

# Stabil Koroner Arter Hastalığına Yaklaşım ve Tedavide Farklı Bir Seçenek

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Prof. Dr. Oktay Ergene

# Stabil Koroner Arter Hastalığı (SKAH) Epidemiyoloji-Mortalite

- Kadın      60-79 Yaş      % 16 KAH
- Kadın      >80 Yaş      % 23 KAH
- Erkek      60-79 Yaş      % 25 KAH
- Erkek      >80 Yaş      % 37 KAH

# Stabil Koroner Arter Hastalığı (SKAH) Epidemiyoloji-Mortalite

## Prevalans

- Kadın 45-64 Yaş % 5-7
- Kadın 64-85 Yaş % 10-12
- Erkek 45-64 Yaş % 4-7
- Erkek 64-85 Yaş % 12-14

## İnsidans (yıllık)

- Kadın 45-64 Yaş >%1
- Erkek 45-64 Yaş %1

## Mortalite

% 1.2-2.4

# Stabil Koroner Arter Hastalığı (SKAH) Mortalite

**Genel Mortalite**                      **% 1.2-2.4**

**RITA-2**                                      **% 1.4**

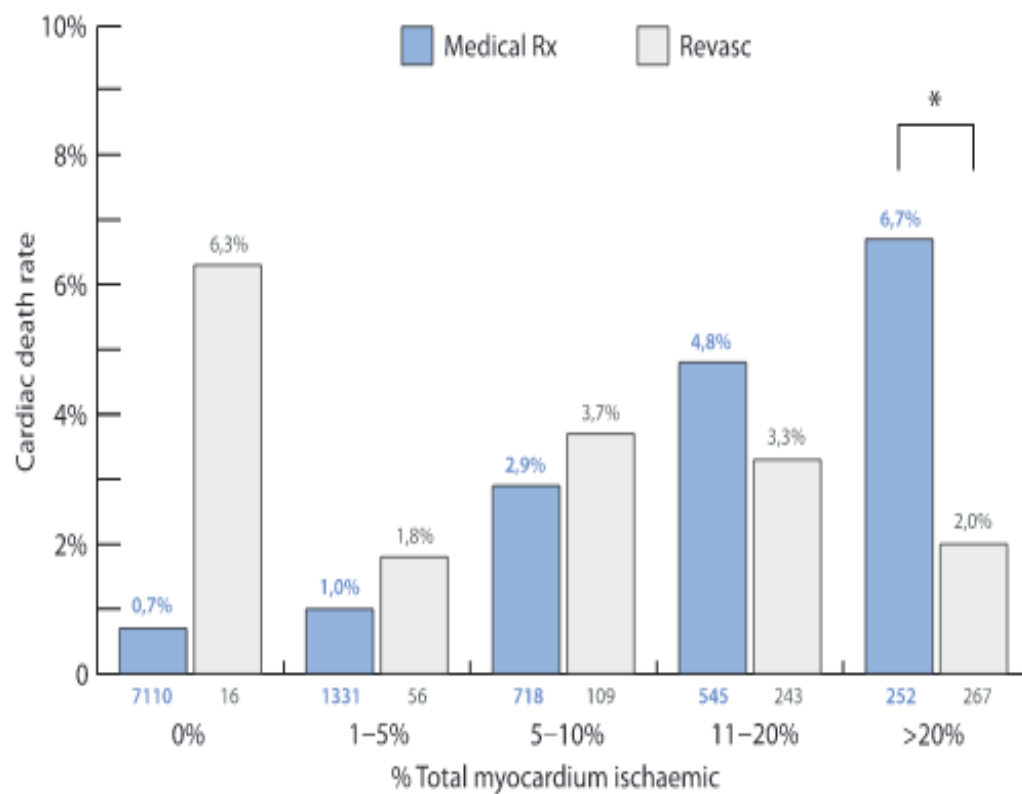
**COURAGE**                                      **% 2.7**

**REACH**                                      **% 3.8**

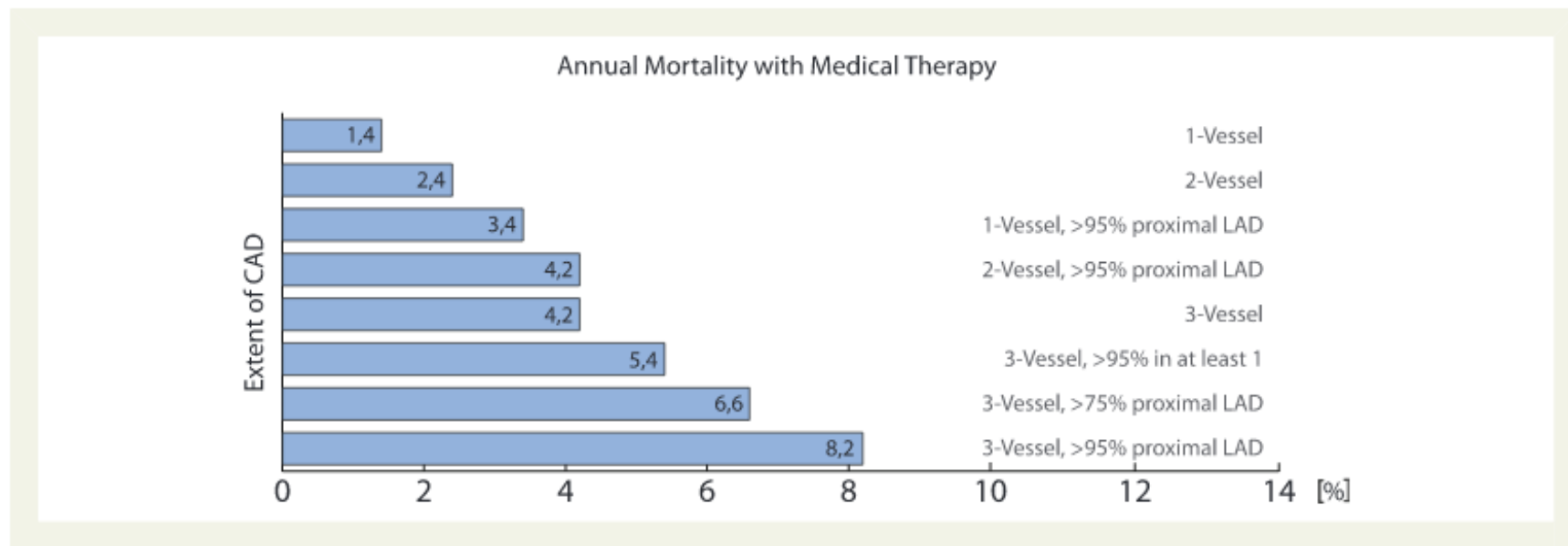
# SKAH da Mortaliteyi Belirleyen Faktörler

