Supplementary Material 1: Search Strategy

Ovid MEDLINE(R) ALL <1946 to September 23, 2025>

1 Computed Tomography Angiography/ 18033
2 Comput* tomograph* angio*.mp. 35026
3 CT angiogra*.mp. 18467
4 Coronary computed tomography angiogra*.mp. 4444
5 CCTA.mp. 4116
6 CTA.mp. 21132
7 (coronary adj3 (CT or CTA or "computed tomography angiography" or "CT angiography")).mp. 10101
8 CTCA.mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word] 815
9 coronary CT angiography.mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word] 3068
10 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 59817
11 Coronary Artery Disease/ 83244
12 Coronary artery disease?.mp. 159194
13 Coronary atheroscleros?s.mp. 9648
14 Coronary arterioscleros?s.mp. 776
15 Coronary plaque.mp. 2859
16 CAD.mp. 60262
17 Coronary Stenosis/ 14217
18 Coronary Stenosis.mp. [mp=title, book title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms, population supplementary concept word, anatomy supplementary concept word] 18536
19 Coronary atherosclero*.mp. 11493
20 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 199639
21 Plaque, Atherosclerotic/ 15309
22 plaque morpholog*.mp. 2176
23 (plaque composition* or plaque character*).mp. 3664
24 ("plaque morphology" or "plaque burden" or "plaque composition" or "necrotic core" or "fibroatheroma" or "plaque volume" or "plaque remodelling" or "non-calcified plaque" or "low-attenuation plaque" or "high-risk plaque" or "napkin ring" or "calcified plaque" or "spotty calcification" or "1-vessel" or "2-vessel" or "3-vessel" or "obstructive plaque" or "nonobstructive plaque" or "non-obstructive plaque" or "noncalcified plaque").mp. 13709
25 21 or 22 or 23 or 24 25803
26 prognosis/ or treatment outcome/ or Disease Progression/ or cardiovascular risk/ 2012446
27 disease natural history.mp. 275
28 prognosis.mp. 1058137
29 treatment outcome*.mp. 1327387

30 ("prognosis" or "disease progression" or "natural history" or "plaque progression" or "clinical outcomes" or "major adverse cardiac events" or MACE or "cardiovascular risk" or "event prediction" or "future risk" or "adverse outcomes" or "mortality" or "myocardial infarction" or "acute coronary syndrome" or "ACS" or "revascularizations" or "cardiac death" or "death").mp. 3801698
31 26 or 27 or 28 or 29 or 30 4740025
32 10 and 20 and 25 and 31 1348
33 limit 32 to humans 1199
34 case reports.pt. 2504632
35 comment.pt. 1056143
36 editorial.pt. 736308
37 letter.pt. 1309801
38 or/34-37 4625512
39 33 not 38 1124

Embase <1974 to 2025 September 23>

1 computed tomographic angiography/ 106631
2 Comput* tomograph* angio*.mp. 114013
3 CT angiogra*.mp. 37580
4 Coronary computed tomography angiogra*.mp. 7079
5 CCTA.mp. 8408
6 CTA.mp. 33251
7 CTCA.mp. 2225
8 (coronary adj3 (CT or CTA or "computed tomography angiography" or "CT angiography")).mp. 19889
9 coronary CT angiography.mp. 5935
10 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 143253
11 Coronary Artery Disease/ 268702
12 Coronary artery disease?.mp. 324607
13 Coronary atherosclerosis.mp. 49060
14 Coronary arteriosclerosis.mp. 927
15 Coronary plaque.mp. 5528
16 CAD.mp. 105300
17 Coronary Stenosis/ 4911
18 Coronary Stenosis.mp. 14430
19 Coronary atherosclero*.mp. 50715
20 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 406429
21 Plaque, Atherosclerotic/ 43436
22 plaque morpholog*.mp. 3429
23 plaque composition*.mp. 2912
24 ("plaque morphology" or "plaque burden" or "plaque composition" or "necrotic core" or "fibroatheroma" or "plaque volume" or "plaque remodelling" or "non-calcified plaque" or "low-attenuation plaque" or "high-risk plaque" or "napkin ring" or "calcified plaque" or "spotty calcification" or "1-vessel" or "2-vessel" or "3-vessel" or "obstructive plaque" or "nonobstructive plaque" or "non-obstructive plaque" or "noncalcified plaque" or "high risk plaque" or "plaque remodeling" or "LAPV").mp. 24799
25 atherosclerotic plaque/ 43436
26 plaque character*.mp.3986
27 21 or 22 or 23 or 24 or 25 or 26 62814
28 prognosis/ or treatment outcome/ 1748126
29 disease natural history.mp. 505
30 prognosis.mp. 1400405
31 treatment outcome*.mp. 1138075
32 disease course/ 518484
33 cardiovascular risk/ 267405
34 ("prognosis" or "disease progression" or "natural history" or "plaque progression" or "clinical outcomes" or "major adverse cardiac events" or MACE or "cardiovascular risk" or "event prediction" or "future risk" or "adverse outcomes" or "mortality" or "myocardial infarction" or "acute coronary syndrome" or "ACS" or "revascularizations" or "cardiac death" or "death").mp. 5522570
35 28 or 29 or 30 or 31 or 32 or 33 or 34 6663205
36 10 and 20 and 27 and 35 3138
37 limit 36 to humans 3047
38 editorial.pt. 848467
39 letter.pt. 1378409

40	Conference abstract.pt.	5615788
41	38 or 39 or 40	7842664
42	37 not 41	1868

Ovid Emcare <1995 to 2025 Week 38>

1 computed tomographic angiography/ 38889
2 Comput* tomograph* angio*.mp. 40343
3 CT angiogra*.mp. 9588
4 Coronary computed tomography angiogra*.mp. 2214
5 CCTA.mp. 2018
6 CTA.mp. 6853
7 CTCA.mp. 406
8 (coronary adj3 (CT or CTA or "computed tomography angiography" or "CT angiography")).mp. 5324
9 coronary CT angiography.mp. 1848
10 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 43606
11 Coronary Artery Disease/ 67895
12 Coronary artery disease?.mp. 78014
13 Coronary atherosclerosis.mp. 4839
14 Coronary arteriosclerosis.mp. 79
15 Coronary plaque.mp. 1194
16 CAD.mp. 23224
17 Coronary Stenosis/ 1102
18 Coronary Stenosis.mp. 3058
19 Coronary atherosclero*.mp. 5445
20 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 93872
21 Plaque, Atherosclerotic/ 8173
22 plaque morpholog*.mp. 651
23 plaque composition*.mp. 698
24 ("plaque morphology" or "plaque burden" or "plaque composition" or "necrotic core" or "fibroatheroma" or "plaque volume" or "plaque remodelling" or "non-calcified plaque" or "low-attenuation plaque" or "high-risk plaque" or "napkin ring" or "calcified plaque" or "spotty calcification" or "1-vessel" or "2-vessel" or "3-vessel" or "obstructive plaque" or "nonobstructive plaque" or "non-obstructive plaque" or "noncalcified plaque" or "high risk plaque" or "plaque remodeling" or "LAPV").mp. 5167
25 atherosclerotic plaque/ 10224
26 plaque character*.mp.945
27 21 or 22 or 23 or 24 or 25 or 26 13892
28 prognosis/ or treatment outcome/ 427010
29 disease natural history.mp. 93
30 prognosis.mp. 275568
31 treatment outcome*.mp. 312324
32 disease course/ 117724
33 cardiovascular risk/ 88058
34 ("prognosis" or "disease progression" or "natural history" or "plaque progression" or "clinical outcomes" or "major adverse cardiac events" or MACE or "cardiovascular risk" or "event prediction" or "future risk" or "adverse outcomes" or "mortality" or "myocardial infarction" or "acute coronary syndrome" or "ACS" or "revascularizations" or "cardiac death" or "death").mp. 1221934
35 28 or 29 or 30 or 31 or 32 or 33 or 34 1524645
36 10 and 20 and 27 and 35 836
37 limit 36 to humans 829
38 editorial.pt. 365297
39 letter.pt. 452619

40	Conference abstract.pt.	352
41	38 or 39 or 40	818268
42	37 not 41	736

Web of Science September 29th, 2025

Line 1: "Computed Tomography Angiography" OR "Comput* tomograph* angio*" OR "CT angiogra*" OR "Coronary computed tomography angiogra*" OR "CCTA" OR "CTA" OR “CTCA” OR "coronary CT angiography"

Line 2: "Coronary Artery Disease" OR "Coronary artery disease?" OR "Coronary atherosclero*" OR "Coronary arterioscleros?s" OR "Coronary plaque" OR "CAD” OR "coronary stenosis"

Line 3: “plaque” OR “plaque morpholog*” OR “plaque composition*” OR “atherosclerotic plaque” OR "plaque burden" OR “plaque characteristics” OR "plaque burden" OR "plaque composition" OR "necrotic core" OR "fibroatheroma" OR "plaque volume" OR "plaque remodelling" OR "non-calcified plaque" OR "low-attenuation plaque" OR "high-risk plaque" OR "napkin ring" OR "calcified plaque" OR "spotty calcification" OR "1-vessel" OR "2-vessel" OR "3-vessel" OR "obstructive plaque" OR "nonobstructive plaque" OR "non-obstructive plaque" OR "noncalcified plaque" OR "high risk plaque" OR "plaque remodeling" OR "LAPV"

Line 4: "prognosis" OR "disease natural history" OR "treatment outcome*" OR "disease progression" OR "natural history" OR "plaque progression" OR "clinical outcomes" OR "major adverse cardiac events" OR “MACE” OR "cardiovascular risk" OR "event prediction" OR "future risk" OR "adverse outcomes" OR "mortality" OR "myocardial infarction" OR "acute coronary syndrome" OR "ACS" OR "revascularizations" OR "cardiac death" OR "death" OR “MI”

Exclude: meeting abstract, letter, editorial, proceeding paper, book chapter, early access

Results: 1623

Total results for all databases after duplicates removed: **2721**

Supplementary Material 2: PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Completed
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Pages 1-2
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 2
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 2
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 2
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Suppl. Material 1
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 2
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Pages 2-3
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Pages 2-3
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Pages 2-3
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Page 3
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Pages 2-3
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Page 3
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Pages 2-3
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Page 3
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Page 3
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Page 3
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 3

Supplementary Material 2: PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 19 (formal GRADE assessment not performed)
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Pages 4-5
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Page 5
Study characteristics	17	Cite each included study and present its characteristics.	Pages 4, 6-12
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Page 16 + Suppl. Material 8
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Pages 6-17
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Pages 6-12, 16 + Suppl. Material 8
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Pages 4-5, 9, 15-17
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Pages 15-16, 18-19
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Pages 9, 15-16 + Suppl. Material 7
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Page 5 + Suppl. Material 6
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Not assessed
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Pages 16-18
	23b	Discuss any limitations of the evidence included in the review.	Pages 18-19
	23c	Discuss any limitations of the review processes used.	Page 19

Supplementary Material 2: PRISMA 2020 Checklist

Section and Topic	Item #	Checklist item	Location where item is reported
	23d	Discuss implications of the results for practice, policy, and future research.	Page 18
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Page 2
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Page 2
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	N/A
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Page 20
Competing interests	26	Declare any competing interests of review authors.	Page 20
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Page 20 + Suppl. Materials

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: http://www.prisma-statement.org/

