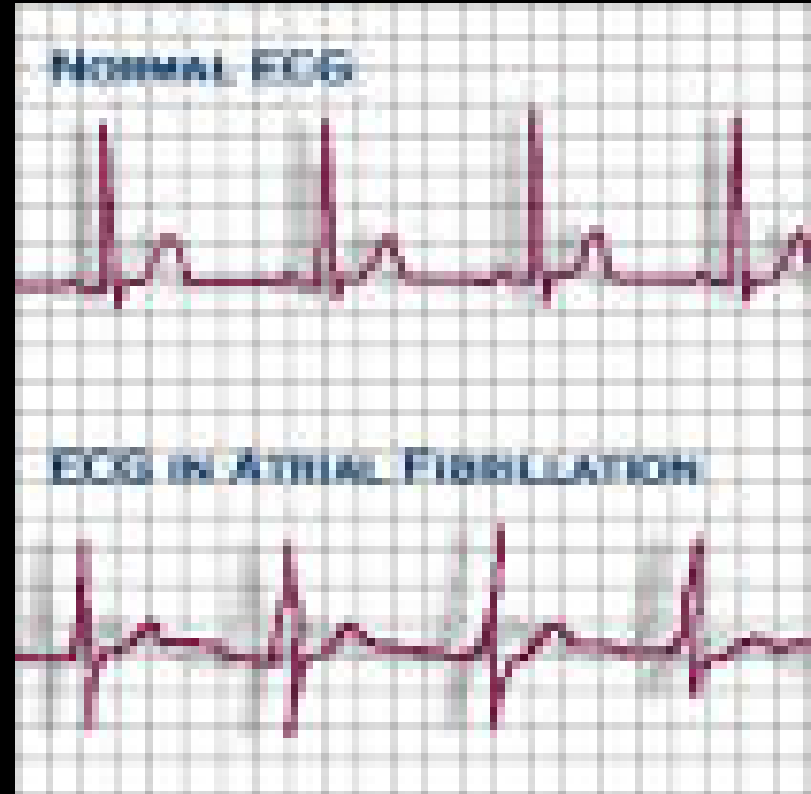


ATRIAL FIBRILLATION AND STROKE

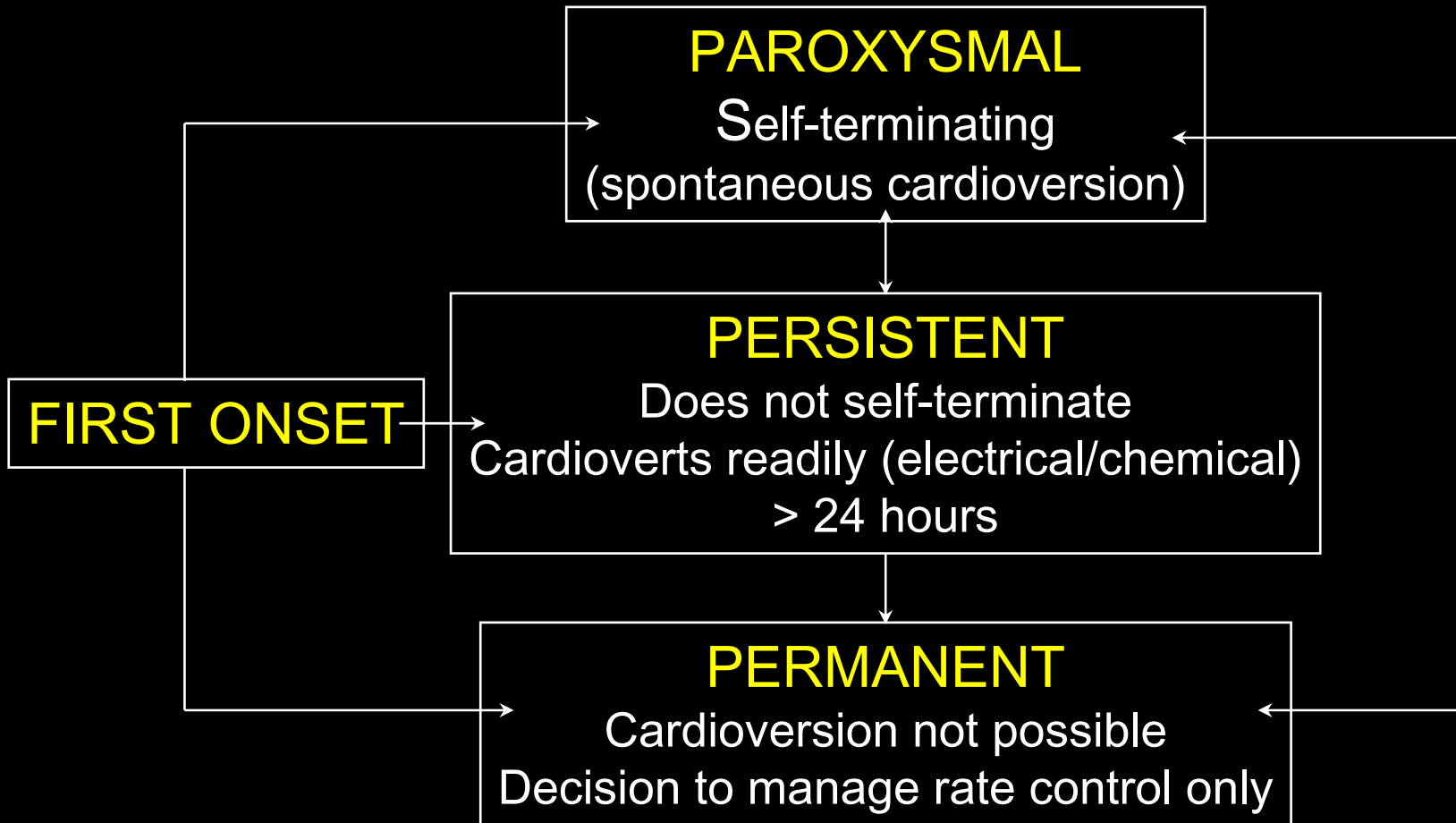
Slides adapted and prepared by Professor Richard Hobbs, University of Birmingham, UK