- **Miyokard iskemisi**
- **KAH yaygınlığı**
- **Kalp hızı**

# Miyokard İskemisi Mortalite İlişkisi

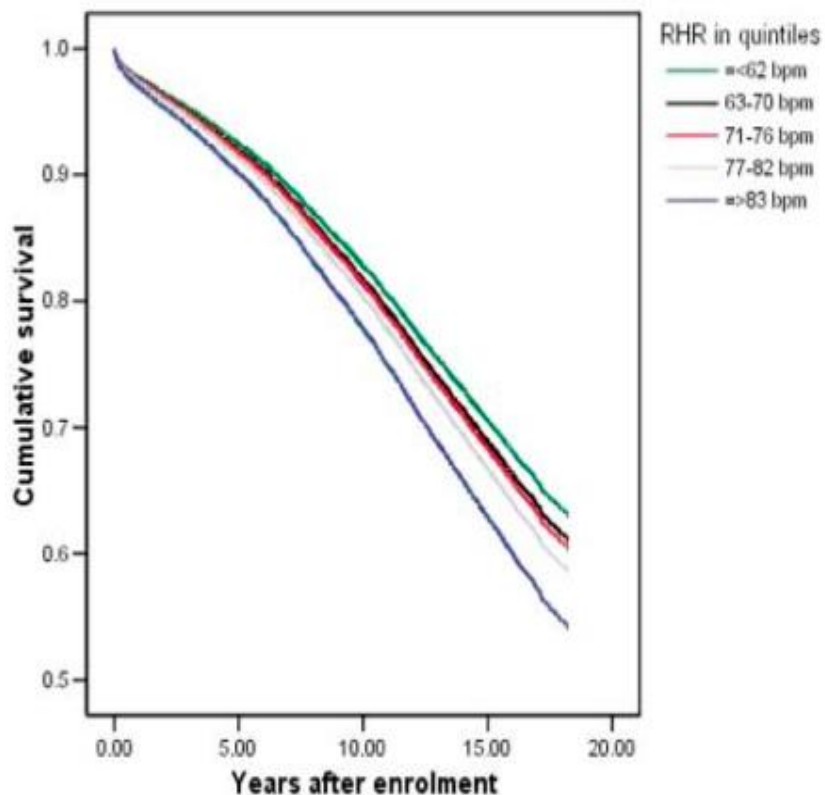


# KAH Yaygınlığı Mortalite İlişkisi

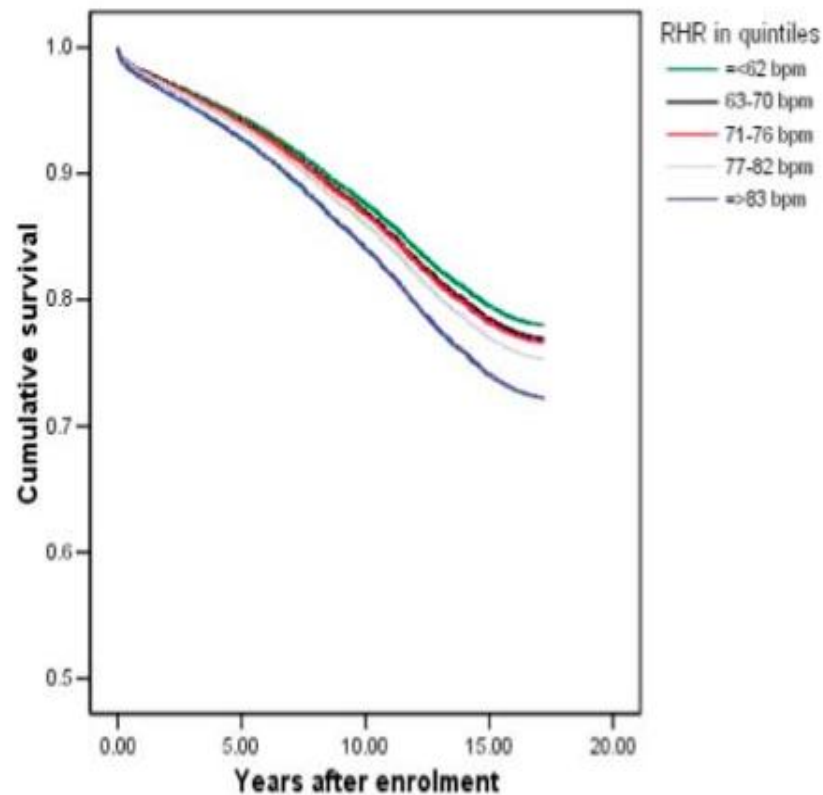


# Kalp Hızı Mortalite İlişkisi

Adjusted survival curves for overall mortality by RHR quintiles



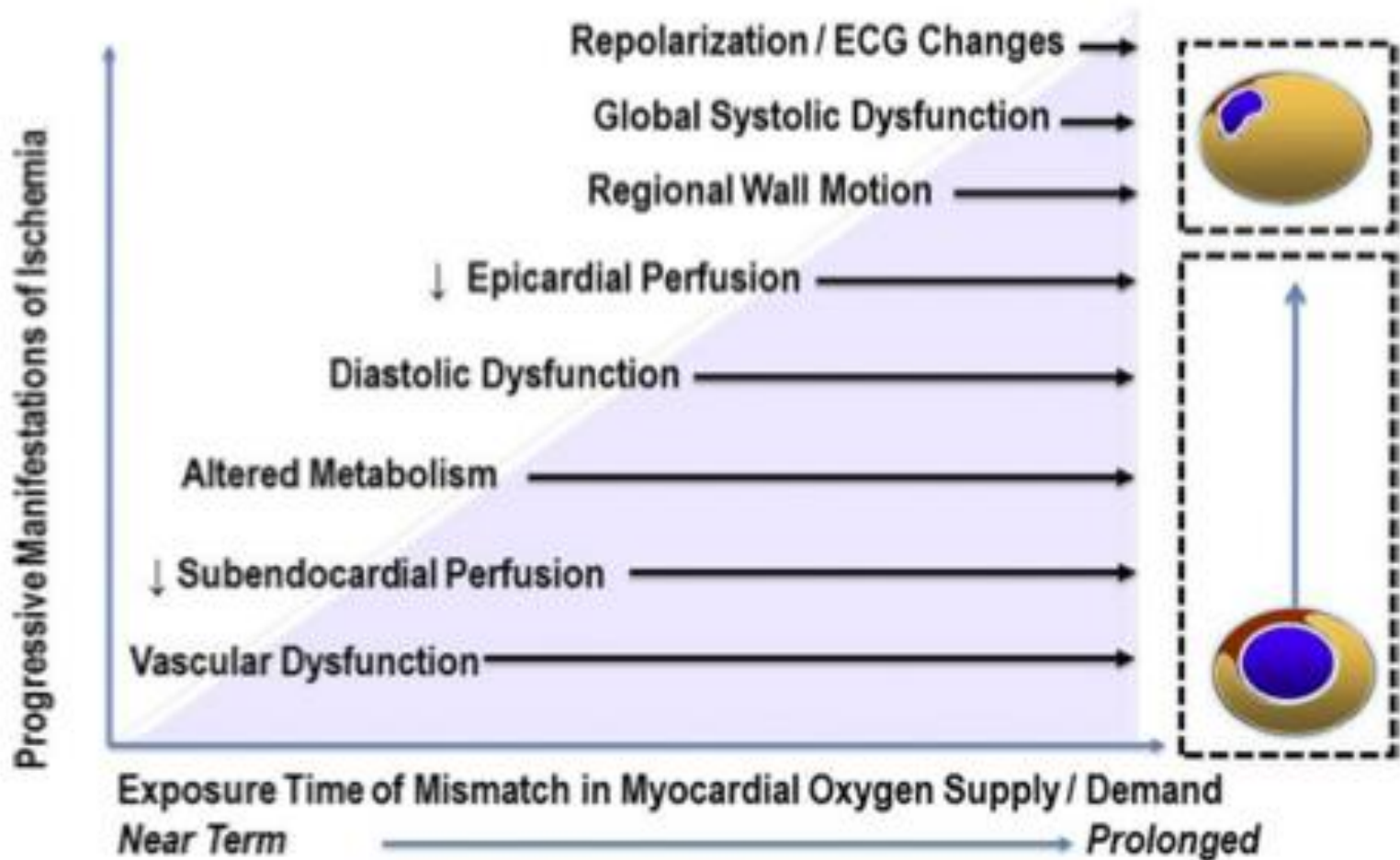
Adjusted\* survival curves for CV mortality by RHR





# SKAH Tanı Süreci

# İskemik Süreç



# SKAH da Kullandığımız Tanı Testlerinin Karakteristikleri

	Diagnosis of CAD	
	Sensitivity (%)	Specificity (%)
Exercise ECG <sup>a, 91, 94, 95</sup>	45–50	85–90
Exercise stress echocardiography <sup>96</sup>	80–85	80–88
Exercise stress SPECT <sup>96-99</sup>	73–92	63–87
Dobutamine stress echocardiography <sup>96</sup>	79–83	82–86
Dobutamine stress MRI <sup>b,100</sup>	79–88	81–91
Vasodilator stress echocardiography <sup>96</sup>	72–79	92–95
Vasodilator stress SPECT <sup>96, 99</sup>	90–91	75–84
Vasodilator stress MRI <sup>b,98, 100-102</sup>	67–94	61–85
Coronary CTA <sup>c,103-105</sup>	95–99	64–83
Vasodilator stress PET <sup>97, 99, 106</sup>	81–97	74–91

# Duyarlılık ve Özgüllük

		GERÇEK DURUM	
		H+	H-
TEST	T+	a	b
	T-	c	d
