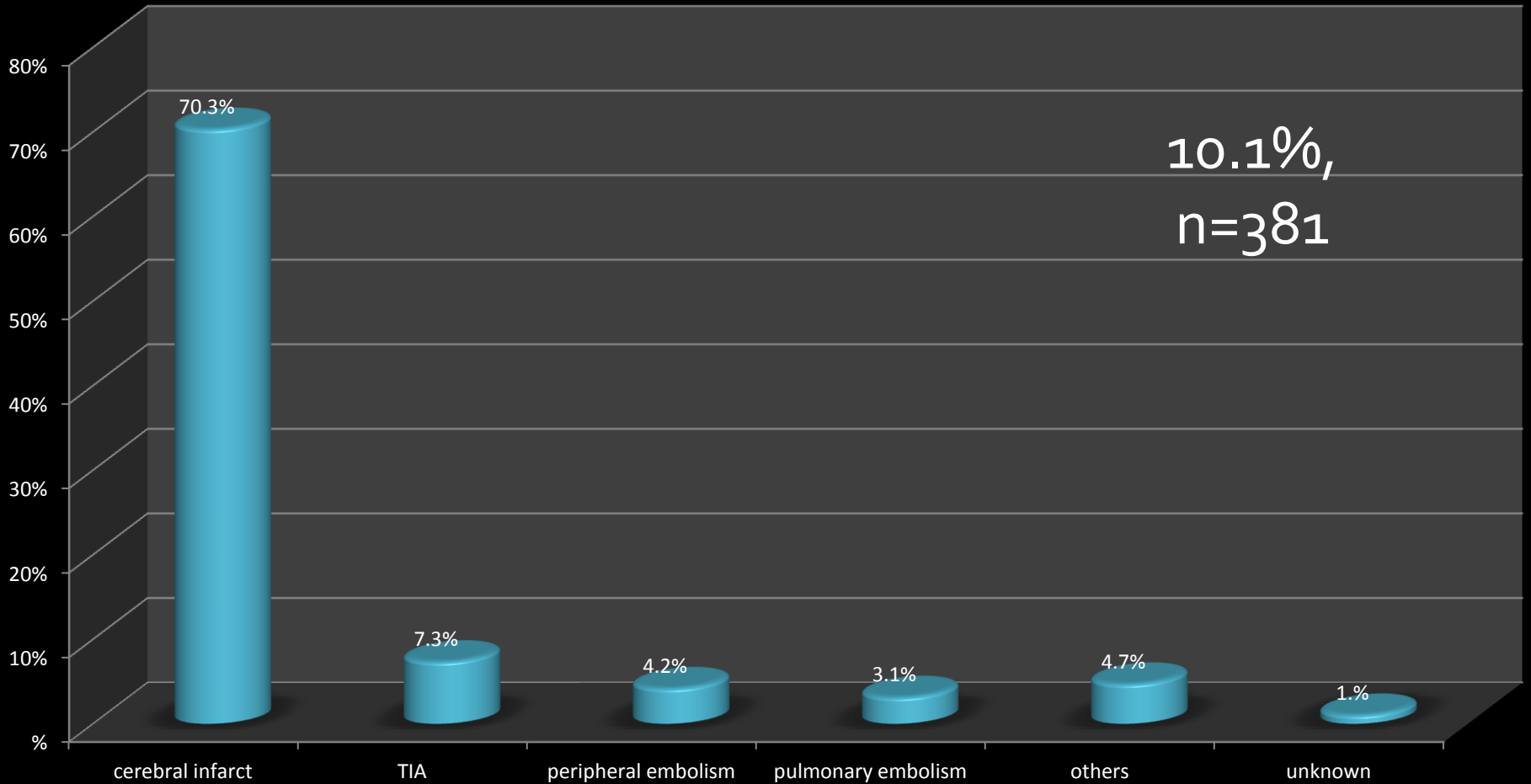
# Alcohol in AF

- Incidence of alcoholic drinking : 28.4%
- Alcoholic drinking : significant association with new onset AF in <50 years

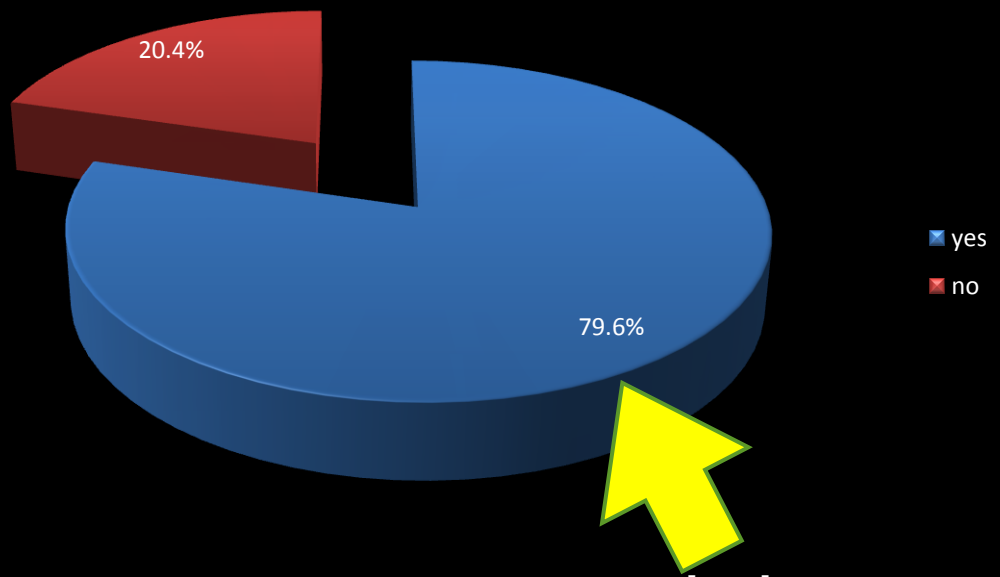
# CHADS<sub>2</sub> score

- CHADS<sub>2</sub> score 0 : 38%
  - CHADS<sub>2</sub> score 1 : 34%
  - CHADS<sub>2</sub> score 2 : 17%
  - CHADS<sub>2</sub> score  $\geq 3$  : 11%
- 72%**