Supplementary Material 3: Individual Hazard Ratios and Adjustment Factors

Author, Year	Plaque Feature	Univariate HR (CI)	Multivariate HR (CI)	Multivariate HR Adjustment Factors
Ferencik 2018 [26]	≥ 1 High-Risk Plaque Features		1.72 (1.13–2.62)	adjustment for SS and ASCVD risk score
Fujimoto, 2016 [64]	≥ 1 High-Risk Plaque Features		2.46 (0.99-6.14)	Adjusting for gender, diabetes, and their product term
Kawai 2014 [66]	≥ 1 High-Risk Plaque Features		2.64 (1.59–4.35)	adjustment for gender, age, and history of ACS
Kiriyama 2018 [31]	≥ 1 High-Risk Plaque Features		8.02 (1.793–35.878)	Presence of myocardial ischemia (SDS ≥ 2), Three-vessel disease (3VD), Age, Sex, Diabetes mellitus, Hypertension, Hyperlipidemia, Smoking status, Agatston calcium score, Previous myocardial infarction
Maclean 2022 [69]	≥ 1 High-Risk Plaque Features	5.4 (1.6–18.5)	3.67 (1.6–8.3)	Stepdown multivariate
Motoyama 2009 [39]	≥ 1 High-Risk Plaque Features		22.79 (6.91–75.17)	age, hypertension, hyperlipidemia, and prior MI
Motoyama 2013 [72]	≥ 1 High-Risk Plaque Features		4.75 (1.35–16.05)	
Motoyama 2015 [39]	≥ 1 High-Risk Plaque Features		8.24 (5.26–12.96)	age, dyslipidemia, BMI >25, and previous ACS
Munnur 2022 [39]	≥ 1 High-Risk Plaque Features		14.99 (7.47–30.06)	
Oeing 2023 [43]	≥ 1 High-Risk Plaque Features		0.606 (0.259, 1.417)	Age, sex, diabetes, hypertension, smoking, CAD Stage, HRP
Otsuka, 2014 [45]	≥ 1 High-Risk Plaque Features		9.4 (2.66–33.4)	
Sato, 2024 [49]	≥ 1 High-Risk Plaque Features	5.72 (2.33-14.03)		
Senoner 2020 [50]	≥ 1 High-Risk Plaque Features		1.83 (1.48–2.27)	age ≥ 75 y, cigarette smoking, art. HT, diabetes
Tomizawa 2018 [79]	≥ 1 High-Risk Plaque Features		2.06 (1.27–3.47)	
Tommasino 2024 [53]	≥ 1 High-Risk Plaque Features	2.30 (1.45 - 3.64)		
Tzolos, 2022 [83]	≥ 1 High-Risk Plaque Features		0.95 (0.41-2.19)	Agatston calcium score, obstructive disease, and cardiovascular risk score
Yamamoto 2021 [85]	≥ 1 High-Risk Plaque Features		1.95 (1.13–3.34)	age, sex, hypertension, dyslipidemia, diabetes mellitus, smoking, obstructive stenosis, PCPs, and log2 (CACS þ1)
Andreini 2020 [19]	≥ 2 High-Risk Plaque Features	8.11 (3.45–19.03)		
Conte 2017 [61]	≥ 2 High-Risk Plaque Features		5.50 (2.20–13.74)	Adjusted for age and current smoking status
Drissen 2020 [62]	≥ 2 High-Risk Plaque Features		1.93 (1.00–3.71)	
Ferencik 2018 [26]	≥ 2 High-Risk Plaque Features		1.71 (1.00–2.92)	adjustment for SS and ASCVD risk score
Kiriyama 2018 [31]	≥ 2 High-Risk Plaque Features		8.02	
Lee 2018 [32]	≥ 2 High-Risk Plaque Features		1.534 (1.3-1.817)	Age, Sex, Hypertension, Diabetes, Hyperlipidemia, Smoking, Statin Use, Family History of CAD, SIS, Baseline Plaque Burden (PB)
Munnur 2022 [39]	≥ 2 High-Risk Plaque Features	14.4 (7.46-26.44)		
Takamura, 2017 [77]	≥ 2 High-Risk Plaque Features		11.27 (1.24-102.12)	coronary artery calcium score, CT-HRP, CT-HRP with spotty calc, napkin-ring sign

Tesche 2023 [78]	≥ 2 High-Risk Plaque Features	9.24 (2.39-35.72)		
Yamamoto 2013 [55]	≥ 2 High-Risk Plaque Features		11.20 (3.71-36.70)	
Yamamoto 2018 [56]	≥ 2 High-Risk Plaque Features		1.98 (1.09-3.60)	stepwise
Yamamoto 2021 [85]	≥ 2 High-Risk Plaque Features		1.95 (1.13–3.34)	
Yang 2026 [80]	≥ 2 High-Risk Plaque Features		2.30 (1.62–3.27)	
Yu 2021 [58]	≥ 2 High-Risk Plaque Features	2.955 (1.005-8.688)		
Andreini 2012 [6]	1-vessel disease		10.62 (5.94–18.96)	Corrected for baseline variables
Chow 2021 [24]	1-vessel disease		3.19 (1.96–5.20)	Clinical risk factors
Feuchtner 2017 [4]	1-vessel disease	2.58 (1.26-5.3)		
Fujimto 2015 [64]	1-vessel disease		5.31 (2.09, 13.51)	FRS + # Vessels + Plaque Features
Hadamitzky 2013 [28]	1-vessel disease		2.60 (0.97-7.00)	correction for clinical risk was done by using a multivariable model including the Morise risk score
Hou 2012 [30]	1-vessel disease	17.83 (10.43–30.46)		
Mortensen 2020 [71]	1-vessel disease		1.6 (1.3–1.9)	*Adjusted for age and sex.
Nance 2012 [74]	1-vessel disease		1.42	
Sozzi 2011 [51]	1-vessel disease		3.29 (0.16–69.71)	Age, gender, hypertension, diabetes mellitus, hyperlipidemia, smoking, family history of coronary disease, and obesity
Andreini 2012 [6]	2-vessel disease		24.92 (13.12–47.33)	Corrected for baseline variables
Chow 2021 [24]	2-vessel disease		4.66 (2.78–8.27)	Clinical risk factors
Feuchtner 2017 [4]	2-vessel disease	4.54 (2.3-8.8)		
Hadamitzky 2013 [28]	2-vessel disease		1.95 (0.47-8.02)	correction for clinical risk was done by using a multivariable model including the Morise risk score
Hou 2012 [30]	2-vessel disease	20.59 (11.32–37.45)		
Mortensen 2020 [71]	2-vessel disease		1.9 (1.5–2.4)	*Adjusted for age and sex.
Sozzi 2011 [51]	2-vessel disease		17.44 (1.17–261.1)	
Andreini 2012 [6]	3-vessel disease		26.05 (14.29–47.47)	Corrected for baseline variables
Chow 2021 [24]	3-vessel disease		7.47 (4.38–12.74)	Clinical risk factors
Feuchtner 2017 [4]	3-vessel disease	8.34 (4.04-17)		
Hadamitzky 2013 [28]	3-vessel disease		6.66 (1.81-24.5)	correction for clinical risk was done by using a multivariable model including the Morise risk score
Hou 2012 [30]	3-vessel disease	56.81 (33.95–95.06)		
Kiriyama 2018 [31]	3-vessel disease		4.981	
Mortensen 2020 [71]	3-vessel disease		2.9 (2.2–3.9)	*Adjusted for age and sex.

Sozzi 2011 [51]	3-vessel disease		14.13 (1.23–162.9)	
Ates 2021 [7]	Calcified		2.46 (1.12-5.41)	Other Mortality Related Factors That Includes Age, Gender, Smoking Status, Presence of Hypertension, and Diabetes.
Chow 2010 [23]	Calcified		1.15 (1.01–1.31)	CAD LVEF noncalcific and mixed plaque
Dundas 2024 [63]	Calcified		1.896 (0.794–4.529)	sex, age, cardiac risk factors, stenosis, FFRCT, and delta-FFRCT
Finck 2020 [5]	Calcified		1.17 (1.00–1.36)	corrected for Morise 1 CAD severity
Gu 2018 [65]	Calcified		1.094 (0.728–1.642)	risk-adjusted predictors of clinical factors
Hadamitzky 2011 [27]	Calcified		1.4 (1.3-1.5)	
Hadamitzky 2013 [28]	Calcified		1.40 (1.09-1.80)	correction for clinical risk was done by using a multivariable model including the Morise risk score.
Lee 2016 [67]	Calcified		1.23 (0.75–2.02)	clinical risk factors and SPECT findings,
Meah 2022 [82]	Calcified		1.18 (0.87-1.60)	
Min, 2010 [35]	Calcified	7.57 (1.69–34.5)		
Nance 2012 [74]	Calcified	47.88	26.45	corrected for age, sex, hypertension, hypercholesterolemia, and smoking and CAC score
Petretta 2012 [46]	Calcified	1.21 (1.10–1.33)		
Sozzi 2011 [51]	Calcified	2.699 (0.8–9.06)		
Tzolos, 2022 [83]	Calcified		1.55 (0.92-2.63)	individual quantitative plaque measure, Agatston calcium score, obstructive disease, and cardiovascular risk score.
Yamamoto 2013 [55]	Calcified	1.96 (0.62-8.59)		
Yamamoto 2018 [56]	Calcified	2.04 (1.02-4.08)		
Yorgun 2013 [57]	Calcified	1.07 (0.89–1.29)		
Andreini 2020 [19]	Low-attenuation plaque (LAPV)	17.00 (5.78–50.02)		
Conte 2017 [61]	Low-attenuation plaque (LAPV)		6.47 (1.88–22.32)	age and current smoking
Dundas 2024 [63]	Low-attenuation plaque (LAPV)		3.119 (1.390–7.000)	
Feuchtner 2017 [4]	Low-attenuation plaque (LAPV)	29.5 (15.9-54.5)	4.5 (1.4-14.8)	
Finck 2020 [5]	Low-attenuation plaque (LAPV)		1.38 (0.56–3.40)	Morise risk score (clinical risk score), CAD severity (stenosis degree by CCTA)
Meah 2022 [82]	Low-attenuation plaque (LAPV)		2.13 (1.13-3.47)	
Munnur 2022 [39]	Low-attenuation plaque (LAPV)	16.7 (9.1-30.5)		
Nadjiri 2016 [41]	Low-attenuation plaque (LAPV)	1.1 [1.1; 1.2]	1.06 [1.01,1.1]	Morise Score and extent of CAD (normal, nonobstuctive, 1 to 3 VD)
Nakanishi 2014 [42]	Low-attenuation plaque (LAPV)		1.82 (1.04-3.09)	PR, NRS, EAT changes, clinical factors (previous PCI/revascularization, LDL-C levels and changes).
Pergola, 2022 [76]	Low-attenuation plaque (LAPV)	1.12		BMI, dyslipidemia, diabetes, smoking, hypertension
Senoner 2020 [50]	Low-attenuation plaque (LAPV)		4.00 (1.52–10.52)	Age ≥75 years, Cigarette smoking, Arterial hypertension, Diabetes mellitus