TOPL.		n1	n2

**Sensitivity (duyarlılık):** Hasta olanlar içinde (+) testi olanlar  $a/n1$

**Spesivity (özügüllük):** Hasta olmayanlar içinde (-) testi olanlar  $d/n2$

**PPV: (+) testi olanlar içinde hasta olanlar;  $a/(a+b)$**

**NPV: (-) testi olanlar içinde hasta olmayanların oranı;  $d/(c+d)$**

# Sensitivite (duyarlılık)

- Analizin doğru olarak gösterdiği spesifik bir hastalığa sahip olanların oranıdır.
- Aranılan hastalığın hastada bulunması durumunda test sonucunun pozitif olma olasılığıdır.

$$\text{Duyarlılık (\%)} = [\text{GP}/(\text{GP}+\text{YN})]\times 100$$

# Spesifisite (özgüllük)

- Analizin doğru olarak gösterdiği spesifik bir hastalığa sahip olmayanların oranıdır.
- Aranılan hastalığın hastada bulunmaması durumunda test sonucunun negatif olma olasılığıdır.

$$\text{Özgüllük (\%)} = [\text{GN}/(\text{GN}+\text{YP})]\times 100$$

# Önceden tahmin değeri (prediktif değer)

- Laboratuvar testinin uygulanmakta olduğu topluluktaki hastalığın yaygınlık oranına (prevalansına) göre testin doğru tanı koydurma olasılığıdır.

**Pozitif prediktif değer:** testin uygulandığı toplulukta (+) sonucu olanların gerçekte hasta olma olasılığıdır. Prevalans ve özgüllükten etkilenir.