# Thromboembolic Complications

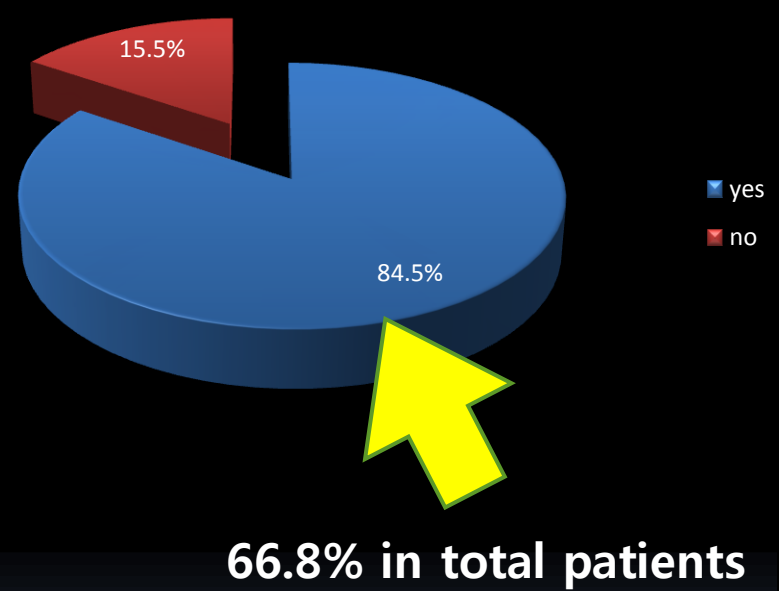


# Ongoing drug therapy



For rate or rhythm control or  
For TE prevention

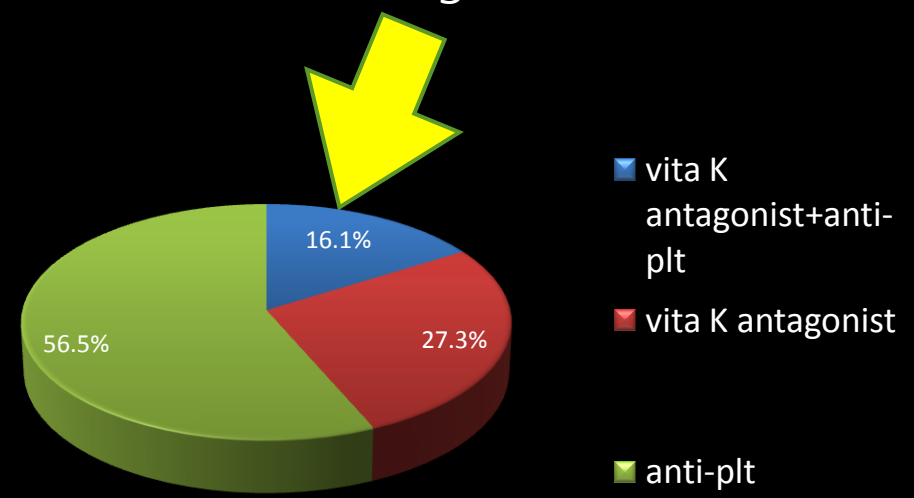
# Anti-thromboembolism therapy



66.8% in total patients

(29.8% in total patients)

Vit K antagonist : 43%



Warfarin use : 26% in CHADS<sub>2</sub> score 1  
26% in score 2,  
38% in score ≥3