Tesche 2023 [78]	Low-attenuation plaque (LAPV)	5.24 (1.52-18.10)	4.15 (1.04-16.64)	Diabetes status (corrected across all models), Segment stenosis score, Segment involvement score, Low-attenuation plaque, Positive remodeling
Tzolos, 2022 [83]	Low-attenuation plaque (LAPV)		1.80 (1.16-2.80)	
Yamamoto 2013 [55]	Low-attenuation plaque (LAPV)		8.23 (2.41-37.70)	
Yang 2026 [80]	Low-attenuation plaque (LAPV)		2.66(1.94–3.64)	
Ates 2021 [7]	Mixed plaque (Partially calcified)		1.33 (0.52-3.39)	Age, gender, smoking, hypertension, diabetes
Chow 2010 [23]	Mixed plaque (Partially calcified)		1.13 (1.00–1.27)	CAD, LVEF, mixed plaque
Finck 2020 [5]	Mixed plaque (Partially calcified)		1.05 (0.92–1.21)	Morise score (clinical risk), CAD severity
Hadamitzky 2011 [27]	Mixed plaque (Partially calcified)		1.6 (1.3-1.9)	Morise clinical score + calcium score
Hadamitzky 2013 [28]	Mixed plaque (Partially calcified)		0.98 (0.78-1.22)	Morise clinical risk score
Hou 2012 [30]	Mixed plaque (Partially calcified)	4.23 (1.58–7.57)		
Min, 2010 [35]	Mixed plaque (Partially calcified)	14.7 (4.05-52.6)		
Nance 2012 [74]	Mixed plaque (Partially calcified)		55.76	Age, sex, hypertension, hypercholesterolemia, smoking
Sozzi 2011 [51]	Mixed plaque (Partially calcified)		6.04 (1.32–18.7)	Age, sex, HTN, diabetes, hyperlipidemia, smoking, family history, obesity
Yamamoto 2013 [55]	Mixed plaque (Partially calcified)	2.64 (0.95-7.87)	1.54 (0.50-5.00)	Age, sex, >50% stenosis
Yamamoto 2018 [56]	Mixed plaque (Partially calcified)	2.39 (1.32-4.34)		
Yamamoto 2021 [85]	Mixed plaque (Partially calcified)		1.17 (0.66–2.09)	Age, sex, HTN, HLD, DM, smoking, obstructive stenosis, CACS
Yorgun 2013 [57]	Mixed plaque (Partially calcified)	0.96 (0.60–1.52)		
Ates 2021 [7]	moderate stenosis (50-70%)		1.55 (0.65-3.67)	Age, Gender, Smoking status, Hypertension, Diabetes
De Azevedo 2011 [25]	moderate stenosis (50-70%)		9.92 (1.69–58.44)	Adjusted for age, diabetes and coronary artery calcium score
Otsuka, 2014 [45]	moderate stenosis (50-70%)		1.9 (0.54–6.94)	HTN, vessel count, vulnerability
Yorgun 2013 [57]	moderate stenosis (50-70%)		3.28 (0.89–11.99)	severity of luminal stenosis, morphology and extent
Andreini 2020 [19]	Napkin-ring sign (NRS)	9.29 (3.98–21.65)		
Conte 2017 [61]	Napkin-ring sign (NRS)	3.79 (0.52–27.85)	12.52 (1.51–103.90)	
Feuchtner 2017 [4]	Napkin-ring sign (NRS)		7.0 (2-13.6)	age, gender, arterial hypertension, nicotine, positive family history, BMI, dyslipidaemia, diabetes and the CTA findings (stenosis severity and plaque type).
Finck 2020 [5]	Napkin-ring sign (NRS)		2.36 (1.32–4.22)	Morise + CAD severity
Nadjiri 2016 [41]	Napkin-ring sign (NRS)		1.4 (0.6-2.9)	Morise score + CAD extent
Nakanishi 2014 [42]	Napkin-ring sign (NRS)		3.64 (1.72-7.81)	Presence of NRS + Previous revascularization + LDL-C baseline/change
Senoner 2020 [50]	Napkin-ring sign (NRS)		4.11 (1.77–9.52)	

Takamura, 2017 [77]	Napkin-ring sign (NRS)		1.51 (0.09-26.03)	coronary artery calcium score, CT-HRP, CT-HRP with spotty calc, napkin-ring sign
Tesche 2023 [78]	Napkin-ring sign (NRS)	3.72 (1.05-13.17)		
Williams 2019 [84]	Napkin-ring sign (NRS)		1.16 (0.28-4.79)	
Yamamoto 2018 [56]	Napkin-ring sign (NRS)	2.22 (1.11-4.44)		
Ates 2021 [7]	Non-Calcified		1.21 (0.57-2.59)	
Chow 2010 [23]	Non-Calcified		1.11 (0.93-1.33)	CAD, LVEF, isolated noncalcific plaque
Dundas 2024 [63]	Non-Calcified		1.732 (0.774–3.876)	Age, sex, HTN, smoking, DM2, HLD, stenosis, nadir FFRCT, delta-FFRCT
Finck 2020 [5]	Non-Calcified		0.94 (0.82–1.07)	
Hadamitzky 2011 [27]	Non-Calcified		1.2 (1.1-1.4)	
Hadamitzky 2013 [28]	Non-Calcified		1.12 (1.04-1.21)	
Hou 2012 [30]	Non-Calcified	3.01 (1.34–4.24)		
Matsumoto, 2007 [34]	Non-Calcified		2.53 (1.08–5.92)	Previous MI
Meah 2022 [82]	Non-Calcified		10.7 (2.44-47.3)	
Mordi 2016 [37]	Non-Calcified	0.9 (0.43–2.10)		Age ≥60, typical/atypical angina, obstructive plaque, Number of segments with noncalcified plaques, Number of segments with mixed plaques, Number of segments with calcified plaques
Nadjiri 2016 [41]	Non-Calcified		1.1 [1.01,1.2]	Morise Score + CAD extent
Nance 2012 [74]	Non-Calcified		57.64	Age, sex, HTN, hyperlipidemia, smoking, Agatston score
Oeing 2023 [43]	Non-Calcified		0.910 (0.556, 1.491)	Morise score, CACS, high-risk plaque, SPECT SSS, CHD staging
Sozzi 2011 [51]	Non-Calcified		5.1 (1.05–16.8)	Age, gender, HTN, DM, HLD, smoking, family hx, obesity
Tzolos, 2022 [83]	Non-Calcified		1.30 (0.96-1.75)	Risk score, calcium score, stenosis, LAP, high-risk plaque, PCAT
Yamamoto 2013 [55]	Non-Calcified	2.97 (0.94-13.0)	1.27 (0.39-4.46)	
Yamamoto 2018 [56]	Non-Calcified	0.99 (0.55-1.77)		
Yorgun 2013 [57]	Non-Calcified	1.13 (0.97–1.31)		
Aldrovandi 2012 [59]	Non-Obstructive (<50%)	0.39 (0.13-1.17)		
Ates 2021 [7]	Non-Obstructive (<50%)		1.18 (0.48-2.88)	age, gender, smoking status, presence of hypertension, and diabetes
Bitttencourt 2014 [60]	Non-Obstructive (<50%)		1.6 (0.9–3.0)	clinical pretest probability and the presence/severity of CAD;
Cheruvu 2016 [22]	Non-Obstructive (<50%)		2.20 (1.31-3.67)	Adjusted for age, sex, and family history
Hadamitzky 2013 [28]	Non-Obstructive (<50%)		2.46 (1.02-5.90)	Morise Clinical Score
Han, 2022 [29]	Non-Obstructive (<50%)	2.24 (1.79–2.81)	1.75 (1.36–2.25)	Age, gender, BMI, hypertension, diabetes, dyslipidaemia, smoking, family history, extensive CAD

Maclean 2023 [81]	Non-Obstructive (<50%)		1.02 (0.6–1.8)	cardiovascular risk score
Mortensen 2020 [71]	Non-Obstructive (<50%)		1.3 (1.1–1.6)	Age, sex, smoking, diabetes, CCI, LDL, SBP, CAC score, post-CTA statin & aspirin use
Plank, 2014 [47]	Non-Obstructive (<50%)		2.87 (0.69-11.93)	age, diabetes, CCS.
Yorgun 2013 [57]	Non-Obstructive (<50%)	4.73 (1.36–16.47)	4.77 (1.36–16.74)	Severity of stenosis (≤50%, 50–70%) Extent of coronary atherosclerosis (number of plaques)
Aldrovandi 2009 [18]	Obstructive ≥50%		34.9 (10.15-120.58)	Obstructive CAD
Aldrovandi 2012 [6]	Obstructive ≥50%		9.87 (3.29-29.57)	Obstructive CAD, Diabetes
Andreini 2012 [6]	Obstructive ≥50%		5.49 (3.46–8.70)	Corrected for baseline variables
Bitttencourt 2014 [60]	Obstructive ≥50%		3.7 (2.0–6.6)	Clinical pretest probability of CAD (calculated via the Morise score, incorporating age, sex, symptoms, and risk factors) and presence/severity of CAD
Chan, 2024 [21]	Obstructive ≥50%		1.71 (1.55–1.90)	age, sex, cardiovascular risk factors (ie, diabetes, hypertension, hyperlipidaemia, smoking status), medications past myocardial infarction, and history of revascularisation (PCI or CABG) and CAD severity (CAD-RADS 2.0)
Cheruvu 2016 [22]	Obstructive ≥50%		6.63 (3.91-11.26)	Adjusted for age, sex, and family history
De Azevedo 2011 [25]	Obstructive ≥50%		3.15 (1.26–7.89)	age, diabetes status, and coronary artery calcium score
Drissen 2020 [62]	Obstructive ≥50%		3.01 (1.06–8.54)	age, diabetes, lipids, CAC, HRPs, myocardial blood flow (MBF)
Feuchtner 2017 [4]	Obstructive ≥50%	8.61 (4.2-17.5)		age, gender, hypertension, smoking, family history, BMI, dyslipidemia, diabetes, stenosis severity, plaque type
Hadamitzky 2011 [27]	Obstructive ≥50%	13.5 (6.7-27.2)		
Lee 2016 [67]	Obstructive ≥50%		5.18 (2.58–10.49)	FRS, antiplatelet agent, long-acting nitrate, statin after 3 months from the last imaging study and presence of PD on SPECT
Lima, 2023 [33]	Obstructive ≥50%	3.58 (1.96–6.51)		
Maclean 2023 [81]	Obstructive ≥50%		2.7 (1.6–4.8)	10-year cardiovascular risk score (ASSIGN risk score)
Miszalski-Jamka 2012 [36]	Obstructive ≥50%	2.90 (1.1–7.63)		
Munnur 2022 [39]	Obstructive ≥50%	6.3 (3.5-11.4)		
Nance 2012 [74]	Obstructive ≥50%	5.34	1.81	Age, Sex, Hypertension, Hypercholesterolemia, Smoking
Otsuka, 2022 [75]	Obstructive ≥50%	6.58 (1.742–24.765)		
Pundziute, 2007 [48]	Obstructive ≥50%		28 (3.3–239)	Age, MSCT coronary plaque variables (e.g., number of plaques, obstructive lesions, mixed plaques)
Sato, 2024 [49]	Obstructive ≥50%	24.64 (3.28-184.1)	5.42 (0.50-58.01)	CT-FFRCT, HRP (high-risk plaque features), Obstructive stenosis, CACS (calcium score)
Sozzi 2011 [51]	Obstructive ≥50%		8.28 (2.48–27.64)	Adjusted for age, gender, hypertension, diabetes mellitus, hyperlipidemia, smoking, family history of coronary disease, and obesit
Tesche 2023 [78]	Obstructive ≥50%	14.64 (3.11-68.96)		
Tommasino 2024 [53]	Obstructive ≥50%		2.50 (1.50 to 4.10)	Diabetes, CKD, HRP, LMBA > 80°, CAC