Atrial Fibrillation - ECG Features

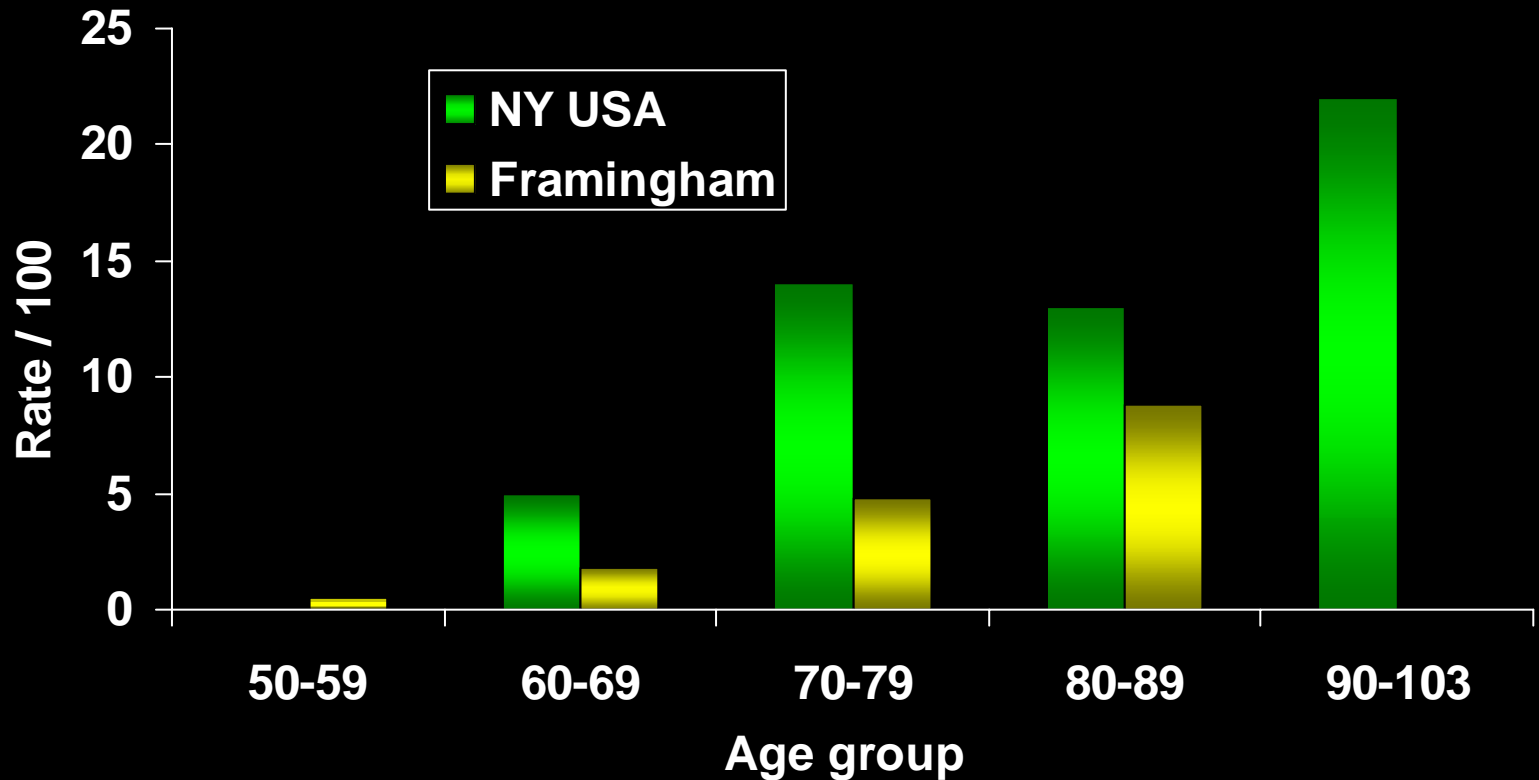
- Narrow irregular QRS complexes
- Undulating baseline without p waves
- Variable baseline (between and within patients)
- Variable ventricular response (AV nodal function and autonomic tone)



Classification of Atrial Fibrillation (3Ps)

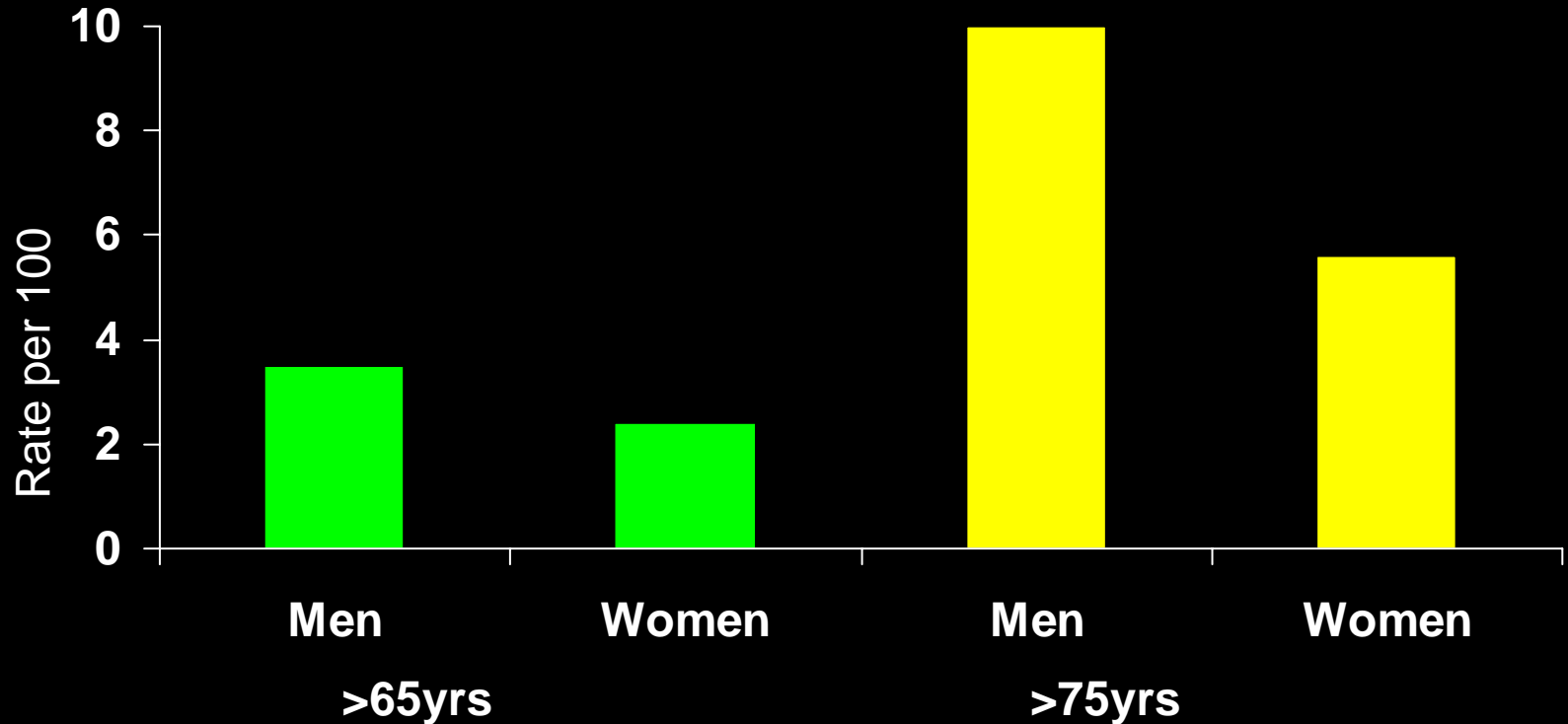


Prevalence of AF



Aronow 1996
Wolf 1991

Prevalence of Atrial Fibrillation (UK)



(Sudlow 1998)

Clinical Features of Atrial Fibrillation

Palpitations

Dyspnoea

(Pre) Syncope

Angina

Heart Failure

Increased Thromboembolism risk

Tachycardia-induced

Cardiomyopathy

Increased Mortality

Asymptomatic

Diagnosing AF in primary care

◆ Pulse checks

- » Sensitivity 87% (CI 82-91%); specificity 81% (CI 80-83%)
- » PPV 30% (CI 27-34%)

◆ ECG

– GP and nurse

- » GP sens 80% (CI 71-87%); spec 92% (CI 90-93%)
- » GP PPV 41% (34-48%)
- » PN sens 77% (CI 68-84%); spec 85% (CI 83-87%)
- » PN PPV 27% (CI 22-33%)

– Interpretative software

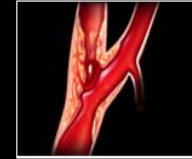
- » Sens 87% (CI 82-91%); spec 99% (CI 99%)
- » PPV 90% (CI 85-93%)

– Specialist interpretation

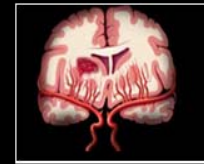
Hobbs et al, SAFE study, in press

Stroke Pathology and outcome (30 days)