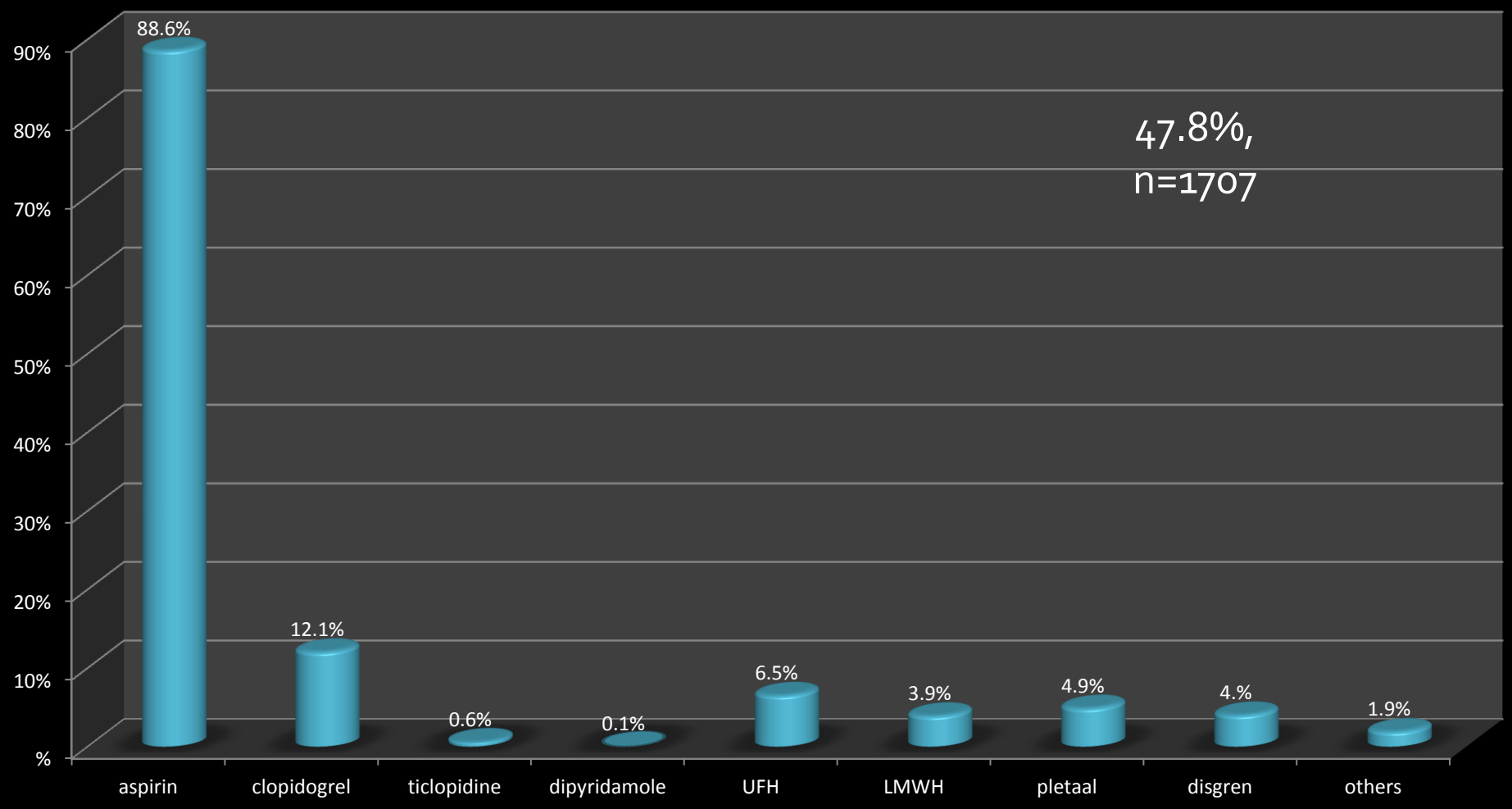
**In Record AF, VitK antago.: 51.9%**

# Among warfarin-taking patients,

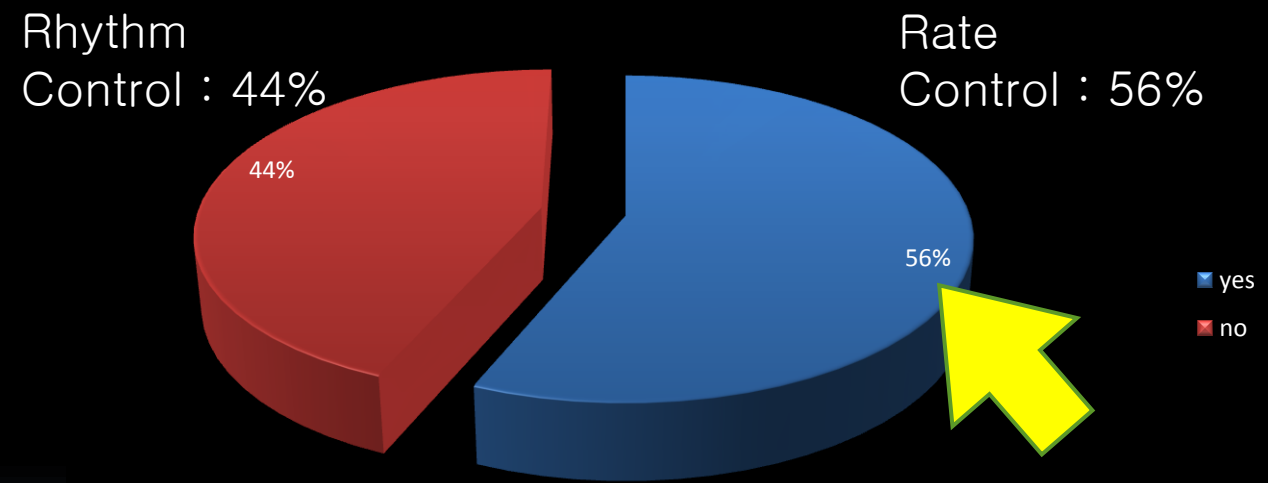
- INR in therapeutic range (2-3) :  
27.9%
- Mean INR : 1.84
- Mean dose of warf : 3.7mg