van Werkhoven, 2009 [54]	Obstructive ≥50%	3.9 (1.7–9.3)	3.6 (1.4–9.4)	
Yamamoto 2013 [55]	Obstructive ≥50%	7.27 (2.62-21.7)		
Yamamoto 2018 [56]	Obstructive ≥50%		2.91 (1.51-5.60)	age, statin treatment after CCTA, high-risk plaques (≥2 characteristics), and obstructive stenosis
Benetos 2020 [20]	Obstructive ≥70%	5.51 (2.86-10.60)		
De Azevedo 2011 [25]	Obstructive ≥70%		13.29 (2.47–71.32)	age, diabetes status, CACS
Feuchtner 2017 [4]	Obstructive ≥70%	5.85 (3.11-11.02)		
Min, 2010 [35]	Obstructive ≥70%	256.2, (20.8–3,153)	48.6(5.5–432)	age, gender and cardiac risk factors
Plank, 2014 [47]	Obstructive ≥70%	3.40 (0.85 to 13.51)		
Suruga 2021 [52]	Obstructive ≥70%		4.22 (1.7-10.46)	age, male sex, hypertension, diabetes mellitus, statin use, LDL-C, and one of the following factors; log-transformed oxHDL, apoAI, HDL-C, and log-transformed oxHDL/apoAI.
Benetos 2020 [20]	Positive remodelling (PR)	3.51 (1.78-6.93)		
Conte 2017 [61]	Positive remodelling (PR)		2.39 (1.11–4.92)	"Adjusted for significant clinical variables" and adjusted for age and current smoke.
Feuchtner 2017 [4]	Positive remodelling (PR)	2.8 (1.09-7.4)		
Munnur 2022 [39]	Positive remodelling (PR)	14.5 (7.3-28.7)		
Nakanishi 2014 [42]	Positive remodelling (PR)		1.24 (0.73-2.03)	Adjusted for baseline cardiovascular risk factors.
Senoner 2020 [50]	Positive remodelling (PR)		0.56 (0.18–1.75)	multivariate models were adjusted for the following significant values as calculated in univariate proportional hazards risk model: age ≥75 years, cigarette smoking, arterial hypertension and diabetes.
Tesche 2023 [78]	Positive remodelling (PR)	3.35 (0.97-11.58)		
Williams 2019 [84]	Positive remodelling (PR)		3.05 (1.63, 5.71)	
Yamamoto 2013 [55]	Positive remodelling (PR)		8.30 (2.83-26.70)	
Andreini 2020 [19]	Spotty calcification (SC)	10.40 (4.46–24.23)		
Conte 2017 [61]	Spotty calcification (SC)	0.78 (0.30–2.06)		
Feuchtner 2017 [4]	Spotty calcification (SC)		2.6 (1.1-6.5)	age, gender, arterial hypertension, nicotine, positive family history, BMI, dyslipidaemia, diabetesand the CTA findings (stenosis severity and plaque type).
Finck 2020 [5]	Spotty calcification (SC)		1.81 (1.04–3.13)	Corrected for Morise 1 CAD severity
Munnur 2022 [39]	Spotty calcification (SC)	5.4 (3-9.9)		
Nadjiri 2016 [41]	Spotty calcification (SC)		1.07 [0.5,2.2]	corrected for Morise Score and extent of CAD (normal, nonobstuctive, 1 to 3 VD)
Senoner 2020 [50]	Spotty calcification (SC)		1.40 (0.65–2.98)	age ≥75 years, cigarette smoking, arterial hypertension and diabetes.
Tesche 2023 [78]	Spotty calcification (SC)	12.42 (3.21-48.04)		

Williams 2019 [84]	Spotty calcification (SC)		0.83 (0.35, 1.97)	
Yamamoto 2013 [55]	Spotty calcification (SC)	3.74 (1.34-10.7)	2.41 (0.80-7.50)	adjusted with age, sex, and >50% stenosis
Yamamoto 2018 [56]	Spotty calcification (SC)	1.89 (1.07-3.33)		

Supplementary Material 4: Detailed CT Scanner Information from Included Studies

Study	Scanner (Manufacturer/ Model)	Slice Thickness / Collimation	kVp	mA	Reconstruction Algorithm	Contrast Protocol
Aldrovandi, 2009 [18]	Single-source 64-slice Somatom Sensation 64 Cardiac (Siemens, Forchheim, Germany)	64 × 0.6 mm collimation; reconstructed at 0.75 mm slice thickness with 0.5 mm increment	120 kV	900 mAs	Retrospective ECG-gated reconstruction; curved multiplanar reconstructions (MPR) and axial image analysis	100 mL Iomeron 400 (Bracco) at 4–6 mL/s via antecubital vein, followed by 50 mL saline chase; bolus tracking used; IV atenolol (5–10 mg) if HR >65 bpm; sublingual nitroglycerin 0.3 mg unless contraindicated
Aldrovandi, 2012 [59]	Single-source 64-slice Sensation 64 Cardiac (Siemens, Germany)	32 × 0.6 mm collimation; reconstructed at 0.75 mm slice thickness with 0.5 mm increment	120 kV	700–900 mAs	Retrospective ECG-gated reconstruction; axial images, curved multiplanar reconstructions (MPR), and cross-sectional imaging	100 mL Iomeron 400 (Bracco) at 4–5 mL/s via antecubital vein using a dual-head power injector, followed by 50 mL saline chaser; bolus tracking; IV atenolol (5–10 mg) if HR >65 bpm; sublingual nitroglycerin 0.3 mg unless contraindicated
Andrein, 2012 [6]	64-slice VCT (GE Medical Systems, Milwaukee, WI, USA)	64 × 0.625 mm collimation	NR	NR	ECG-gated dose modulation (40–80% of the R–R interval); volume rendering and multiplanar reconstruction (CardioQ3 package, Advantage Workstation v4.2)	80 mL Iomeron 400 mg I/mL at 5 mL/s, followed by 50 mL saline at 5 mL/s; bolus-tracking; IV metoprolol titrated up to 20 mg if HR >65 bpm
Andreini, 2020 [19]	≥64-slice CT scanners (multicenter; manufacturer/model NR)	NR	NR	NR	PlaqID (CardIQ Xpress 2.0, GE Healthcare) used for plaque analysis; acquisition reconstruction algorithm NR	NR
Ates, 2021 [7]	Dual-source 64-slice Somatom Definition (Siemens)	32 × 0.6 mm detector collimation; 64 × 0.6 mm acquisition; reconstructed at 0.75 mm slice thickness with 0.5 mm increment	120 kV	390 mAs/rotation	Retrospective ECG-gated reconstruction; reconstructions every 50 ms (kernel NR)	80 mL Omnipaque (Iohexol 350 mg I/mL) at 6 mL/s + 50 mL saline at 6 mL/s; bolus tracking; 18G right antecubital IV; 5 mg sublingual isosorbide dinitrate 2–4 min before scan
Benetos, 2020 [20]	64-slice LightSpeed VCT XT (GE Healthcare, Milwaukee, WI, USA)	64 × 0.625 mm	BMI-adapted (exact values NR)	BMI-adapted (exact values NR)	NR	75 ± 12 mL iodixanol (Visipaque 320, GE Healthcare)
Bittencourt et al., 2014 [60]	64-row CT scanners or newer	NR	NR	NR	Single-/multiphase reconstruction (kernel NR)	NR
Chan et al., 2024 [21]	NR (multicentre routine CCTA, 8 UK hospitals)	NR	NR	NR	NR	NR
Cheruvu et al., 2016 [22]	Various vendors; single- and dual-source CT scanners, ≥64-detector rows	NR	NR	NR	Multiplanar reconstruction (MPR) and maximum intensity projection (MIP) used for image interpretation; reconstruction kernel/algorithm NR	NR
Chow et al.,	GE Volume CT (GE Healthcare),	64 × 0.625 mm	120 kVp	400–800 mA with	Images reconstructed at 70%, 75%, and 80% of the	Triphasic protocol: timing bolus 15–25 mL contrast + 40

2010 [23]	64 × 0.625 mm detector collimation	collimation; reconstructed at 0.625 mm slice thickness (0.4 mm increment); additional 1.25 mm reconstructions for LV analysis		ECG tube-current modulation 200–275 mA	R-R interval; reconstruction kernel/iterative algorithm not specified	mL saline; scan with 100% contrast, then 40%/60% contrast-saline (50 mL), then 40 mL saline; contrast volume/rate individualized (5–9 mL/s)
Chow, 2021 [24]	GE Volume CT (GE Healthcare, Milwaukee, WI, USA)	64 × 0.625 mm collimation; reconstructed at 0.625 mm slice thickness with 0.625 mm (prospective) or 0.4 mm (retrospective) increment	100–120 kVp	400–800 mA; ECG tube-current modulation 200–275 mA (retrospective scans)	Prospective ECG-triggered or retrospective ECG-gated acquisition; iterative reconstruction used (kernel NR)	Tailored triphasic protocol: 100% contrast (40–170 mL), followed by 40%/60% contrast-saline (50 mL), then 40 mL saline; Visipaque 320 or Omnipaque 350; timing bolus method
Conte, 2017 [61]	64-slice VCT (GE Medical Systems, Milwaukee, WI, USA)	64 × 0.625 mm collimation	BMI-adapted (NR)	BMI-adapted (NR)	NR	80 mL Iomeron 400 mg/mL at 5 mL/s followed by 50 mL saline at 5 mL/s; bolus tracking
De Azevedo, 2011 [25]	Brilliance 64 (Philips Medical Systems, Best, The Netherlands)	64 × 0.625 mm collimation	120 kVp	800–1000 mAs	ECG-gated reconstruction; motion-free phase selection (kernel NR)	60–130 mL Xenetix 350 (Guerbet) followed by 30 mL saline; automatic bolus tracking
Driessen, 2020 [62]	Gemini TF 64 PET-CT (Philips) or 256-slice Brilliance iCT (Philips)	NR	NR	NR	Axial, multiplanar reformation (MPR), maximum intensity projection (MIP), and cross-sectional reconstructions	100 mL iobitridol (Xenetix 350); automatic bolus tracking in the descending thoracic aorta
Dundas, 2024 [63]	Various scanners across the multicenter ADVANCE registry (38 centers); scanner model not reported	NR	NR	NR	AI-enabled quantitative coronary plaque analysis (HeartFlow AI-QCPA); acquisition/reconstruction algorithm not reported	NR
Ferencik, 2018 [26]	Multiple scanners from Siemens, GE, Toshiba, and Philips (64-, 128-, 256-, 320-row and dual-source CT)	NR (multicenter study)	NR	NR	Retrospective ECG-gated or prospective ECG-triggered acquisition according to local protocols	NR
Feuchtner, 2017 [4]	Siemens Sensation 64 (64-slice) or Siemens Definition FLASH (128-slice dual-source)	64 × 1.5 mm (calcium score); 2 × 64 × 0.6 mm (Definition FLASH) or 64 × 0.6 mm; reconstructed at 0.75 mm slices (0.4 mm increment)	120 kV	NR	Medium-smooth kernel B26f; retrospective ECG gating (64-slice) or prospective ECG-triggering (dual-source), with retrospective gating for arrhythmias	Iopromide (Ultravist 370), 65–120 mL, 4–6 mL/s + 40 mL saline chaser; bolus tracking (100 HU threshold, ascending aorta)

Finck, 2020 [5]	Siemens 64-slice single-source CT (2004–2006) or Siemens 64-slice dual-source CT (2006–2007)	NR	NR	NR	Syngo Via workstation; plaque morphology analysis (scanner reconstruction algorithm not reported)	NR
Fujimoto, 2016 [64]	Toshiba Aquilion 64 (64-row) or Toshiba Aquilion ONE (320-row)	64-row: NR collimation; 320-row: 320 × 0.5 mm detector; Image reconstruction: half-image or segmental reconstruction	120 kV	64-row: 400–600 mA (BMI-adjusted); 320-row: tube current modulation according to body habitus	Half-image or segmental image reconstruction using the "R + absolute time" method	64-row: 60–80 mL iodinated contrast (300–370 mgI/mL), three-phase injection (contrast → contrast/saline → saline); 320-row: two-phase injection (contrast 10 s → saline 8 s), injection rate = body weight × 0.06 mL/s
Gu, 2018 [65]	Siemens SOMATOM Definition or SOMATOM Definition Flash (dual-source CT)	Collimation: 2 × 64 × 0.6 mm; Reconstruction thickness: 0.625 mm	100 or 120 kV	400–500 mAs	Images reconstructed at 0.625 mm section thickness	Iohexol (Omnipaque 350) or Iopromide (Ultravist 370), injected at 4–5 mL/s using a triple-phase injection protocol
Hadamitzky, 2011 [27]	Siemens CT systems: 16-slice, 64-slice single-source, and 64-slice dual-source (Siemens Medical Solutions, Erlangen, Germany)	NR	NR	NR (ECG-gated tube current modulation used)	Axial images plus multiplanar reformations; reconstruction algorithm NR	Bolus timing with 10–20 mL Iomeprol (Imeron 350) + 50 mL saline; then 80–140 mL contrast at 4–6 mL/s, followed by 50 mL saline chaser
Hadamitzky, 2013 [28]	Siemens Healthcare: 16-slice, 64-slice single-source, and 64-slice dual-source CT	Thin-slab MIP reconstructions: 5 mm thickness, 1 mm increment (detector collimation not reported)	NR	NR (patients with HR >60 bpm received IV metoprolol; ECG acquisition details referenced elsewhere)	Axial slices, multiplanar reformations, and 5-mm thin-slab maximum intensity projections (1-mm increment)	10–20 mL Iomeprol (Imeron 350) test bolus + 50 mL saline; then 80–140 mL contrast at 4–6 mL/s, followed by 50 mL saline chaser
Han et al., 2022 [29]	Multi-detector CT scanners (>64 detector rows); multicenter CONFIRM registry (manufacturer/model NR)					
Hou et al., 2012 [30]	GE LightSpeed VCT 64-row multidetector CT (GE Healthcare, Milwaukee, WI)	64 × 0.625 mm detector collimation	120 kVp	200–550 mA (ECG-modulated; 550 mA during	NR (analyzed on GE ADW4.3 workstation; reconstruction kernel not specified)	Test bolus 10 mL contrast + 20 mL saline at 5 mL/s; diagnostic scan with Iohexol 350 (Omnipaque 350) or Iopromide 370 (Ultravist 370) at 4–5.5 mL/s, weight-adjusted.