◆ Cerebral infarction – 10%



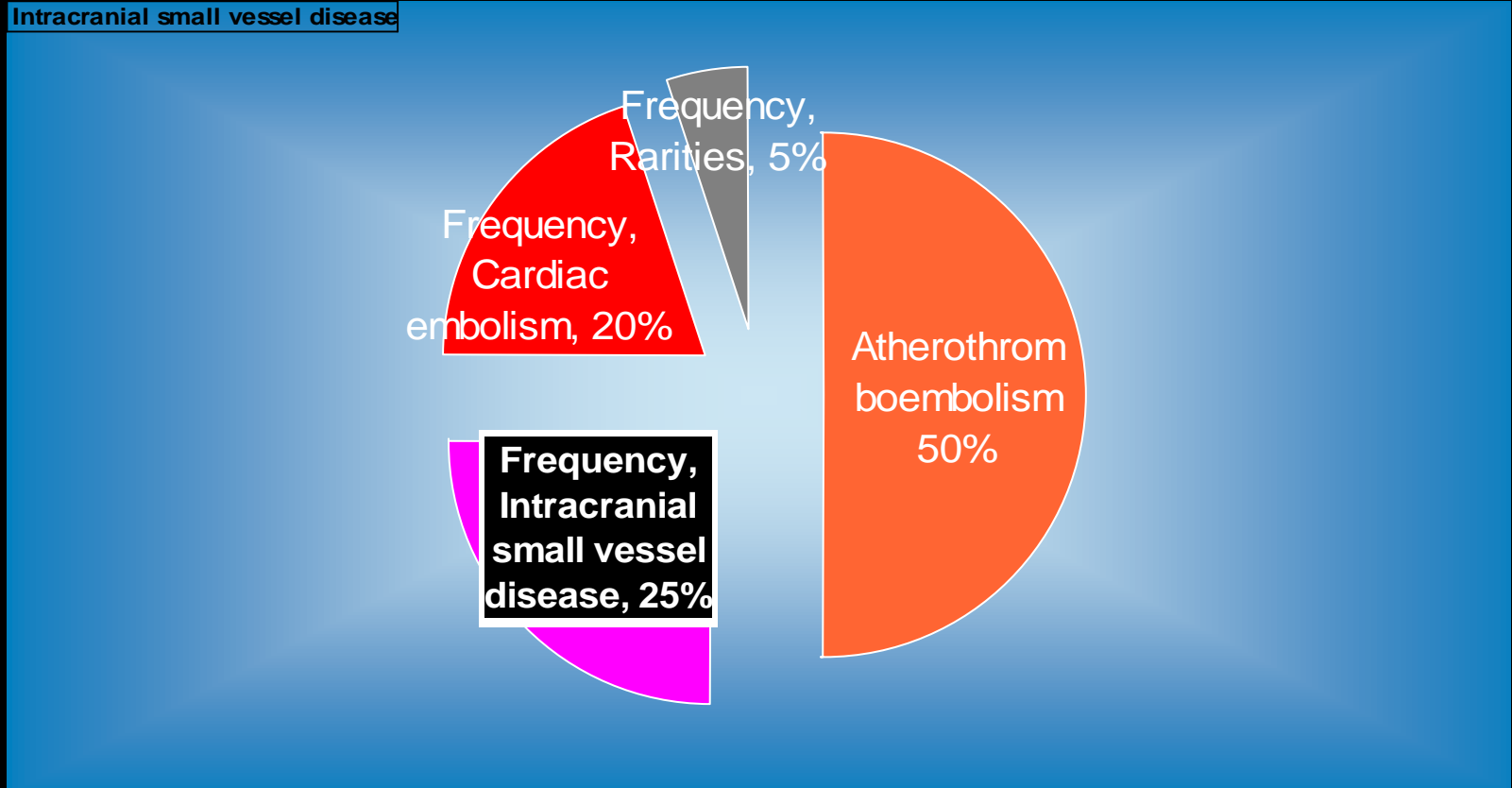
◆ Cerebral haemorrhage – 52%



◆ Subarachnoid Haemorrhage – 49%

OCSP 1990

Causes of Ischaemic Stroke



Clinical Features of Cardio-embolic Stroke

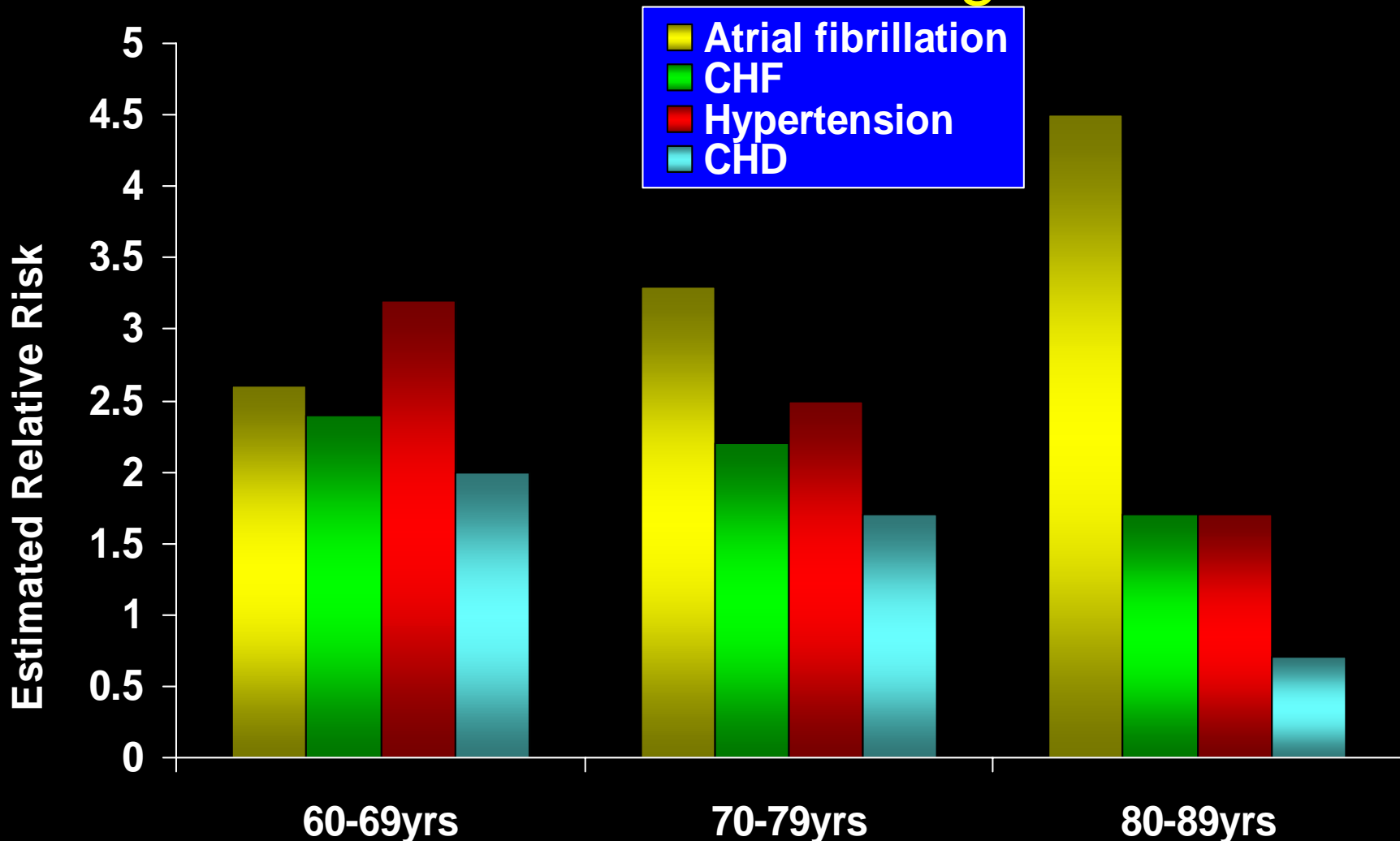
- ◆ Symptoms sudden and maximal at onset
- ◆ Unconsciousness or seizures at onset
- ◆ Larger, more disabling, more often fatal
- ◆ Anterior Circn-MCA territory involvement
- ◆ Posterior Circn-Post. Cerebral / top basilar