# Anti-platelet agents

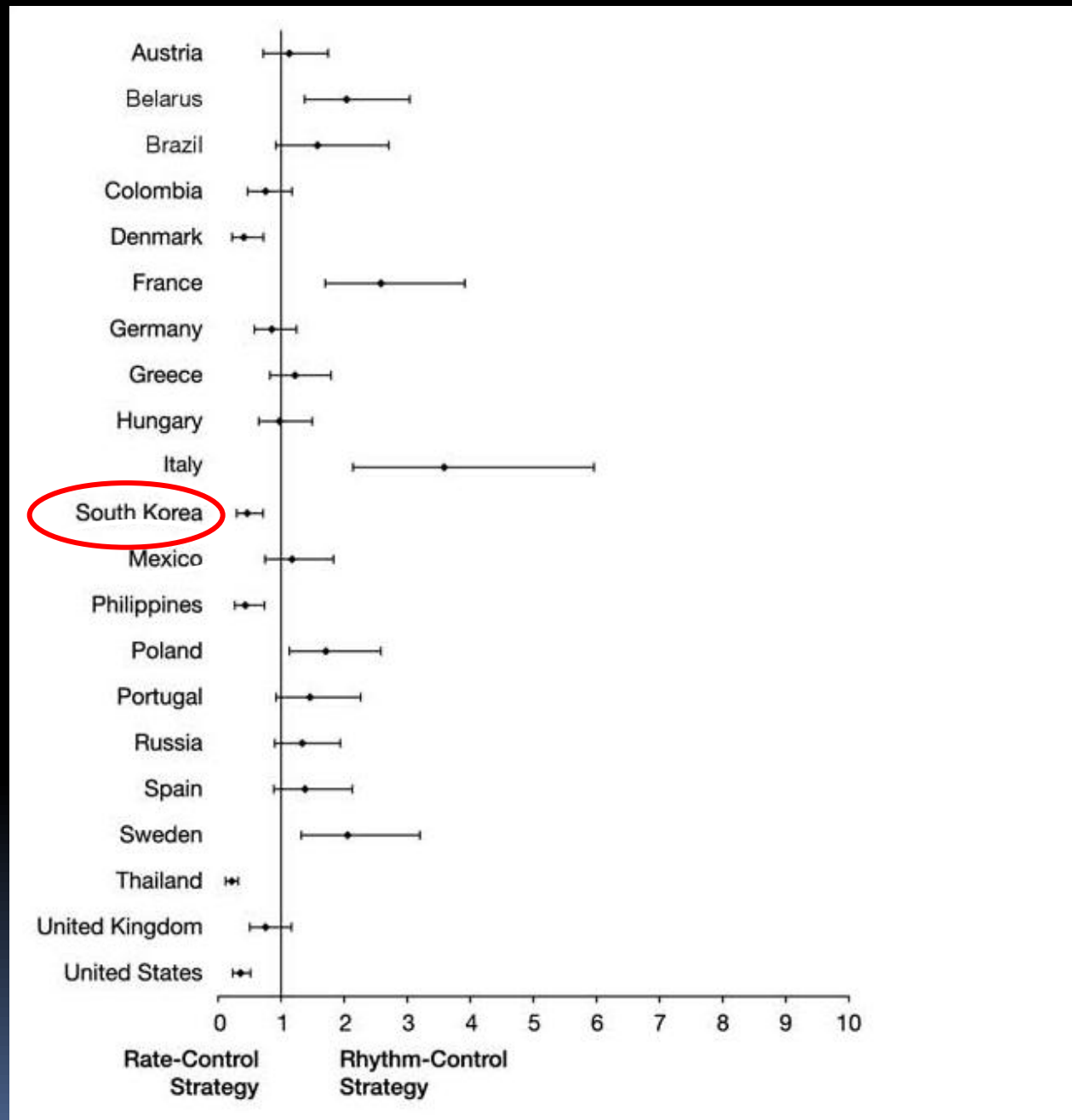


# Rhythm & Rate control (1)

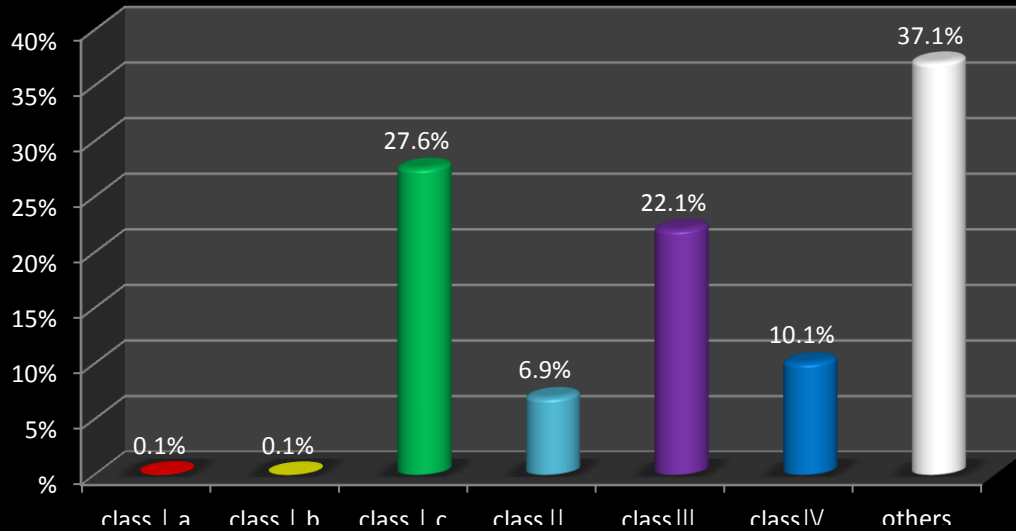


**In Record AF, Rhythm control : 55%**

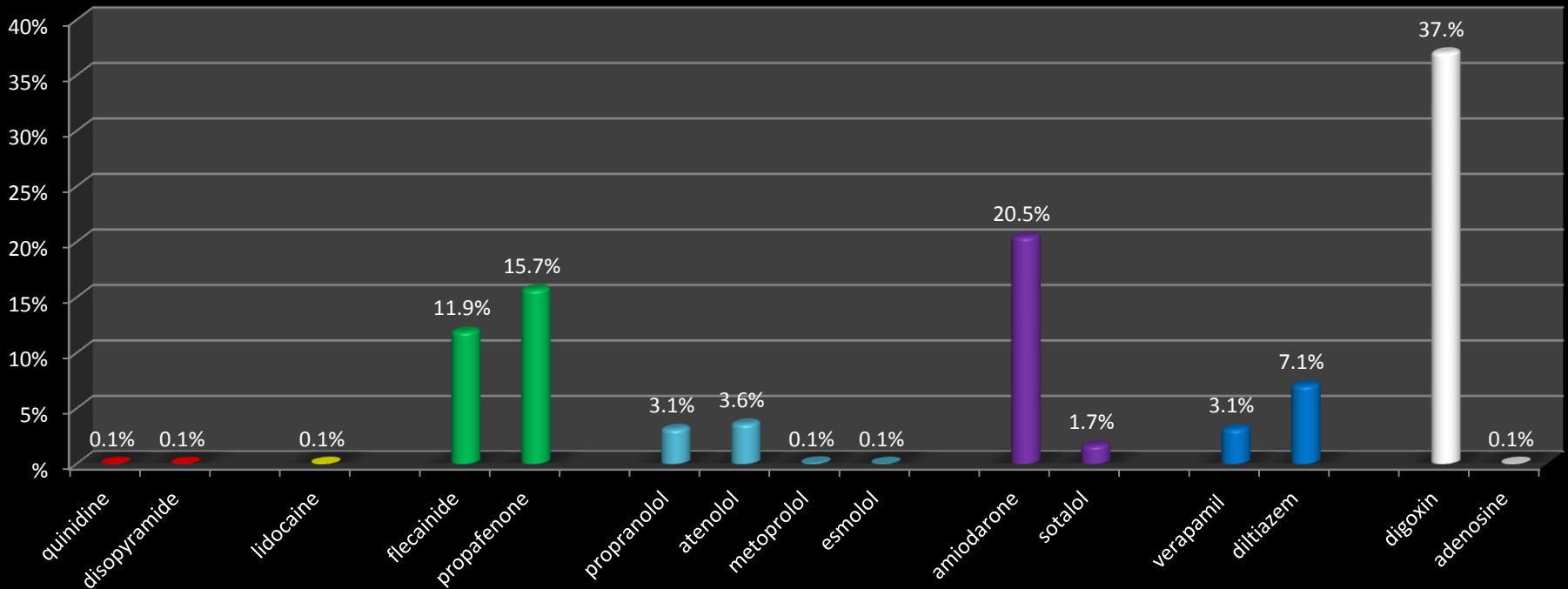
# Rhythm vs rate control in *Record AF*



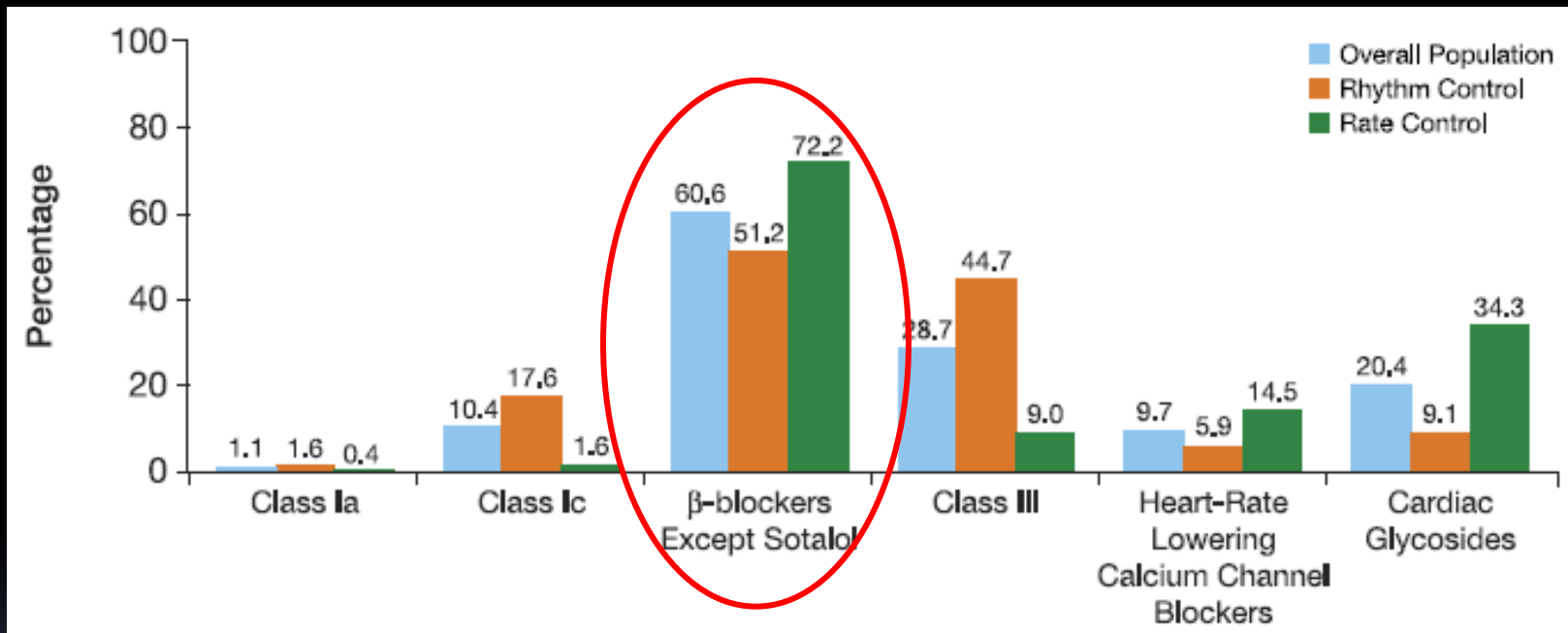
# Rhythm & Rate control (2)



In **RecordAF**, most common drugs  
 - class III in rhythm control  
 (sotalol in 20%)  
 - betablocker in rate control



# Drugs in Record AF study



**1 year follow-up**

**Completed in 80.1%**

# 1차 추적 조사 질문 사항

**1. 환자 상황**

추적 조사 일자 : \_\_\_\_\_년 \_\_\_\_\_월 \_\_\_\_\_일

환자 상태       생존                       사망                       추가 조사 실패

사망 일자 (년/월/일)      ( \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ )

사망 원인       심혈관계                       기타 원인                       불명

만약 심혈관계 원인이려면,

갑작스러움       갑작스럽지 않음       감지되지 않음       불명

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**2. 심방 세동 정보 (등록 일 이후 12개월에서 심방 세동 상태)**

심방 세동의 양상

처음 발견 되었고, 그 이후 재발은 없었음       발작성 (초기와 동일)       지속성

영구성       심방 세동이 치료된 것으로 여겨짐       양상 불명

심방 세동이 현재 증상을 일으켰는가?       아니오       예

최종 추가 조사에서의 리듬