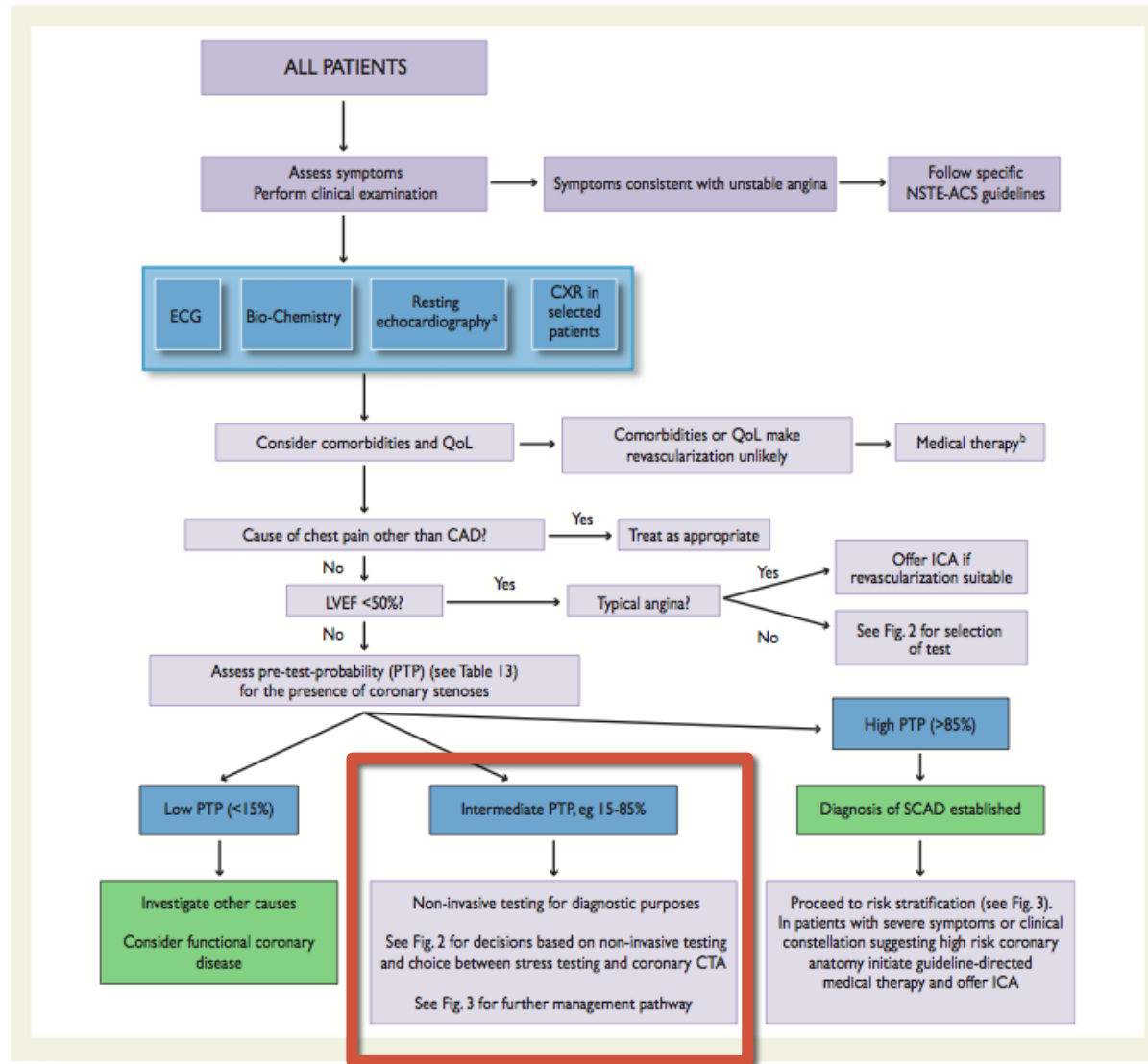
**Negatif prediktif değer:** testin uygulandığı toplulukta (-) sonucu olanların gerçekte hasta olmama olasılığıdır. Prevalans ve duyarlılıktan etkilenir.

# SKAH da Kullandığımız Tanı Testlerinin Karakteristikleri

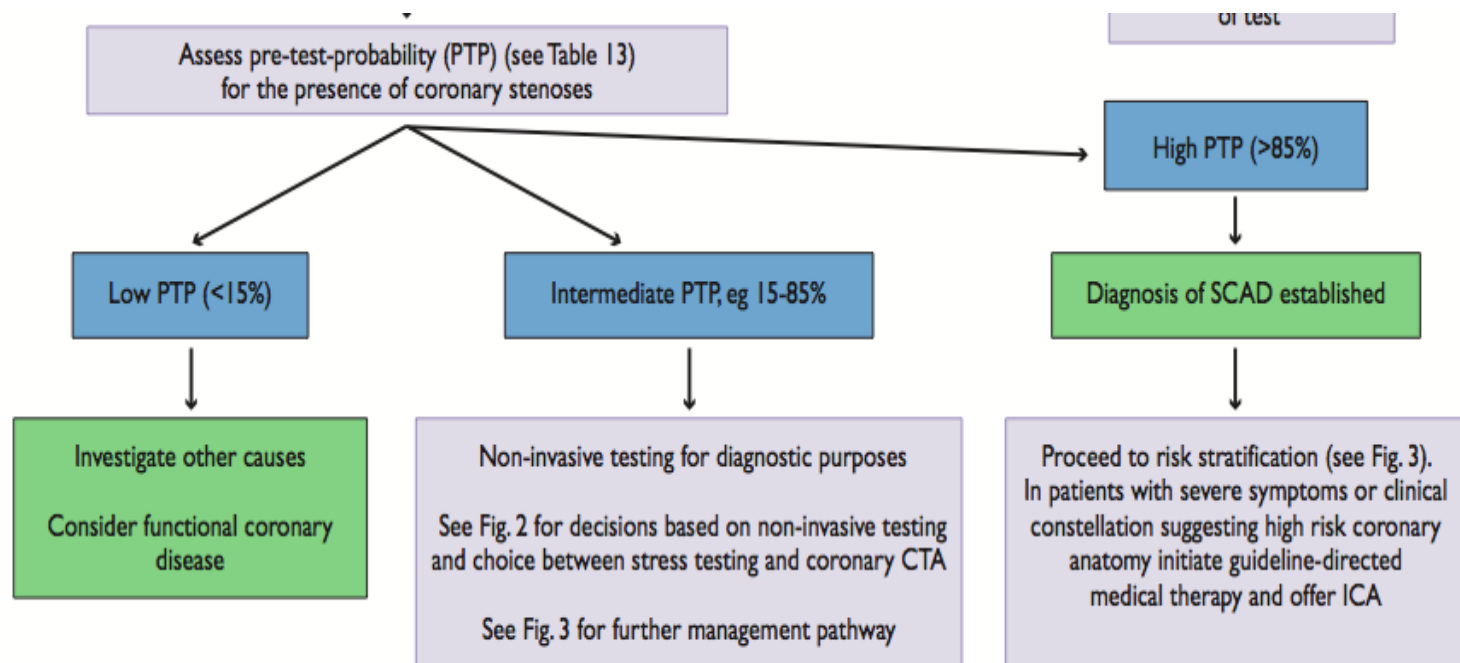
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# SKAH Tanı Algoritması