Balance of probabilities vs. Alternative

Slides adapted and prepared by Professor Richard Hobbs, University of Birmingham, UK

mechanisms

Relative Risk of Stroke According to the Changing Presence of Cardiovascular Disease With Age



Atrial Fibrillation and Stroke

Facts, figures and dilemmas:

- ◆ Anticoagulant treatment reduces risk of stroke in AF (2/3 RRR)
- ◆ Evidence from 16 RCTs, 10,000 participants
- ◆ Not all patients with AF have same risk
- ◆ Most / not all / some patients with AF are not prescribed warfarin
- ◆ The findings of trials cannot be extrapolated into routine clinical practice

Impact of AF on risk of stroke

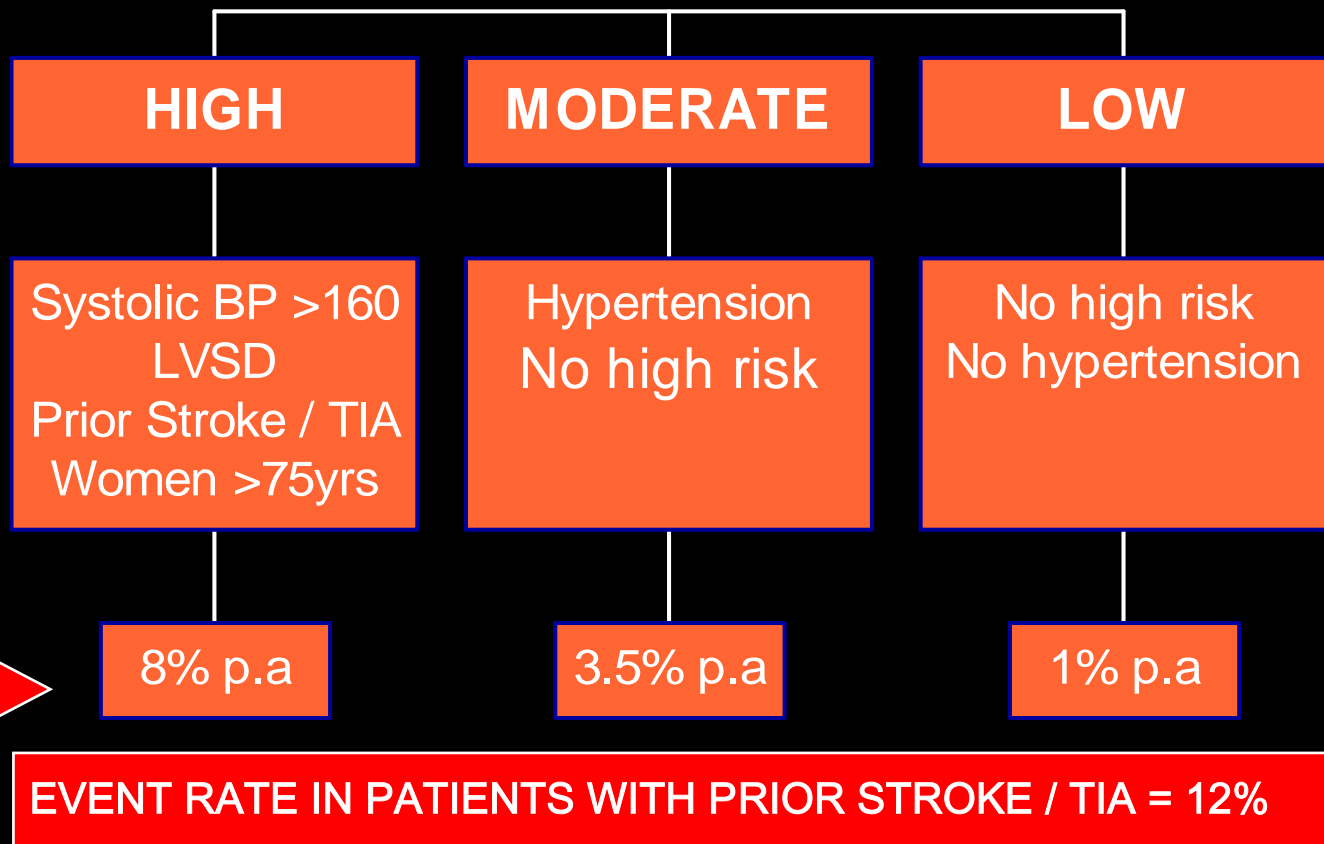
- ◆ AF increases risk of stroke 5-fold
 - Annual risk of stroke is 5% in AF patients
 - 15% of all acute stroke patients have AF
 - 36% of acute stroke patients >80 years have AF
- ◆ After initial stroke, risk of recurrence is 12% per year and annual risk of death is 5%

Secondary impact of AF on stroke

- ◆ Increases mortality of stroke by 70%
- ◆ Increases severity of stroke
 - Increases length of hospital stay by 20%
 - Decreases chance of returning home by 40%
 - Increases residual disability
- ◆ Higher recurrence rate
- ◆ Silent cerebral infarcts more frequent