동 리듬       심방 세동       심방 조동       심방성 부정맥

심실성 부정맥       심박동기 리듬       기타       불명

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**3. 현재 약물 치료**

현재 환자가 비타민 K 길항제를 복용하고 있습니까?

아니오       예, 다음과 동일한 약제       예, 새로운 약제를 시작함       불명

만약 "아니오" 라면, 비타민 K 길항제를 중단하거나 시작하지 않은 이유

적응이 안됨       복약 불이행       나이가 너무 많아서

환자의 불편       출혈 반응       치매

환자는 지속할 의지가 없음 / 환자의 선택       출혈의 고위험성

환자의 general condition이 좋아서       조절되지 않는 고혈압

이유 불명       기타 이유

만약 새로운 치료를 시작했다면, 처방 받은 약물은?

LMWH       비문해성 헤파린       아스피린       클로피도그렐

디피리다몰       티클로피딘       풀레달       디스그렌

기타 ( \_\_\_\_\_ )

바타민 K 길항제 투여를 계속하고 있는 이유

환자의 선택

심방 세동(AF)의 합병증 예방

환자의 상태가 지속적이거나 영구적인 심방 세동으로 진행됨

전기적 심장 운동 전환

환자 상태가 색전증의 고위험 요인으로 진행됨

이유 불명

기타 이유 ( \_\_\_\_\_ )

항-부정맥 / 박동 조절 치료가 있었는가?       아니오       예

"예" 인 경우      특정 약물      ( \_\_\_\_\_ )

전기적 운동전환      ( \_\_\_\_\_ )

전극도자절제술      ( \_\_\_\_\_ )

심박동 조절기 이식      ( \_\_\_\_\_ )

수술적 AF 치료      ( \_\_\_\_\_ )

기타      ( \_\_\_\_\_ )

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**4. 주요 합병증 / 이상 반응**

이상 반응 발생 일자 (년/월/일)      ( \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ )

심근 경색       불안정 협심증       허혈 발작       일과성 허혈 발작(TIA)