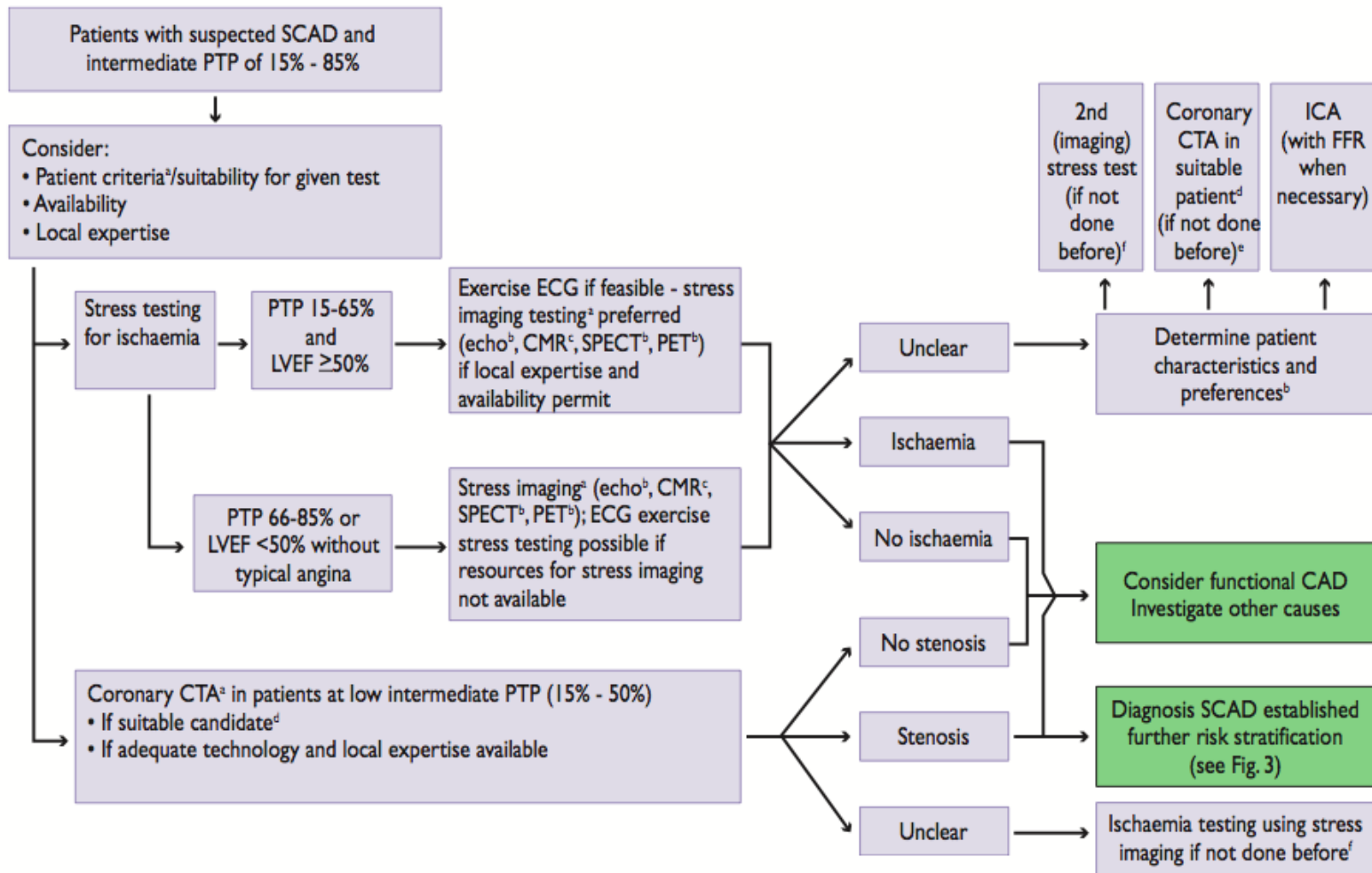
# SKAH da Tanı Süreci



# SKAH da Klinik 'pre-test' Olasılıklar

Age	Typical angina		Atypical angina		Non-anginal pain	
	Men	Women	Men	Women	Men	Women
30–39	59	28	29	10	18	5
40–49	69	37	38	14	25	8
50–59	77	47	49	20	34	12
60–69	84	58	59	28	44	17
70–79	89	68	69	37	54	24
>80	93	76	78	47	65	32