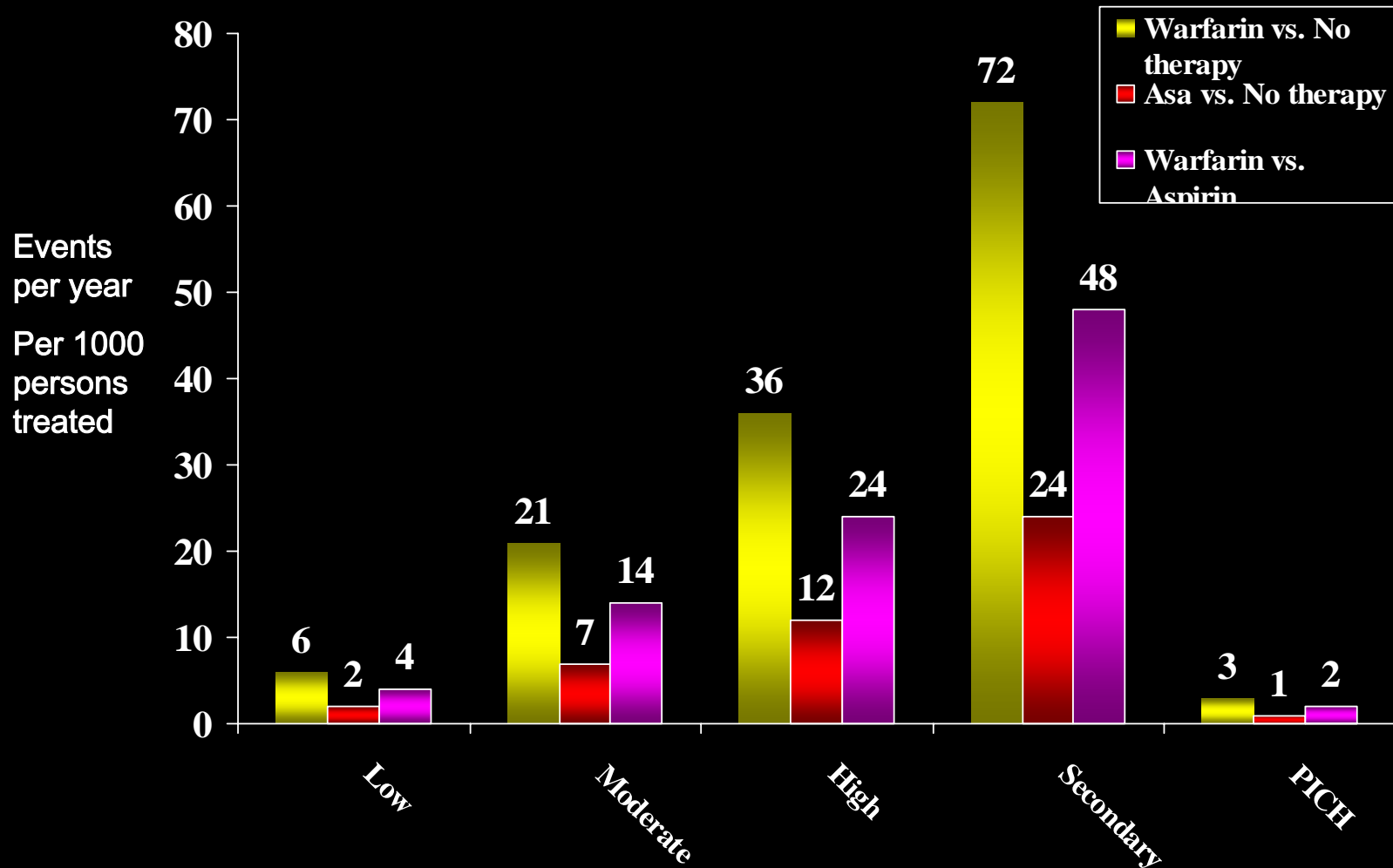
STROKE PREVENTION IN NVAF

RISK STRATIFICATION

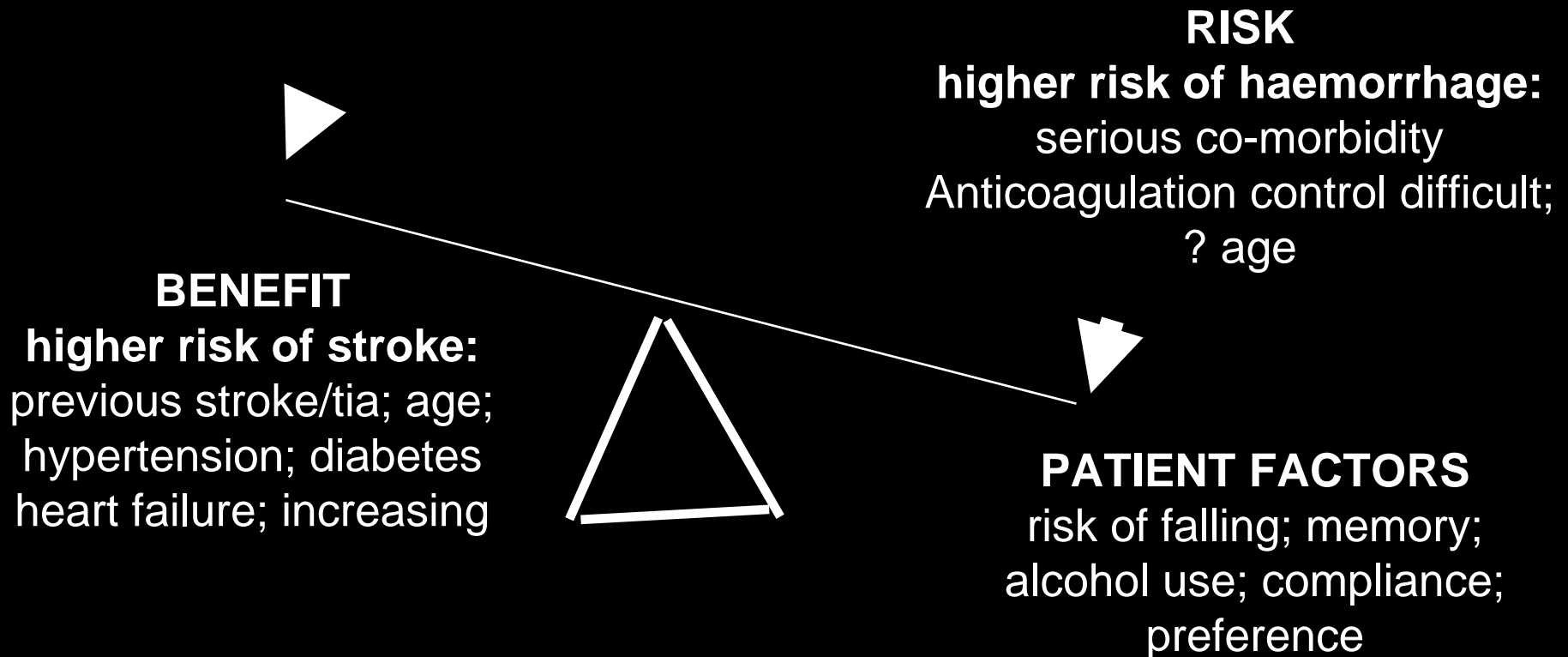


Stroke risk
with Aspirin

Estimated Size of Treatment Effects According to Risk Status in NVAF



Why isn't the evidence being acted upon?



WARFARIN FOR ALL ?

Does Evidence Translate into Practice ?

FACT:

Anticoagulation
is under utilised
in practice

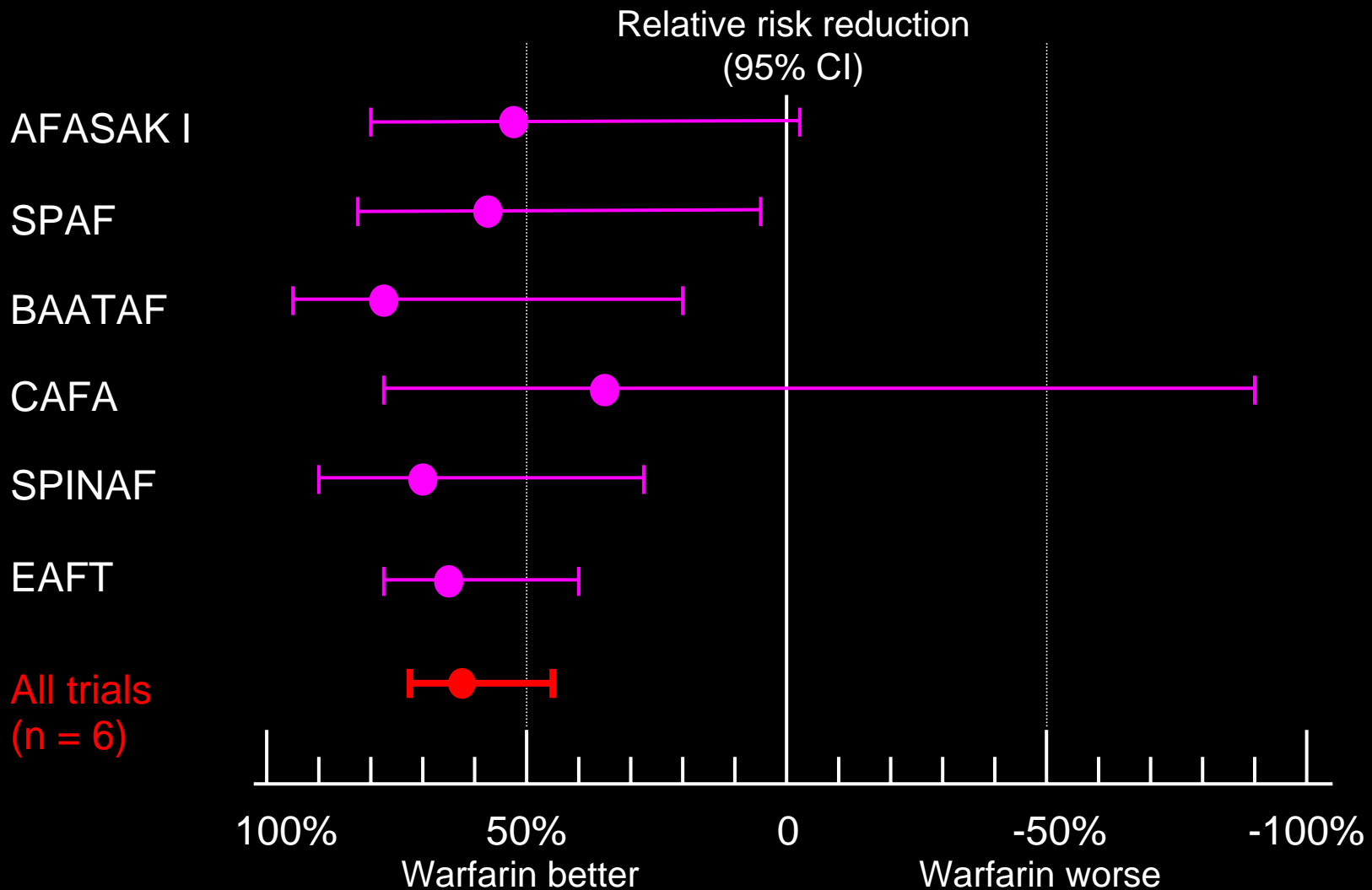
- ◆ RCTs unrepresentative of practice?
 - recruited/screened low
 - disproportionate men / younger patients
- ◆ Trials overestimation of benefit?
- ◆ A/C control / efficacy and complication rates not achievable?