				40–80% RR interval, 200 mA otherwise)		
Hou 2012 [30]	GE LightSpeed VCT 64-row MDCT	64 × 0.625 mm	120	ECG-modulated 200–550	NR	Iohexol 350 or Iopromide 370; test bolus 10 mL + 20 mL saline; diagnostic injection 4–5.5 mL/s
Han 2022 [29]	Multidetector CT (>64 detector rows); multicenter CONFIRM registry	NR	NR	NR	NR	NR
Kiriyama 2018 [31]	LightSpeed VCT 64-slice MSCT (GE Medical Systems, USA)	64 × 1.25 mm collimation (non-contrast CAC scan); 0.625 mm reconstructed slice thickness with 0.625 mm increment	120 kVp	280–750 mA (ECG-modulated)	Standard soft-tissue reconstruction filter (GE); retrospective ECG-gated reconstruction with phase images reconstructed from 5–95% of the R–R interval in 5% increments	Iopamiron 370 (iopamidol), 0.8 mL/kg injected at 0.08 mL/kg/s, followed by 20 mL saline flush; bolus tracking (ascending aorta, trigger >200 HU); oral metoprolol 50–100 mg or IV landiolol 0.125 mg/kg if needed
Lee 2016 [67]	Siemens SOMATOM Definition or Philips Brilliance 64 (64-detector row)	64 × 0.625 mm collimation; reconstructed at 3.0 mm (calcium score) and 0.6 mm (CCTA)	120	150 mAs (calcium scoring); 800 mAs (CCTA)	NR	Sublingual nitroglycerin before scan; β-blocker (metoprolol/esmolol) if HR ≥70 bpm; 60–80 mL Iomeron 400 at 4 mL/s followed by 50 mL saline; retrospective ECG-gating with dose modulation
Lee 2018 [32]	Multicenter registry; all scanners had ≥64 detector rows (site-specific scanners not reported)	NR	NR	NR	Semiautomated plaque analysis using QAngioCT Research Edition v2.1.9.1 (Medis)	Acquisition performed according to SCCT guidelines; site-specific contrast protocol NR
Lee 2022 [68]	64-channel GE Healthcare scanner or 128-channel dual-source Siemens scanner	NR	NR	NR	Histologically validated plaque analysis software vascuCAP (clinical edition)	Standardized heart-rate control with β-blockers and sublingual nitroglycerin according to SCCT guidelines; contrast volume/rate NR
Lima 2023 [33]	Aquilion 64-row and Aquilion ONE 320-row scanners, Canon Medical Systems	64 × 0.5 mm and 320 × 0.5 mm detector configurations	NR	NR	Axial prospective ECG-triggered acquisition; specific reconstruction kernel/iterative algorithm NR	50–70 mL iopamidol 370 mgI/mL at 4–5 mL/s; metoprolol and sublingual/fast-acting nitrates used for preparation
Maclean 2022 [69]	128-slice dual-source Siemens SOMATOM Definition Flash	Reconstructions using 0.75 mm collimation and 0.6 mm slice interval	80, 100, or 120 kVp, weight-adjusted	2–400 mAs, weight-adjusted	Scanner automatically selected the least-motion cardiac phase; further phase reconstruction as required; specific kernel/iterative algorithm NR	60 mL nonionic low-osmolar Iomeron 400 IV; IV metoprolol to HR <65 bpm and 800 µg sublingual glyceryl trinitrate unless contraindicated
Maclean 2023 [81]	Philips Brilliance 64, Siemens Biograph mCT,	NR	NR	NR	Noncontrast ECG-gated calcium scoring and contrast-enhanced ECG-	Contrast-enhanced ECG-gated CCTA performed; contrast agent, volume, and

	or Toshiba Aquilion ONE at 3 SCOT-HEART imaging sites				gated CCTA; kernel/iterative reconstruction NR	injection rate NR in this paper
Matsumoto 2007 [34]	Siemens SOMATOM Volume Zoom (4-slice) or Toshiba Aquilion 16	1.0 mm (SOMATOM) / 0.5 mm (Aquilion 16)	140 kV	320 mA (SOMATOM); 400 mA (Aquilion 16)	Single-phase ECG-gated retrospective reconstruction with half-reconstruction technique	Oral metoprolol 20–60 mg or atenolol 50 mg; 0.3 mg sublingual nitroglycerin; 20 mL Iomeron 300 test bolus followed by 80 mL Iomeron 300 at 3.3 mL/s
Meah 2022 [82]	≥64-slice multidetector CT scanners (multicenter RAPID-CTCA; individual models not specified)	NR	NR	NR	Contrast-enhanced ECG-gated CCTA performed in mid-diastole or end-systole; plaque quantified using Autoplaque v2.5 (analysis software, not image reconstruction)	IV or oral beta-blocker if HR >60 bpm; sublingual glyceryl trinitrate encouraged; contrast-enhanced ECG-gated CCTA; contrast type/volume/rate NR
Meng 2024 [70]	Siemens SOMATOM Definition or SOMATOM Definition Flash (dual-source CT)	0.75 mm slice thickness; 0.5 mm increment; 3 mm for calcium score	100–120 kV (CCTA); 120 kV (CACS)	Automatic tube current modulation	Prospectively ECG-triggered acquisition; best cardiac phase selected; reconstruction algorithm NR	Iopromide 370 mgI/mL; 50–60 mL contrast → 30 mL contrast/saline mixture → 30 mL saline, 4–5 mL/s
Min 2010 [35]	GE VCT 64-slice (GE Healthcare)	64 × 0.625 mm collimation	120 kV	400–650 mA (automodulated)	Retrospective ECG-gated acquisition with ECG dose modulation; multiphase reconstruction; axial, MPR, and MIP reconstructions	60 mL Visipaque → 40 mL 50:50 contrast/saline → 50 mL saline flush; test bolus performed
Miszalski-Jamka 2012 [36]	Siemens Somatom Sensation 16 Cardiac or Somatom Sensation 64 Cardiac	16-slice: 16 × 0.75 mm collimation, reconstructed at 1.0 mm/0.8 mm increment; 64-slice: 2 × 32 × 0.6 mm collimation, reconstructed at 0.75 mm/0.6 mm increment	120 kV (reduced to 100 kV if BMI <25 kg/m²)	16-slice: 400–500 mAs; 64-slice: 350–400 mA	B30f kernel; retrospective ECG-gated acquisition; ECG-controlled tube current modulation; ECG-gated half-scan algorithm (64-slice); multiphase (0–90%) reconstruction	20 mL test bolus + saline; Iopromide 370 (1.2 mL/kg) at 4.0–5.5 mL/s followed by 40 mL saline chaser
Mordi 2016 [37]	GE Discovery CT750 HD (64-slice dual-source)	64-slice (collimation NR)	100–140 kV	370–412 mAs (BMI-dependent)	ECG-gated acquisition (prospective if HR <60 bpm; retrospective if HR >70 bpm); axial images with curved MPR and MIP for analysis	80–120 mL Ultravist (Bayer) according to BMI at 5 mL/s, followed by saline bolus
Mortensen 2020 [71]	Multiple platforms (Siemens, Toshiba, Philips), all ≥64-slice CT	NR	NR	NR	CTA performed according to CTA best practice guidelines; specific reconstruction algorithm NR	NR
Motoyama 2009 [38]	Toshiba Aquilion 64 or Aquilion 16	64-slice: 64 × 0.5 mm; 16-slice: 16 × 0.5 mm	135 kV	64-slice: 400–450 mA; 16-slice: 360 mA	Retrospective ECG-gated spiral reconstruction; post-processing on ZIO M900 workstation; plaque quantification with SurePlaque software	64-slice: 60 mL contrast @ 4.0 mL/s then 20 mL @ 2.0 mL/s; 16-slice: 60 mL @ 3.0 mL/s then 40 mL @ 1.5 mL/s; SureStart bolus triggering
Motoyama 2013 [72]	Toshiba Aquilion ONE (320-slice), Aquilion 64, or Aquilion 16	320-slice: 320 × 0.5 mm; 64-slice: 64 × 0.5 mm; 16-slice: 16 ×	320-slice: 120–135	320-slice: 300–580 mA; 64-slice: 400–450	Retrospective ECG-gated segment reconstruction; post-processing on ZIOSTATION System 1000/ZIO M900	320-slice: 245 mgI/kg over 12 s + 20 mL saline @ 3 mL/s; 64-slice: 60 mL @ 4.0 mL/s + 20 mL @ 2.0 mL/s; 16-slice: 60 mL @ 3.0 mL/s + 40 mL @ 1.5 mL/s

		0.5 mm	kV; 64-slice: 120–135 kV; 16-slice: 135 kV	mA; 16-slice: 360 mA		
Motoyama 2015 [39]	Toshiba Aquilion ONE (320-slice), Toshiba Aquilion 64, Philips Brilliance CT 64, Toshiba Aquilion 16	NR	120 or 135 kV	300–580 mA (320-slice; body weight dependent)	ECG-gated reconstruction; multiplanar reformation (axial, coronal, sagittal, curved MPR); post-processing workstation	320-slice: 245 mg I/kg contrast; 16/64-slice: 60–100 mL contrast
Munnur 2022 [39]	Toshiba Aquilion One Vision (320-row detector)	NR	NR	NR	Images analyzed on Vitrea v6.0 (Vital Images) workstation; acquisition performed according to SCCT guidelines and departmental protocol	Nitroglycerin before scan; β-blockers to HR <60 bpm; contrast volume/rate NR
Mushtaq 2015 [40]	GE VCT 64-slice (GE Medical Systems, Milwaukee, WI)	64 × 0.625 mm	NR	NR	ECG-gated acquisition (40–80% RR interval); volume rendering and multiplanar reconstruction on CardioQ3 Advantage Workstation v4.2	80 mL Iomeron 400 mg/mL @ 5 mL/s, followed by 50 mL saline @ 5 mL/s; bolus tracking
Nadjiri 2016 [41]	Siemens Somatom 64 (single-source 64-slice; Siemens Healthcare, Erlangen, Germany)	2 × 32 × 0.6 mm	NR	850–950 mAs (ECG-modulated)	ECG-gated half-scan reconstruction (164 ms); bi-segment reconstruction for HR >65 bpm (83 ms effective temporal resolution)	80–140 mL iodinated contrast @ 4–6 mL/s, followed by 50 mL saline
Nakanishi 2014 [42]	Siemens Somatom Sensation 64 (Siemens Medical Systems, Forchheim, Germany)	64 × 0.6 mm	120 kV	770–850 mAs	Retrograde ECG-gated multislice spiral reconstruction	50–80 mL Omnipaque 350 @ 3.5–5.5 mL/s, followed by 30 mL saline
Nance 2012 [74]	Siemens Definition or Siemens Flash (first- or second-generation dual-source CT; Siemens Medical Solutions, Forchheim, Germany)	0.6 mm (CTA); 1.2 mm (CAC scan); reconstructed to 0.75 mm slices with 0.5 mm increments	80–120 kV (CTA); 120 kV (CAC)	600–900 mAs (CTA, body habitus dependent); 145 mAs (CAC)	Medium-sharp convolution kernel (CTA); medium-sharp calcium-scoring kernel for CAC	Test bolus: 20 mL iopromide 370 (Ultravist). Triple-phase protocol (contrast → contrast/saline mix → saline), 3.5–6.0 mL/s, automated (P3T, Medrad).
Oeing 2023 [43]	320-detector-row cardiac CT (CORE320 multicenter study)	NR in this paper	NR	NR	NR	NR
Otsuka 2013 [44]	SOMATOM Sensation 64 (Siemens Medical Systems, Forchheim,	64 × 0.6 mm	120 kV	770–850 mA	ECG-gated multislice spiral reconstruction algorithm	50–80 mL Omnipaque 350 (Daiichi Sankyo), 3.5–5.5 mL/s, followed by 30 mL saline; bolus tracking (ascending aorta, 100 HU threshold)