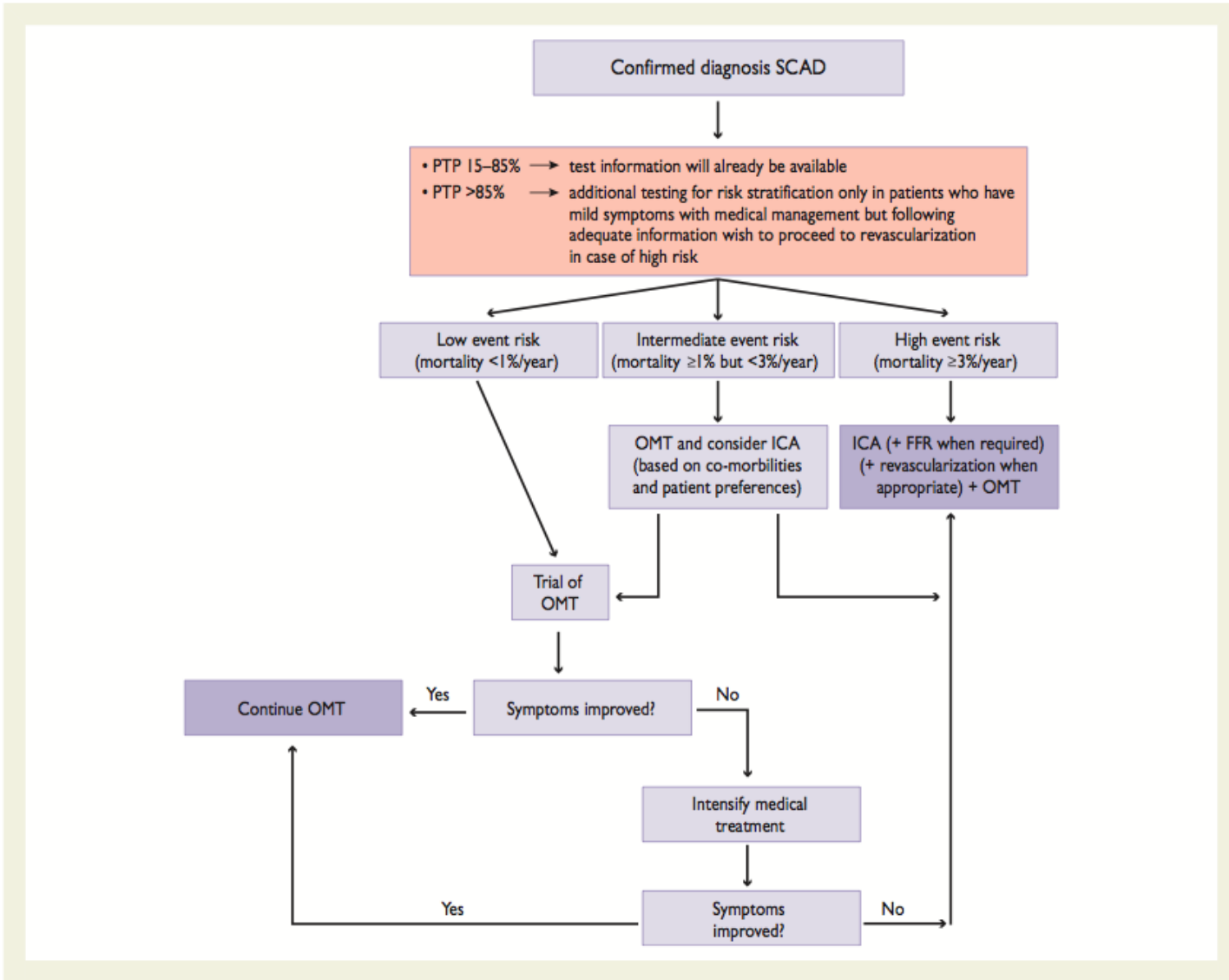
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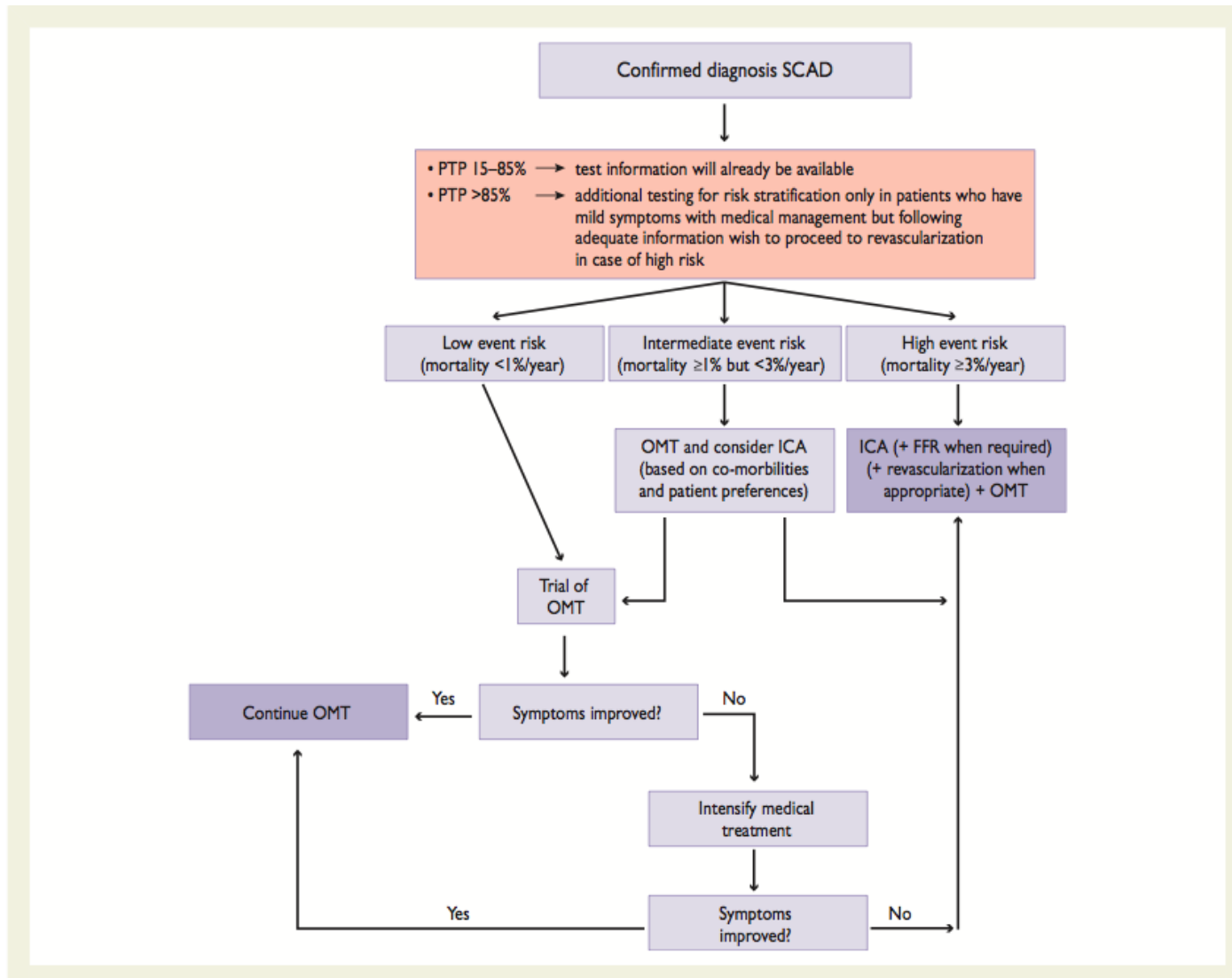
# SKAH da Tanı ve Tedavi Süreci



# Farklı Test Modaliteleri için Risk Tanımlamaları

Exercise stress ECG <sup>b</sup>	High risk	CV mortality >3%/year.
	Intermediate risk	CV mortality between 1 and 3%/year.
	Low risk	CV mortality <1%/year.
Ischaemia imaging	High risk	Area of ischaemia >10% (>10% for SPECT; limited quantitative data for CMR – probably ≥2/16 segments with new perfusion defects or ≥3 dobutamine-induced dysfunctional segments; ≥ 3 segments of LV by stress echo).
	Intermediate risk	Area of ischaemia between 1 to 10% or any ischaemia less than high risk by CMR or stress echo.
	Low risk	No ischaemia.
Coronary CTA <sup>c</sup>	High risk	Significant lesions of high risk category (three-vessel disease with proximal stenoses, LM, and proximal anterior descending CAD).
	Intermediate risk	Significant lesion(s) in large and proximal coronary artery(ies) but not high risk category.
	Low risk	Normal coronary artery or plaques only.

# SKAH da Risk Tayinine Göre Tedavi Algoritması





# SKAH Tanısında BT Anjiyografi Kullanımı

Recommendations	Class <sup>a</sup>
Coronary CTA should be considered as an alternative to stress imaging techniques for ruling out SCAD in patients within the lower range of intermediate PTP for SCAD in whom good image quality can be expected.	IIa
Coronary CTA should be considered in patients within the lower range of intermediate PTP for SCAD after a non conclusive exercise ECG or stress imaging test or who have contraindications to stress testing in order to avoid otherwise necessary invasive coronary angiography if fully diagnostic image quality of coronary CTA can be expected.	IIa
Coronary calcium detection by CT is not recommended to identify individuals with coronary artery stenosis.	III
Coronary CTA is not recommended in patients with prior coronary revascularization.	III
Coronary CTA is not recommended as a 'screening' test in asymptomatic individuals without clinical suspicion of coronary artery disease.	III