Warfarin for Stroke Prevention; Safety and Optimal Intensity

For the 5 PP Trials;

- ◆ Risk of haemorrhage related to age, intensity, fluctuations in INR
- ◆ Target INRs 1.4-4.5 (2.5-4 EAFT)
- ◆ Mean achieved INRs 2-2.6 (2.9 EAFT)
- ◆ Threshold INR associated with increased risk >75 yrs unknown

Efficacy of warfarin vs. placebo



Efficacy of Warfarin

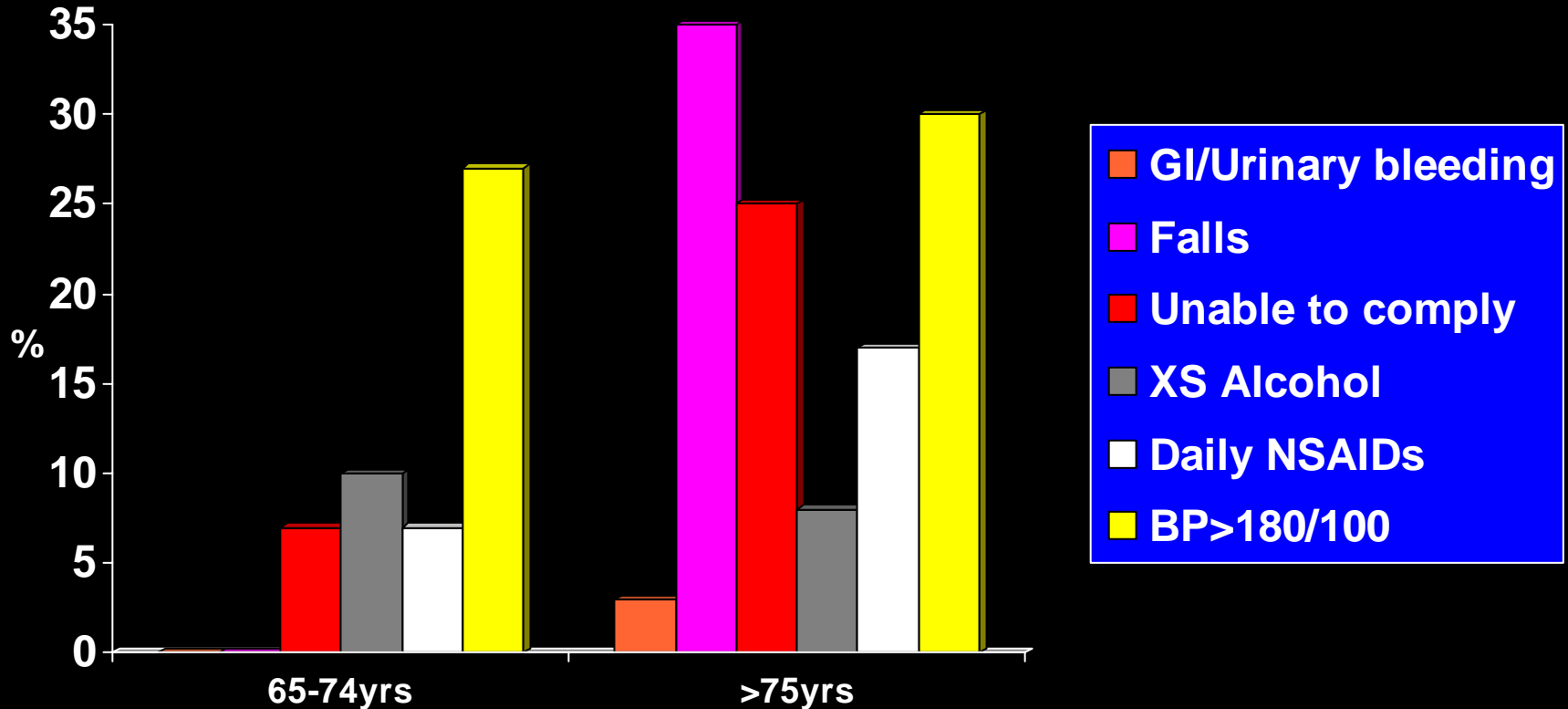
Primary prevention

- ◆ Reduces risk of stroke by 68%
- ◆ Reduces annual stroke risk from 4.5 to 1.4%
- ◆ NNT for 1 year to prevent one stroke = 32