	Germany)					
Otsuka 2014 [45]	SOMATOM Sensation 64 (Siemens Medical Systems, Forchheim, Germany)	64 × 0.6 mm	120 kV	770–850 mA	ECG-gated multislice spiral reconstruction algorithm	50–80 mL Omnipaque 350 (Daiichi Sankyo), 3.5–5.5 mL/s, followed by 30 mL saline; bolus tracking (ascending aorta, 100 HU threshold)
Otsuka 2022 [75]	Aquilion ONE/NATURE Edition 320-row MDCT (Canon Medical Systems, Tochigi, Japan)	0.5 × 320 mm	120 kV	130–600 mA	NR	Iopamidol 370 mg I/mL (Bracco), 270 mg iodine/kg (33–74 mL), 2.3–4.9 mL/s, saline flush at same rate; bolus tracking (ascending aorta, 150 HU threshold)
Pergola 2022 [76]	Aquilion ONE ViSION Edition 320-row MDCT (Canon Medical Systems, Otawara, Tochigi, Japan)	320 × 0.5 mm	NR	NR	Multiplanar reformation, cross-sectional reconstruction; Vitrea2 FX v6.3 (Vital Images)	NR (acquisition protocol referenced from previous publications; not restated)
Petretta 2012 [46]	LightSpeed VCT 64-slice (GE Healthcare, Milwaukee, WI, USA)	64 × 0.625 mm	100–120 kV (patient-size dependent)	600 mA	Advantage Workstation (GE Healthcare) for post-processing; reconstruction algorithm NR	60–80 mL Iomeron 400 (Bracco), 5 mL/s, saline flush, bolus tracking (ascending aorta, 100 HU threshold)
Plank 2014 [47]	Somatom Sensation 64 (Siemens) and Somatom Definition Flash 128-slice DSCT (Siemens)	64-slice: 64 × 0.6 mm; 128-slice DSCT: 2 × 64 × 0.6 mm (z-flying spot); reconstructed at 0.75 mm slice width (0.4 mm increment)	100 kV (BMI <26 kg/m²); 120 kV (BMI ≥26 kg/m²)	NR	Medium-smooth kernel B26f (CTA); B35f for calcium scoring	Ultravist 370 (iopromide, Bayer), 65–120 mL, 4–6 mL/s, 40 mL saline, bolus tracking (100 HU threshold)
Pundziute 2007 [48]	Aquilion 16 / Aquilion 64 (Toshiba Medical Systems, Tokyo, Japan)	64-slice: 64 × 0.5 mm; calcium scan: 4 × 3.0 mm; reconstructed at 0.5 mm slice thickness (0.3 mm increment)	120 kV	200 mA (calcium scan); 300 mA (64-slice CTA)	Segmental reconstruction algorithm; post-processing on Vitrea 2 workstation	Iomeron 400 (Bracco Altana), 80–105 mL, 5 mL/s, automated bolus detection in the aortic root
Sato 2024 [49]	Aquilion ONE Vision 320-slice (Canon Medical Systems)	320 × 0.5 mm	120 kV	300–580 mA (body-weight dependent)	ECG-gated reconstruction; reconstructed on Ziostation2 workstation; POC-FFRCT analyzed with sure-Cardio CT-FFR	Contrast dose 20.4 mgI/kg/s for 12 s, followed by 20 mL saline at 3.0 mL/s
Senoner 2020 [50]	Somatom Sensation 64 and Somatom Definition FLASH 128-slice DSCT (Siemens)	64-slice: 64 × 0.6 mm; 128-slice: 2 × 64 × 0.6 mm (z-flying spot); reconstructe	120 kV (reported for calcium	NR	Medium-smooth kernel B26f; SyngoVia™ (Siemens Healthineers) for plaque analysis	Ultravist 370 (Iopromide), 65–120 mL, 4–6 mL/s, 40 mL saline chaser, bolus tracking (100 HU threshold)

		d at 0.75 mm slice thickness (0.4 mm increment)	scan; CTA kVp not separately specified)			
Sozzi 2011 [51]	Somatom Sensation 64 Cardiac (Siemens, Forchheim, Germany)	64 × 0.6 mm collimation; reconstructed at 0.75 mm slice thickness (0.6 mm increment)	120 kV	450 mA	Reconstructions in 75% diastole (additional RR phases if motion); post-processing on Syngo workstation	Iodixanol 320 or Iomeron 400, 80–105 mL, 5 mL/s, followed by 50 mL saline at 5 mL/s; bolus tracking in aortic root
Suruga 2021 [52]	SOMATOM Definition Flash 128-slice (Siemens Medical Solutions)	NR	NR	NR	Coronary analysis using Virtual Place Raijin (AZE Inc.)	Omnipaque 350; initial bolus = body weight × 0.07 mL over 10 s; 10 mL test bolus; second bolus = 80% contrast diluted 50% with saline + 20% saline bolus
Takamura 2017 [77]	Aquilion 64 Super Heart and Aquilion ONE V4.51 / Aquilion ONE ViSION Edition (Toshiba Medical Systems)	64-row: 64 × 0.5 mm, image thickness 0.5 mm, reconstruction interval 0.3 mm. 320-row: 320 × 0.5 mm, image thickness 0.5 mm, reconstruction interval 0.25 mm	120 kV	64-row: ~440 mA (adjusted for body habitus). 320-row: automatic exposure control (mean adjusted; exact mA not fixed)	Full-, half-, or segmental-image reconstruction using the R+ absolute time method; image analysis on Ziostation v1.3.1	64-row: 3-stage injection (contrast 12 s → 50% contrast/50% saline for 6 s → saline 2 s), 2.5–4.5 mL/s, 38–62 mL. 320-row: contrast 10 s then saline 8 s at body weight × 0.06 mL/s
Tesche 2023 [78]	Brilliance 64 (Philips Medical, Eindhoven, The Netherlands)	Calcium score: 32 × 1.2 mm collimation; 3 mm slices (1.5 mm increment). CCTA: 64 × 0.6 mm collimation; reconstructed at 0.75 mm slice thickness (0.5 mm increment).	120 kV	Calcium score: 75 mA. CCTA: 600 mAs	Weighted filtered back projection using a smooth convolution kernel	50–80 mL iodinated contrast at 4–6 mL/s, followed by 30 mL saline chaser
Tomizawa 2018 [79]	Brilliance 64 (Philips, Eindhoven, The Netherlands)	Calcium score: 2.5 mm collimation, reconstructed at 2.5 mm. CCTA: 64 × 0.625 mm detector configuration; reconstructed at 0.67	120 kVp	Calcium score: 196 mA. CCTA: 800–1050 mAs (weight-dependent)	Cardiac sharp kernel; reconstruction of optimal cardiac phase; processed on Synapse Vincent v4.4	Iopamidol 370, 0.8 × body weight (minimum 40 mL), injected over acquisition duration + 7 s, followed by 30 mL saline; bolus tracking (100 HU threshold)

		mm slice thickness (0.33 mm increment).				
Tommasino 2024 [53]	Revolution CT Evo 128-slice (GE Healthcare, Chicago, IL, USA)	NR	NR	NR	Image analysis on Volume Viewer v10.3.67.ar with 2D/3D volume reconstructions	Iopamidol 370; 50–70 mL contrast followed by 50 mL saline at 4–5 mL/s using bolus tracking (100 HU threshold)
Tzolos 2022 [83]	Brilliance 64 (Philips Healthcare), Biograph mCT (Siemens), or Aquilion ONE (Toshiba Medical Systems)	Philips: 64 × 0.625 mm collimation. Aquilion ONE: wide-volume collimation. Biograph mCT: NR.	NR	BMI-based tube current (all scanners)	Semiautomated plaque analysis using Autoplaque v2.5 (Cedars-Sinai)	50–70 mL iodinated contrast at 5.5–6.5 mL/s
van Werkhoven 2009 [54]	Aquilion 64 (Toshiba Medical Systems, Tokyo, Japan) or LightSpeed VCT 64 (GE Healthcare, Milwaukee, WI, USA)	Calcium score: 4 × 3.0 mm or 2.5 mm. CCTA: 64 × 0.5 mm or 64 × 0.625 mm collimation; reconstructed at 0.3 or 0.5 mm slice thickness	120 kV	200–250 mA (calcium score)	Images reconstructed from retrospectively ECG-gated raw data; evaluated on Vitrea2 (Vital Images) and Advantage (GE Healthcare) workstations	NR
Williams 2019 [84]	NR (SCOT-HEART protocol; scanner details referenced from prior publication)	NR	NR	NR	Visual assessment by 6 trained observers using a 15-segment model	NR
Yamamoto 2013 [55]	LightSpeed VCT 64 (GE Healthcare, Waukesha, WI, USA)	64 × 0.625 mm	120 kV	650 mA (65–85% R-R interval), minimum 300 mA	Images transferred to Advantage Workstation v4.2 (GE Healthcare) for reconstruction and analysis	Iopamiron 370 (Bayer); 0.6–0.7 mL/kg, antecubital vein
Yamamoto 2018 [56]	≥64-detector-row CT scanners (multiple vendors across 26 centers)	NR (institution-specific)	120 kV	NR	Images reconstructed centrally using Advantage Workstation Ver. 4.4 (GE Healthcare)	Iodine injection adjusted to achieve 300–400 HU in the aortic root
Yamamoto 2021 [85]	≥64-detector-row CT scanners (multiple vendors; PREDICT registry, 30 centers)	NR	NR	NR	Images reconstructed centrally using Advantage Workstation Ver. 4.4 (GE Healthcare); plaque analysis per original PREDICT protocol	NR
Yang 2026 [80]	SOMATOM Definition Flash (Siemens Healthineers) and Aquilion ONE ViSION 640-slice (Canon Medical Systems)	0.5–0.6 mm reconstructed (0.3–0.4 mm increment)	80–120 kVp	200–650 mAs	Reconstructed in 60–75% diastole and 30–45% systole; analyzed on Syngo.via with fully automated Shukun Network Technology software	40–60 mL iodixanol 320 mg I/mL, 4–5 mL/s, followed by 40 mL saline at the same rate; bolus tracking (100–150 HU in ascending aorta)
Yorgun 2013 [57]	SOMATOM Definition dual-source 64-slice CT (Siemens,	32 × 0.6 mm detector collimation; 64 × 0.6 mm	120 kVp	390 mAs/rotation	Retrospective ECG-gated reconstruction; images reconstructed in all cardiac phases at 50-ms intervals;	80 mL iomeprol (350 mg I/mL) at 6 mL/s, followed by 50 mL saline at 6 mL/s; bolus tracking; sublingual 5 mg