# SKAH Riski Olan Asemptomatik Kişilerde Tanısal Testler

In asymptomatic adults with hypertension or diabetes a resting ECG should be considered for CV risk assessment.	<b>IIa</b>	<b>C</b>
In asymptomatic adults at intermediate risk (see SCORE for definition of intermediate risk - <a href="http://www.heartscore.org">www.heartscore.org</a> ) measurement of carotid intima-media thickness with screening for atherosclerotic plaques by carotid ultrasound, measurement of ankle-brachial index or measurement of coronary calcium using CT should be considered for CV risk assessment.	<b>IIa</b>	<b>B</b>
In asymptomatic adults with diabetes, 40 years of age and older, measurement of coronary calcium using CT may be considered for CV risk assessment.	<b>IIb</b>	<b>B</b>
In asymptomatic adults without hypertension or diabetes a resting ECG may be considered.	<b>IIb</b>	<b>C</b>
In intermediate-risk asymptomatic adults (see SCORE for definition of intermediate risk - <a href="http://www.heartscore.org">www.heartscore.org</a> ), (including sedentary adults considering starting a vigorous exercise programme), an exercise ECG may be considered for CV risk assessment particularly when attention is paid to non-ECG markers such as exercise capacity.	<b>IIb</b>	<b>B</b>
In asymptomatic adults with diabetes or asymptomatic adults with a strong family history of CAD or when previous risk assessment testing suggests high risk of CAD, such as a coronary artery calcium score of 400 or greater stress imaging tests (MPI, stress echocardiography, perfusion CMR) may be considered for advanced CV risk assessment.	<b>IIb</b>	<b>C</b>
In low- or intermediate-risk (based on SCORE) asymptomatic adults stress imaging tests are not indicated for further CV risk assessment.	<b>III</b>	<b>C</b>

# Koroner Mikrovasküler Hastalığı Olduğunda Şüphelenilen Olgularda Tanı Testleri

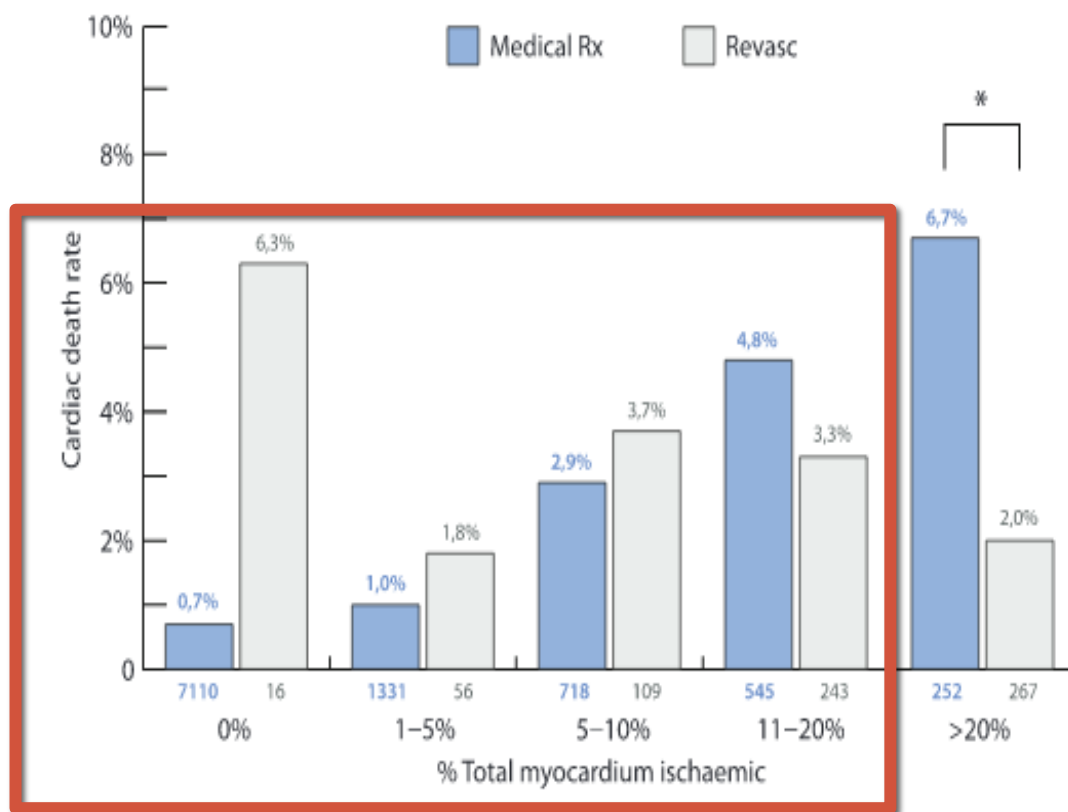
Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
Exercise or dobutamine echocardiography should be considered in order to establish whether regional wall motion abnormalities occur in conjunction with angina and ST-changes.	IIa	C
Transthoracic doppler echocardiography of the LAD with measurement of diastolic coronary blood flow following intravenous adenosine and at rest may be considered for non invasive measurement of coronary flow reserve.	IIb	C
Intracoronary acetylcholine and adenosine with Doppler measurements may be considered during coronary arteriography, if the arteriogram is visually normal, to assess endothelium dependent and non-endothelium dependent coronary flow reserve, and detect microvascular/epicardial vasospasm.	IIb	C

# Vazospastik Angina Şüphesinde Tanı Testleri

Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
An ECG is recommended during angina if possible.	I	C
Coronary arteriography is recommended in patients with characteristic episodic resting chest pain and ST-segment changes that resolve with nitrates and/or calcium antagonists to determine the extent of underlying coronary disease.	I	C
Ambulatory ST-segment monitoring should be considered to identify ST-deviation in the absence of an increased heart rate.	IIa	C
Intracoronary provocative testing should be considered to identify coronary spasm in patients with normal findings or non obstructive lesions on coronary arteriography and the clinical picture of coronary spasm to diagnose the site and mode of spasm.	IIa	C