Secondary prevention

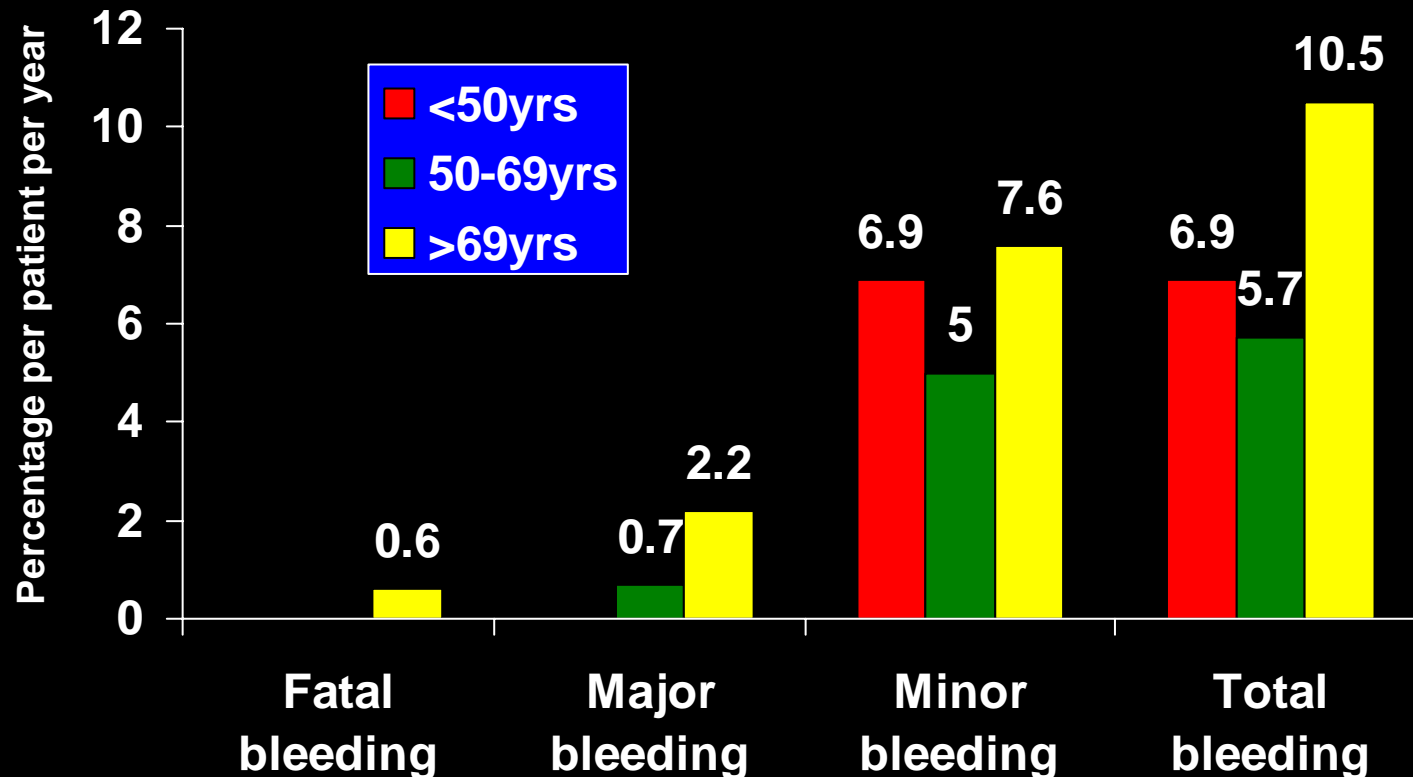
- ◆ Reduces risk of stroke by 66%
- ◆ Reduces annual stroke risk from 12 to 4%
- ◆ NNT for 1 year to prevent one stroke = 12

CONTRAINDICATIONS TO ANTICOAGULANT THERAPY IN THE COMMUNITY



Sudlow et al 1998

WHAT IS THE ABSOLUTE RISK OF BLEEDING ON ANTICOAGULANTS ?



(Palareti, Lancet 1996)

Warfarin for the Very Elderly?

5 primary prevention studies:

- ◆ 223 patients > 75 yrs (Warfarin treated).
- ◆ Mean age 80 yrs (SD3)
- ◆ One ICH (rate 0.3% p.A.)
- ◆ Patients <75 yrs (rate 0.2% p.A.)

(Connolly 1994)

Does Aspirin Work in NVAF?

- ◆ Six trials, 3337 patients, 33% > 75 yrs
- ◆ Mean follow up 1.5 yrs, aspirin dose 50-1300 mg/day
- ◆ Meta-analysis 22% RRR (CI 2-38%) abs RR 1.7%
- ◆ Only SPAF significant (325 mg) RRR 44%, SPAF non disabling stroke RRR 62%, disabling stroke RRR 17%
- ◆ SPAF, AFASAK, EAFT - combined 23% RRR ischaemic stroke (CI 0-40)
- ◆ Benefit of aspirin primarily -non disabling, non cardio-embolic stroke

Aspirin is not without risk also

- ◆ Cost – 2 major extracranial bleeds, 1-2 major intracranial bleeds per 1000 patients treated for 29 months
- ◆ But – 1 in 10 patients intolerant of aspirin / clopidogrel
- ◆ And - Up to 30% will experience GI side effects – impact on concordance unknown

HOW WELL ARE THE GUIDELINES FOLLOWED FOR ANTICOAGULATION IN AF?

Clinical implementation of anticoagulation guidelines....

Proportion of eligible AF pts *properly treated* in various clinical series:

	AC treated	AC CI
1993 AFASAK 2 (DK)	8%	6.5%
1994 Lip (UK)	20%	34%
1994 Gottlieb & Salem-Schatz (USA)	79%	20%
1994 Albers (USA)	44%	44%
1998 Sudlow (UK)	23%	10% (65-74 yrs.) 35% (> 75 yrs.)

Atrial Fibrillation and Stroke

Translating Evidence Into Practice

167 high risk, chronic NVAf patients, 75-90yrs (mean 76yrs)

Follow up - 313 patient years

	Interval between INR	% Time in Range	% Time above Range
Clinical Practice	31 days	61%	13%
Pooled Data (5 Trials)	21-30 days	66%	9%

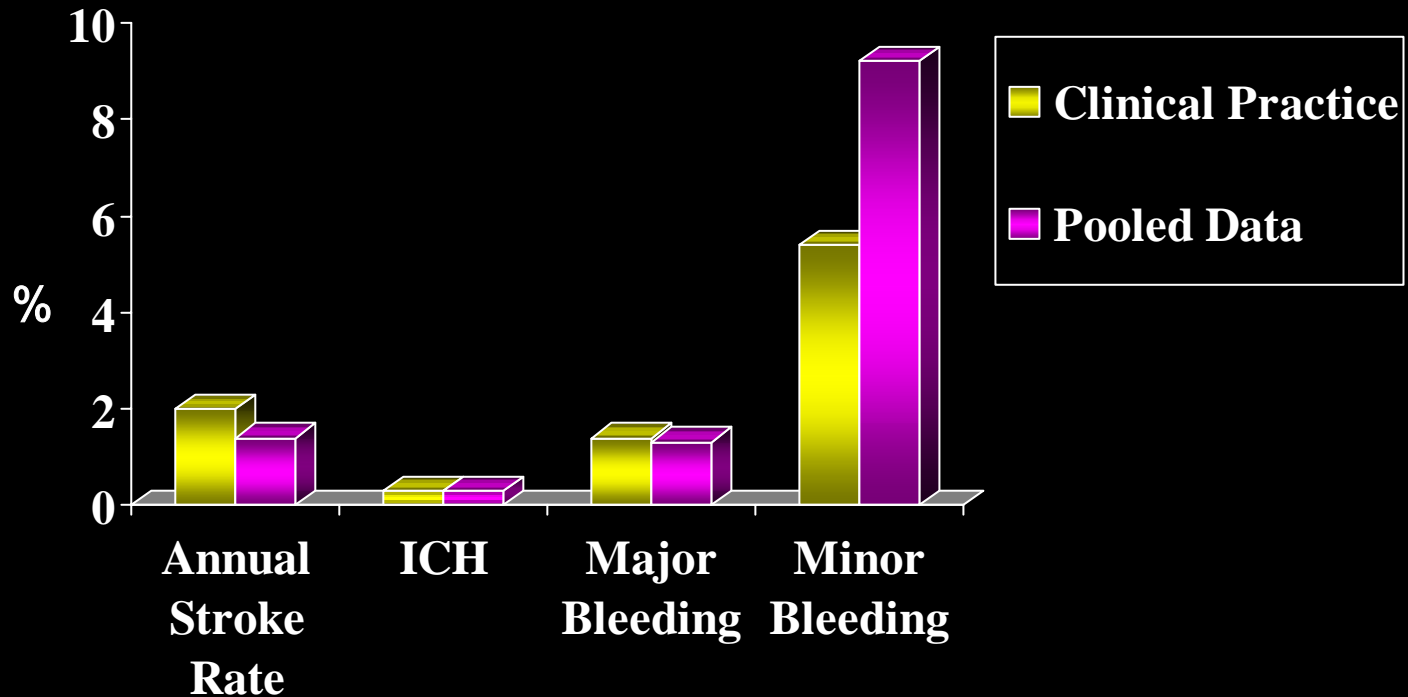
Kalra L. BMJ 2000

Slides adapted and prepared by Professor Richard Hobbs, University of Birmingham, UK