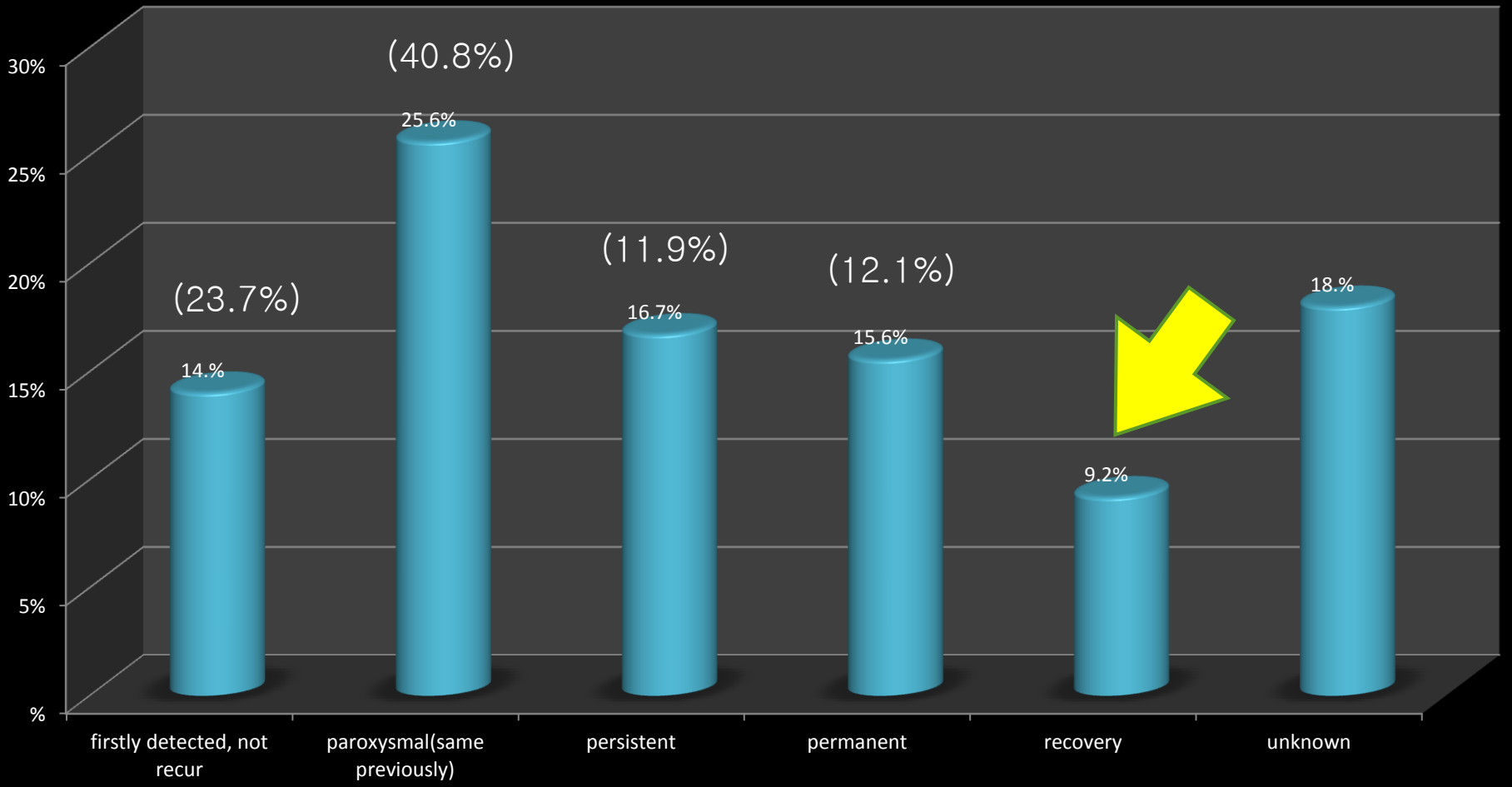
말초 색전증       폐 색전증       출혈성 발작       기타 주요 출혈

실신       심부전       심장 무수축       기타 합병증 / 주요 이상 반응

약성 중앙       이상 반응이 없었음

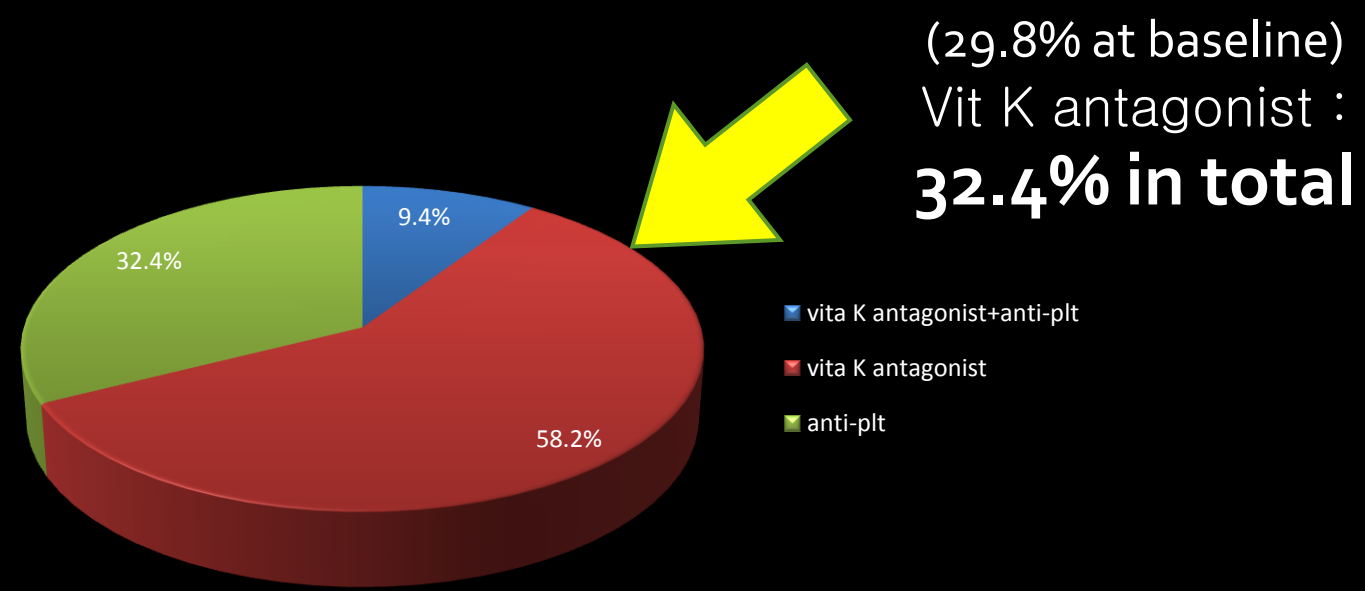
# Classification of AF

At baseline (%)