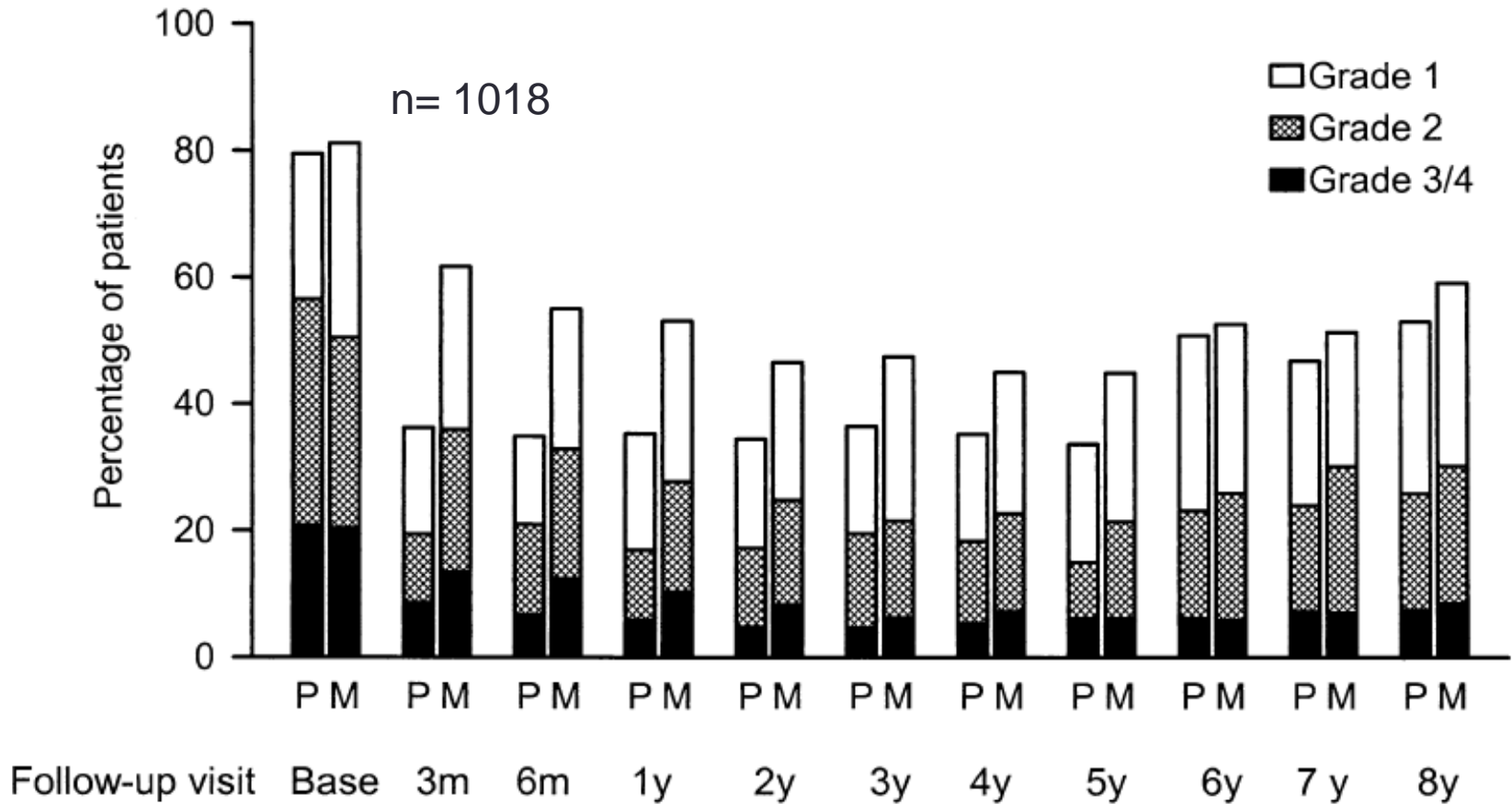
# SKAH Medikal Tedavisi

# Miyokard İskemisi Mortalite İlişkisi

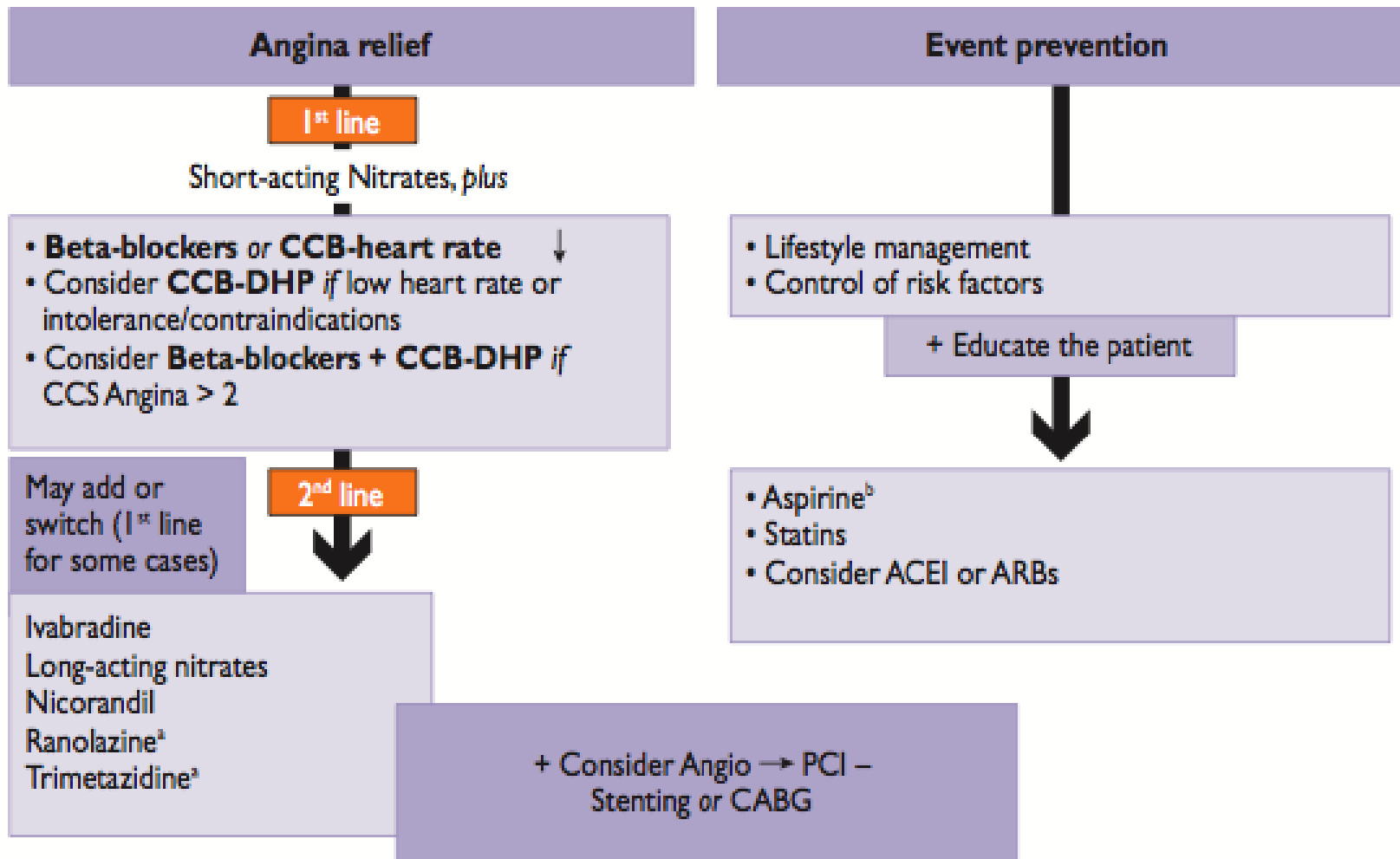


# Anjinayı Tedavi Edebiliyor muyuz ?

## RITA-2 Çalışması 7 yıl Takip



# SKAH Medikal Tedavisi





# • Teşekkürler