Atrial Fibrillation and Stroke

Translating Evidence Into Practice

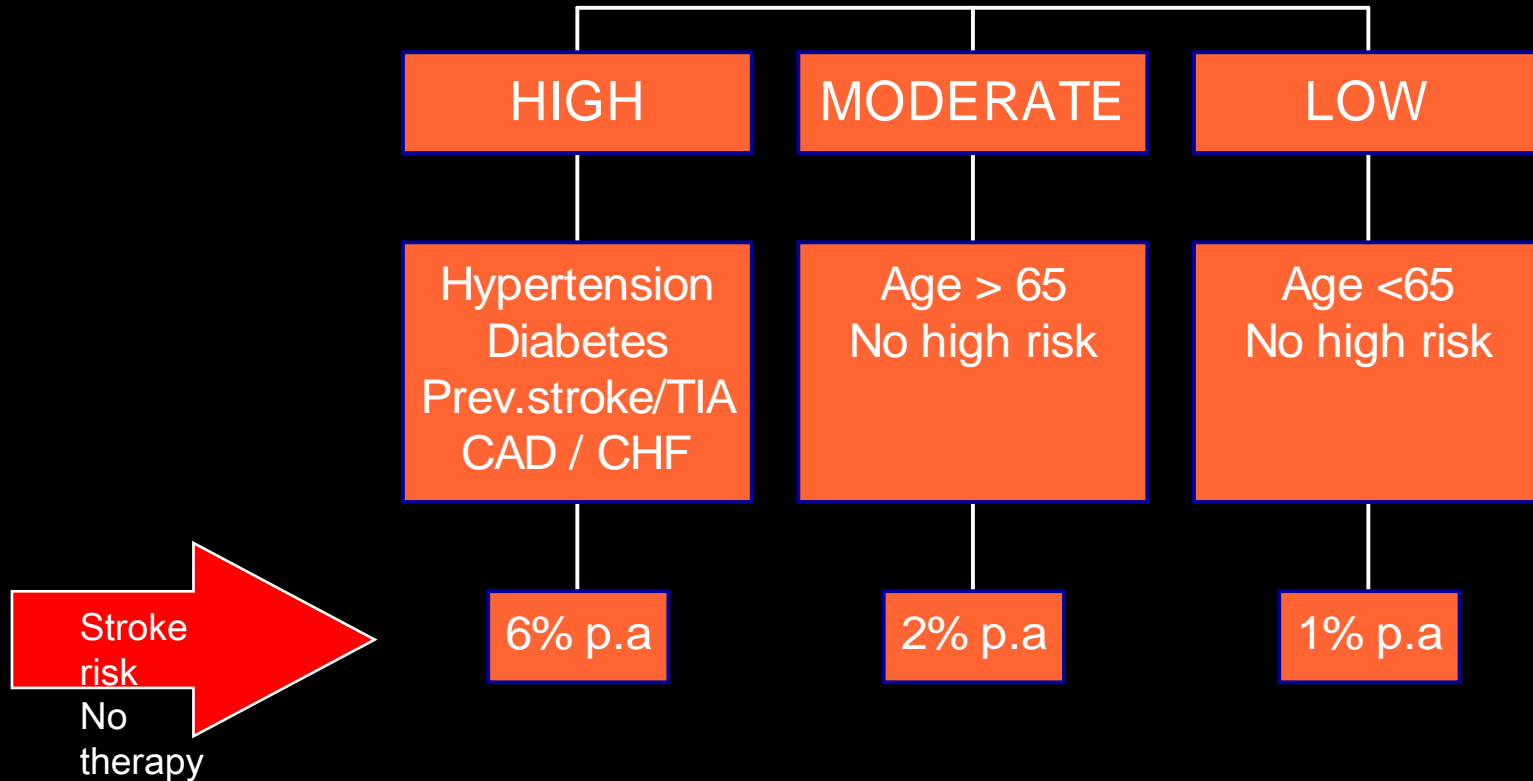
Annual Event Rate (%) in patients taking warfarin



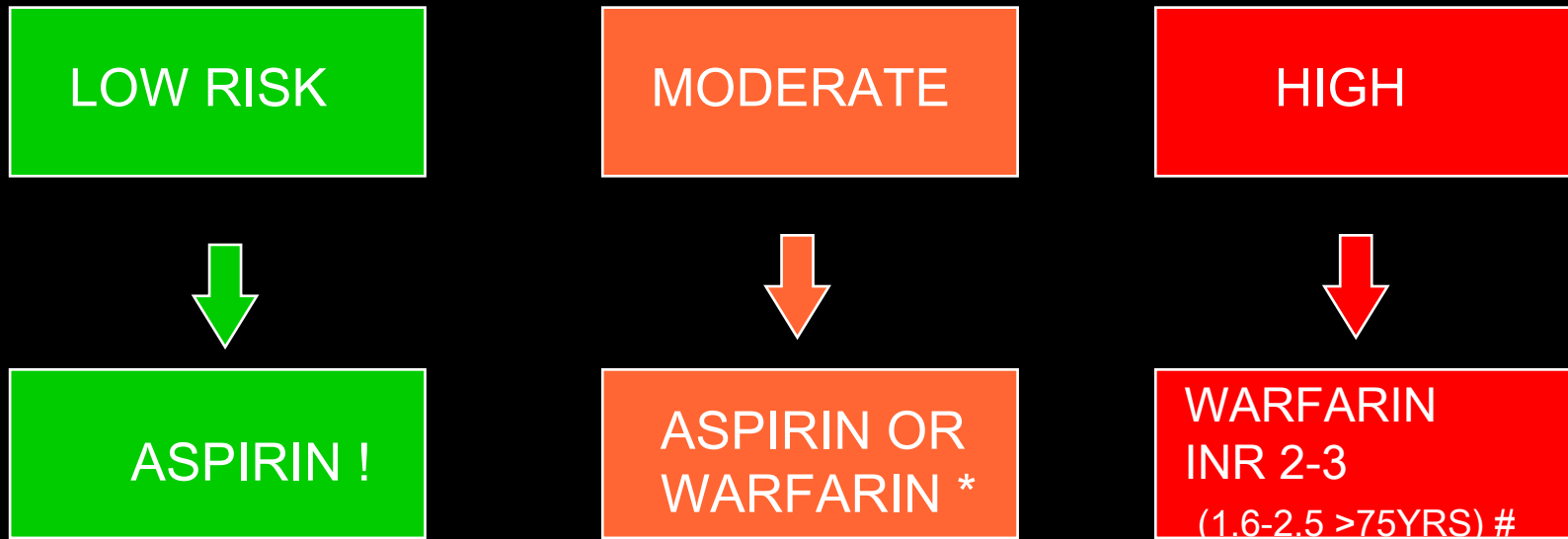
Kalra BMJ.
2000

STROKE PREVENTION IN NVAF

RISK STRATIFICATION



PREVENTION OF STROKE IN NVAF RECOMMENDATIONS



! Remember to follow carefully for development of high risk features

* Consider patient preference and individual bleeding risks

INR 2.0 option where bleeding concerns exist

Lone AF <60yrs - none