# Anti-thrombin therapy



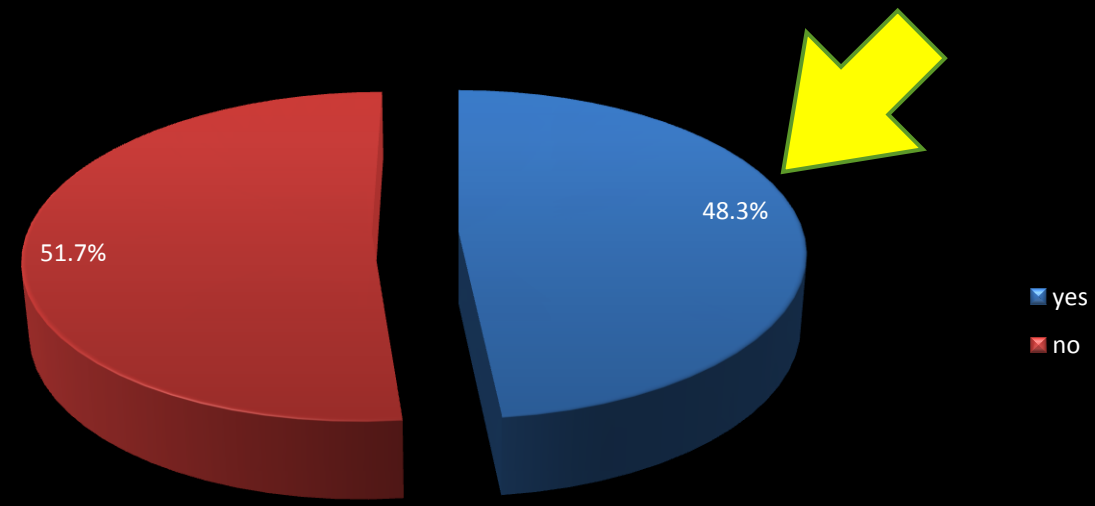
25% : anti-platelet drugs  
(74.4% : aspirin)

- Mean INR  $1.96 \pm 1$
- Mean warfarin dose : 3.78mg

# Discontinuance of warfarin

- Warfarin at baseline : n=1063
  - warfarin at 1y F/U : n=645 (61%)
- **Reasons for warfarin discontinuance**
  - intolerance (29.7%)
  - refusal (3.7%), bleeding risk (2.9%)
  - poor compliance (0.8%)
  - older age(>80YO) (3.1%)
  - discomfort with drug (2.2%)
  - bleeding (1.8%), unknown (10.7%)

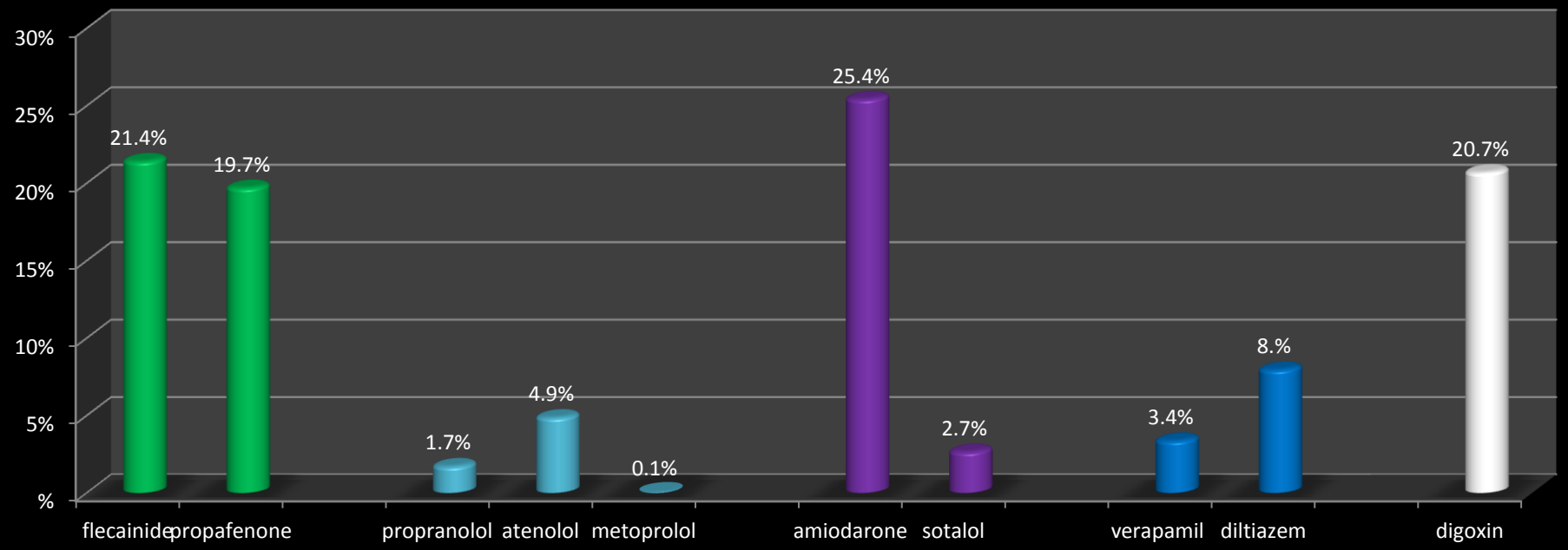
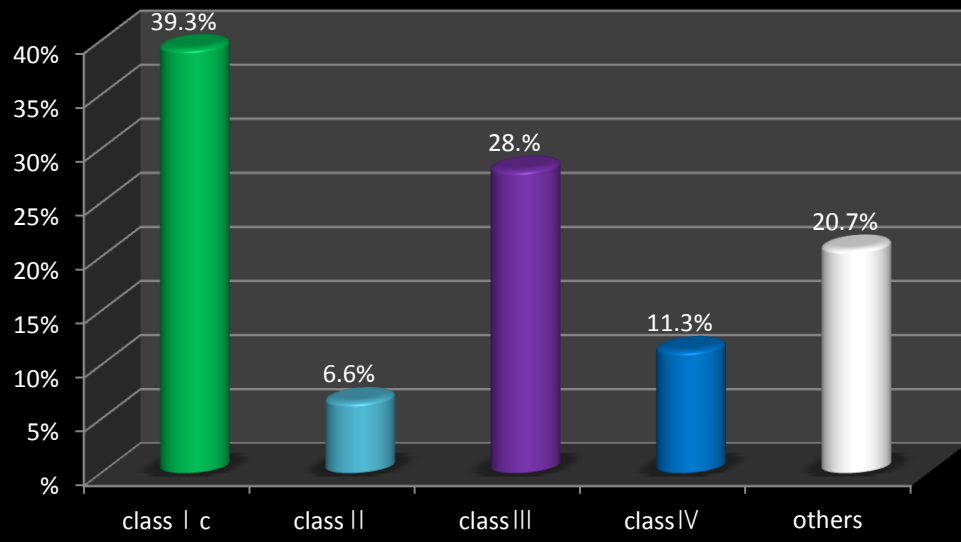
# Rhythm & Rate control (1)