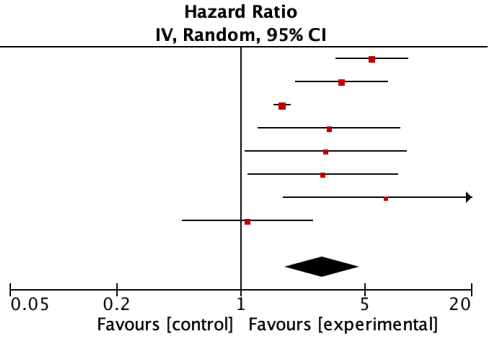
	Erlangen, Germany)	acquisition; reconstructed at 0.75 mm slices (0.5 mm increment)			final phase selected with least motion artifact	isosorbide dinitrate 2–4 min before scan
Yu 2021 [58]	SOMATOM Force third-generation dual-source CT (Siemens Healthineers)	NR (main text)	80 kVp (reference)	300 mAs (effective current)	Qr36 kernel for CT-MPI; Bv40 smooth kernel with ADMIRE iterative reconstruction (strength 3) for CCTA	Integrated CT-MPI + CCTA protocol; contrast details reported only in Appendix 1 (not in main manuscript); median contrast volume 100 mL reported in Results

Supplementary Material 5: Hard MACE Meta-Analysis

Obstructive Plaque (50% or more)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Andreini 2012	1.7029	0.2352	15.9%	5.49 [3.46, 8.70]
Bitttencourt 2014	1.30833282	0.30457765	14.4%	3.70 [2.04, 6.72]
Chan 2024	0.5365	0.0519	18.4%	1.71 [1.54, 1.89]
DeAzevedo 2011	1.14740245	0.46798931	11.1%	3.15 [1.26, 7.88]
Drissen 2020	1.10194008	0.53227817	10.0%	3.01 [1.06, 8.54]
Miszalski-Jamka 2012	1.0647	0.4941	10.6%	2.90 [1.10, 7.64]
Otsuka 2022	1.88403474	0.67715465	7.7%	6.58 [1.75, 24.81]
Tzolos 2022	0.0861777	0.428396	11.9%	1.09 [0.47, 2.52]
Total (95% CI)			**100.0%**	**2.90 [1.79, 4.70]**

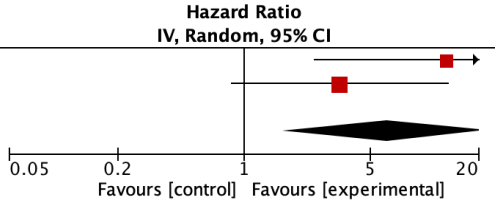
Heterogeneity: $Tau^2 = 0.33$; $Chi^2 = 36.82$, df = 7 ($P < 0.00001$); $I^2 = 81\%$
Test for overall effect: $Z = 4.31$ ($P < 0.0001$)



Obstructive Plaque (70% or more)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
DeAzevedo 2011	2.58701187	0.85791337	43.6%	13.29 [2.47, 71.41]
Plank 2014	1.2238	0.7056	56.4%	3.40 [0.85, 13.55]
Total (95% CI)			**100.0%**	**6.16 [1.64, 23.17]**

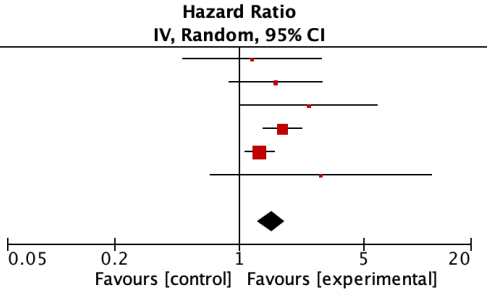
Heterogeneity: $Tau^2 = 0.31$; $Chi^2 = 1.51$, df = 1 ($P = 0.22$); $I^2 = 34\%$
Test for overall effect: $Z = 2.69$ ($P = 0.007$)



NonObstructive Plaque (50% or less)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Ates 2021	0.16551444	0.45708989	4.0%	1.18 [0.48, 2.89]
Bitttencourt 2014	0.47000363	0.30714156	8.3%	1.60 [0.88, 2.92]
Hadamitzky 2013	0.90016135	0.4477505	4.1%	2.46 [1.02, 5.92]
Han 2022	0.55961579	0.12843234	34.0%	1.75 [1.36, 2.25]
Mortensen 2020	0.26236426	0.09558682	48.0%	1.30 [1.08, 1.57]
Plank 2014	1.05431203	0.72708476	1.6%	2.87 [0.69, 11.93]
Total (95% CI)			**100.0%**	**1.52 [1.26, 1.82]**

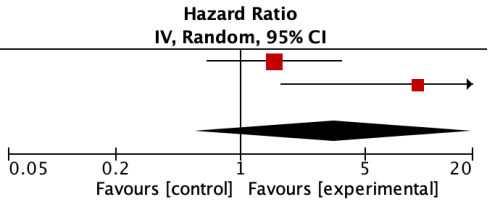
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 5.97$, df = 5 ($P = 0.31$); $I^2 = 16\%$
Test for overall effect: $Z = 4.48$ ($P < 0.00001$)



Moderate stenosis (50-70%)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Ates 2021	0.43825493	0.44158326	59.0%	1.55 [0.65, 3.68]
DeAzevedo 2011	2.29455292	0.90391254	41.0%	9.92 [1.69, 58.33]
Total (95% CI)			**100.0%**	**3.32 [0.55, 19.85]**

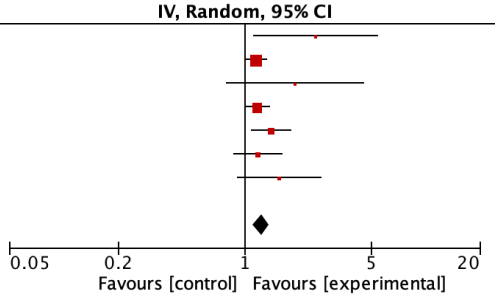
Heterogeneity: $Tau^2 = 1.22$; $Chi^2 = 3.40$, df = 1 ($P = 0.07$); $I^2 = 71\%$
Test for overall effect: $Z = 1.31$ ($P = 0.19$)



Calcified Plaque

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Ates 2021	0.90016135	0.40177279	1.7%	2.46 [1.12, 5.41]
Chow 2010	0.13976194	0.06634734	37.7%	1.15 [1.01, 1.31]
Dundas 2024	0.6397	0.4442	1.4%	1.90 [0.79, 4.53]
Finck 2020	0.15700375	0.07844142	30.6%	1.17 [1.00, 1.36]
Hadamitzky 2013	0.33647224	0.12796382	14.5%	1.40 [1.09, 1.80]
Meah 2022	0.1655	0.1554	10.4%	1.18 [0.87, 1.60]
Tzolos 2022	0.43825493	0.26795529	3.8%	1.55 [0.92, 2.62]
Total (95% CI)			**100.0%**	**1.23 [1.11, 1.37]**

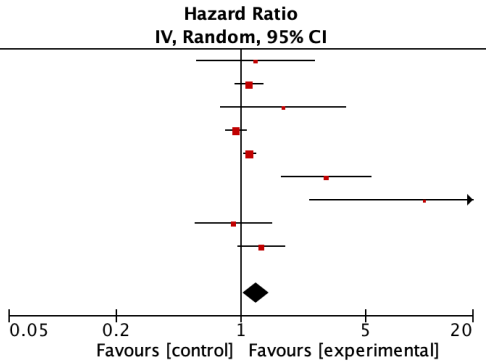
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 7.09$, df = 6 ($P = 0.31$); $I^2 = 15\%$
Test for overall effect: $Z = 3.91$ ($P < 0.0001$)



Non-Calcified Plaque

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Ates 2021	0.19062036	0.38617464	4.4%	1.21 [0.57, 2.58]
Chow 2010	0.10436002	0.09126434	18.8%	1.11 [0.93, 1.33]
Dundas 2024	0.5493	0.411	3.9%	1.73 [0.77, 3.88]
Finck 2020	-0.0618754	0.06788635	20.6%	0.94 [0.82, 1.07]
Hadamitzky 2013	0.11332869	0.03862307	22.3%	1.12 [1.04, 1.21]
Hou 2012	1.1019	0.2939	6.6%	3.01 [1.69, 5.35]
Meah 2022	2.3702	0.7563	1.3%	10.70 [2.43, 47.11]
Oeing 2023	-0.0943	0.2516	8.2%	0.91 [0.56, 1.49]
Tzolos 2022	0.26236426	0.15317572	13.9%	1.30 [0.96, 1.76]
Total (95% CI)			**100.0%**	**1.22 [1.02, 1.45]**

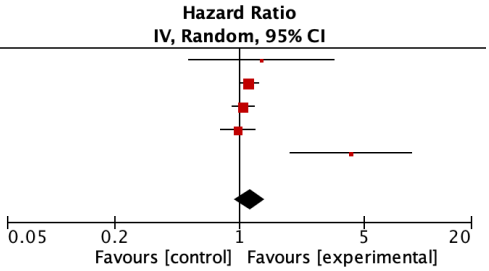
Heterogeneity: $Tau^2 = 0.03$; $Chi^2 = 29.40$, df = 8 (P = 0.0003); $I^2 = 73\%$
Test for overall effect: Z = 2.18 (P = 0.03)



Mixed plaque

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Ates 2021	0.28517894	0.47826297	3.9%	1.33 [0.52, 3.40]
Chow 2010	0.12221763	0.06097482	33.3%	1.13 [1.00, 1.27]
Finck 2020	0.04879016	0.06989975	32.0%	1.05 [0.92, 1.20]
Hadamitzky 2013	-0.02020271	0.11411236	25.4%	0.98 [0.78, 1.23]
Hou 2012	1.4422	0.3997	5.4%	4.23 [1.93, 9.26]
Total (95% CI)			**100.0%**	**1.15 [0.95, 1.40]**

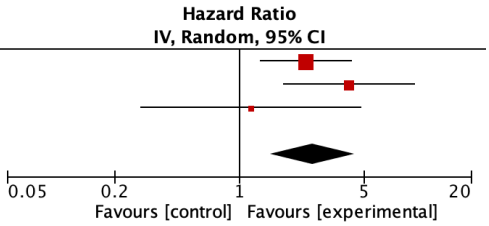
Heterogeneity: $Tau^2 = 0.03$; $Chi^2 = 13.17$, df = 4 (P = 0.01); $I^2 = 70\%$
Test for overall effect: Z = 1.40 (P = 0.16)



Napkin-ring sign (NRS)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Finck 2020	0.85866162	0.2964859	54.8%	2.36 [1.32, 4.22]
Senoner 2020	1.41342303	0.42919546	32.1%	4.11 [1.77, 9.53]
Williams 2019	0.14842001	0.72437455	13.0%	1.16 [0.28, 4.80]
Total (95% CI)			**100.0%**	**2.57 [1.50, 4.39]**

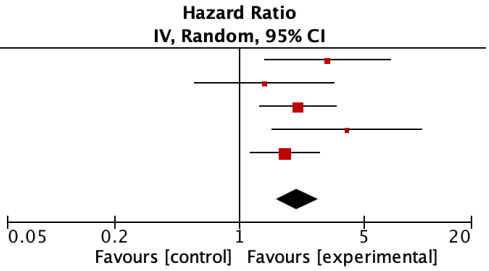
Heterogeneity: $Tau^2 = 0.05$; $Chi^2 = 2.49$, df = 2 (P = 0.29); $I^2 = 20\%$
Test for overall effect: Z = 3.45 (P = 0.0006)