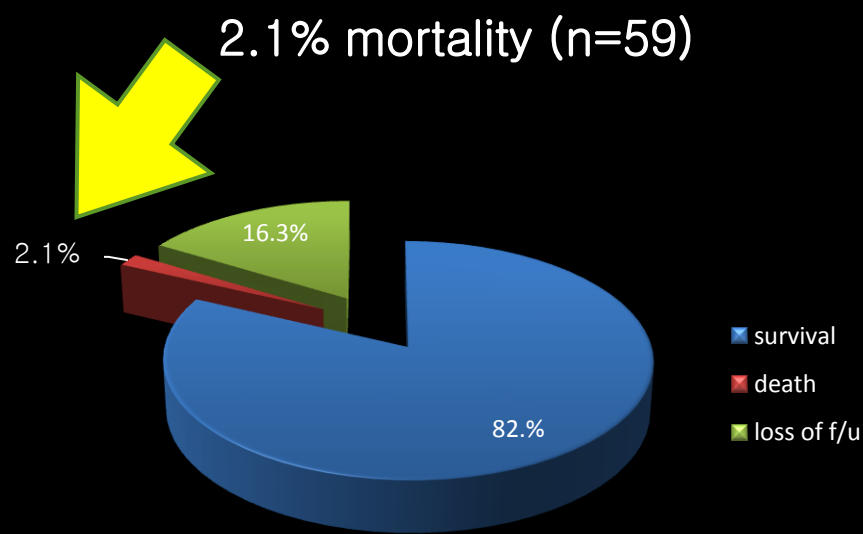
**Rhythm Control** : 44% → 51.7%

**Rate Control** : 56% → 48.3%

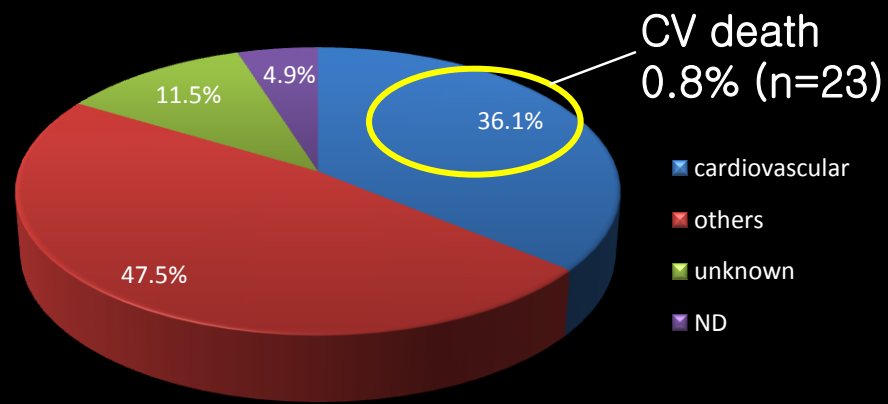
# Rhythm & Rate control (2)



# 1 year follow up condition



## Causes of death



**In RecordAF, CV death : 1.7%**

# Major complications & Adverse effect

➤ In 359 patients (12.8%)

▪ Heart failure in 44

New angina in 20

In RecordAF, 3.7%

Bleeding with anti-TE med. in 35 (1.2%)

Syncope in 15

Ischemic thromboembolism in 10

> 0.6%


TIA in 7

In RecordAF, 2.1%

# Acknowledgement

## KORAF Investigators

Tai Ho Rho, MD.	Catholic University
Yong Seog Oh, MD.	Catholic University
Young Soo Lee, MD.	Daegu Catholic University
Yong Gyeun Cho, MD.	Kyungbuk National University
Yoon Nyun Kim, MD.	Keimyung University
Young-Hoon Kim, MD.	Korea University
Tae Joon Cha, MD.	Kosin University
Myung Gon Kim, MD.	Kyunghee University
Choong Hwan Kwak, MD.	Kyungsang University
Dong Jin Oh, MD.	Hanllym University
In Suck Choi, MD.	Gil Hospital
Myung Yong Lee, MD.	Dankook University
Sang Won Park, MD.	Sejong Heart Center
Seil Oh, MD.	Seoul National University
June Soo Kim, MD.	Samsung Medical Center
Dong Gu Shin, MD.	Yeongnam University
Moon-Hyoung Lee, MD.	Yonsei University
Kee-Joon Choi, MD.	Asan Medical Center
Nam-Ho Kim, MD.	Wongwang University
Dae Kyung Kim, MD.	Inje University
June Namgung, MD.	Inje University
Dae Hyuck Kim, MD.	Inha University
Jeong-Gwan Cho, MD.	Chunnam National University
Kyoung-Suk Lee, MD.	Chunbuk National University
Jae Hwan Lee, MD.	Chungnam National University
Myung Chan Cho, MD.	Chungbuk National University



경청해 주셔서 감사합니다!