Low-attenuation plaque (LAP)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Dundas 2024	1.1375	0.4124	11.6%	3.12 [1.39, 7.00]
Finck 2020	0.3220835	0.46010894	9.3%	1.38 [0.56, 3.40]
Meah 2022	0.7561	0.2485	31.9%	2.13 [1.31, 3.47]
Senoner 2020	1.38629436	0.49352128	8.1%	4.00 [1.52, 10.52]
Tzolos 2022	0.58778666	0.2247999	39.0%	1.80 [1.16, 2.80]
Total (95% CI)			**100.0%**	**2.11 [1.60, 2.77]**

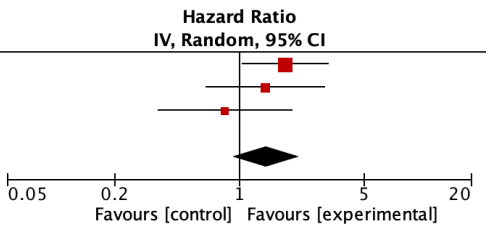
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 3.93$, df = 4 (P = 0.42); $I^2 = 0\%$
Test for overall effect: Z = 5.31 (P < 0.00001)



Spotty calcification (SC)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Finck 2020	0.59332685	0.28107973	49.6%	1.81 [1.04, 3.14]
Senoner 2020	0.33647224	0.3884526	28.1%	1.40 [0.65, 3.00]
Williams 2019	-0.18632958	0.4407876	22.3%	0.83 [0.35, 1.97]
Total (95% CI)			**100.0%**	**1.42 [0.93, 2.16]**

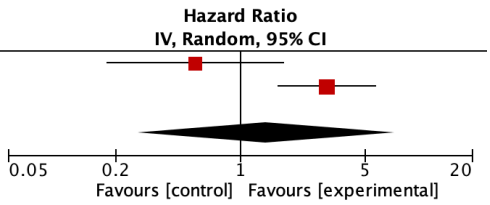
Heterogeneity: $Tau^2 = 0.02$; $Chi^2 = 2.23$, df = 2 (P = 0.33); $I^2 = 10\%$
Test for overall effect: Z = 1.61 (P = 0.11)



Positive remodelling (PR)

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Senoner 2020	-0.5798185	0.58021837	45.9%	0.56 [0.18, 1.75]
Williams 2019	1.11514159	0.31981174	54.1%	3.05 [1.63, 5.71]
Total (95% CI)			**100.0%**	**1.40 [0.27, 7.33]**

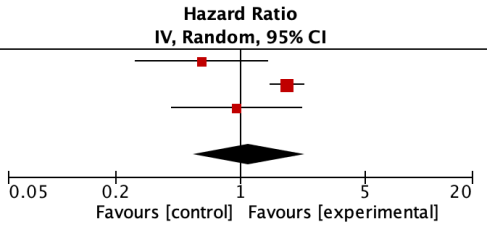
Heterogeneity: $Tau^2 = 1.22$; $Chi^2 = 6.55$, df = 1 (P = 0.01); $I^2 = 85\%$
Test for overall effect: Z = 0.40 (P = 0.69)



1 or More High-Risk Plaque Feature

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Oeing 2023	-0.5009	0.4335	28.0%	0.61 [0.26, 1.42]
Senoner 2020	0.60431597	0.10911878	43.8%	1.83 [1.48, 2.27]
Tzolos 2022	-0.05129329	0.42743123	28.3%	0.95 [0.41, 2.20]
Total (95% CI)			**100.0%**	**1.12 [0.54, 2.30]**

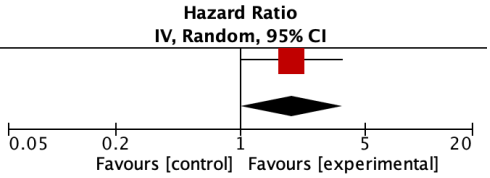
Heterogeneity: $Tau^2 = 0.30$; $Chi^2 = 7.91$, df = 2 (P = 0.02); $I^2 = 75\%$
Test for overall effect: Z = 0.30 (P = 0.77)



2 or More High-Risk Plaque Features

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Drissen 2020	0.65752	0.33445305	100.0%	1.93 [1.00, 3.72]
Total (95% CI)			**100.0%**	**1.93 [1.00, 3.72]**

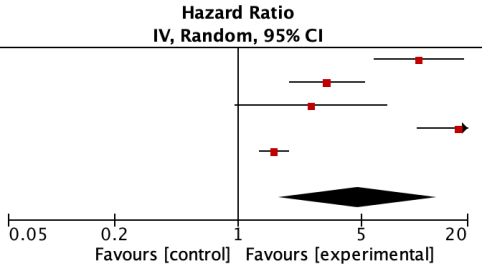
Heterogeneity: Not applicable
Test for overall effect: Z = 1.97 (P = 0.05)



1-vessel disease

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Andreini 2012	2.3627	0.2961	20.1%	10.62 [5.94, 18.97]
Chow 2021	1.16002092	0.24891124	20.5%	3.19 [1.96, 5.20]
Hadamitzky 2013	0.95551144	0.50418512	17.9%	2.60 [0.97, 6.98]
Hou 2012	2.8809	0.2734	20.3%	17.83 [10.43, 30.47]
Mortensen 2020	0.47000363	0.09681036	21.3%	1.60 [1.32, 1.93]
Total (95% CI)			**100.0%**	**4.79 [1.71, 13.44]**

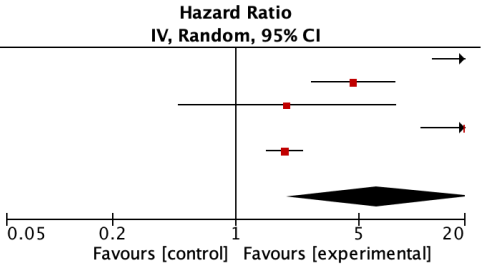
Heterogeneity: $Tau^2 = 1.29$; $Chi^2 = 97.71$, df = 4 (P < 0.00001); $I^2 = 96\%$
Test for overall effect: Z = 2.98 (P = 0.003)



2-vessel disease

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Andreini 2012	3.2157	0.3273	20.4%	24.92 [13.12, 47.33]
Chow 2021	1.53901545	0.27811316	20.8%	4.66 [2.70, 8.04]
Hadamitzky 2013	0.66782937	0.72372784	16.6%	1.95 [0.47, 8.06]
Hou 2012	3.0248	0.3052	20.6%	20.59 [11.32, 37.45]
Mortensen 2020	0.64185389	0.11990109	21.5%	1.90 [1.50, 2.40]
Total (95% CI)			**100.0%**	**6.36 [1.93, 20.99]**

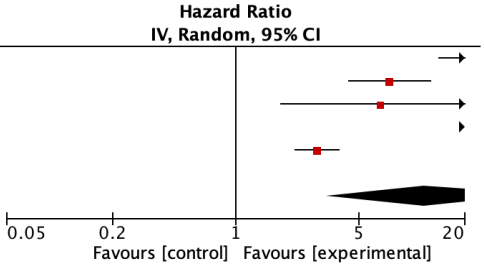
Heterogeneity: $Tau^2 = 1.71$; $Chi^2 = 97.29$, df = 4 (P < 0.00001); $I^2 = 96\%$
Test for overall effect: Z = 3.04 (P = 0.002)



3-vessel disease

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Andreini 2012	3.26	0.3063	20.3%	26.05 [14.29, 47.48]
Chow 2021	2.010895	0.27237692	20.5%	7.47 [4.38, 12.74]
Hadamitzky 2013	1.89611949	0.66464136	17.5%	6.66 [1.81, 24.50]
Hou 2012	4.0397	0.2627	20.6%	56.81 [33.95, 95.07]
Mortensen 2020	1.06471074	0.1460535	21.1%	2.90 [2.18, 3.86]
Total (95% CI)			**100.0%**	**11.74 [3.26, 42.30]**

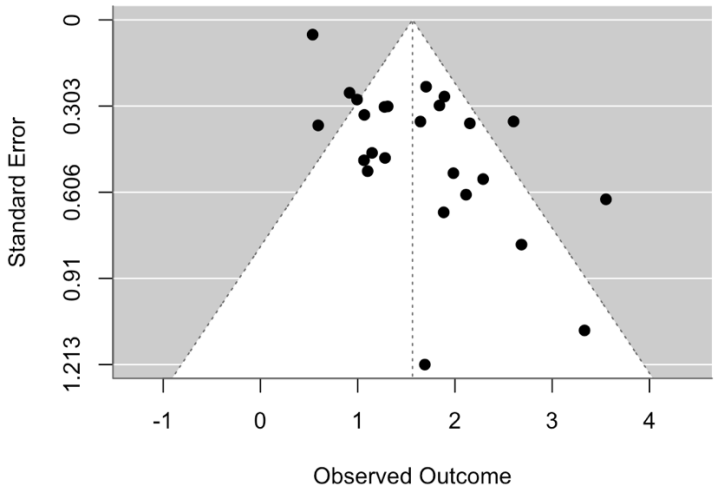
Heterogeneity: $Tau^2 = 2.01$; $Chi^2 = 118.23$, df = 4 (P < 0.00001); $I^2 = 97\%$
Test for overall effect: Z = 3.77 (P = 0.0002)



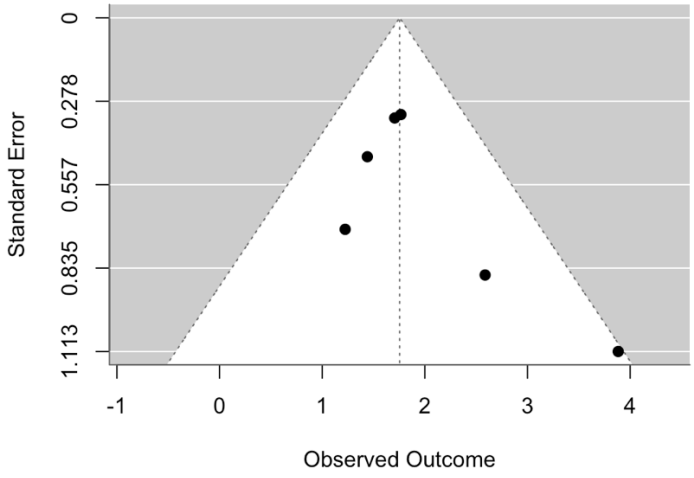
Supplementary Material 6: Egger's Regression Test and Funnel Plots (FP)

Variable	# of Studies	Egger's Test Z score	Egger's Test P Value
1. Obstructive Plaque (≥50% Stenosis)	25	3.1319	0.0017
2. Obstructive Plaque (≥70% Stenosis)	6	1.3604	0.1737
3. Non–Obstructive Plaque (<50% Stenosis)	10	0.4294	0.6676
4. Moderate Stenosis (50–70%)	4	1.7732	0.0762
5. Calcified Plaque	17	3.2504	0.0012
6. Non–Calcified Plaque	18	3.9936	< .0001
7. Mixed Plaque (Partially Calcified)	13	4.2175	< .0001
8. Napkin–Ring Sign (NRS)	11	0.2895	0.7722
9. Low–Attenuation Plaque (LAP)	15	2.9596	0.0031
10. Spotty Calcification (SC)	11	0.8179	0.4134
11. Positive Remodeling (PR)	9	-0.1286	0.8977
12. ≥ 1 High–Risk Plaque Feature	17	1.7606	0.0783
13. ≥ 2 High–Risk Plaque Features	14	2.9037	0.0037
14. 1–vessel Disease	9	-0.1002	0.9202
15. 2–vessel Disease	7	0.3823	0.7022
16. 3–vessel Disease	8	-0.0336	0.9732

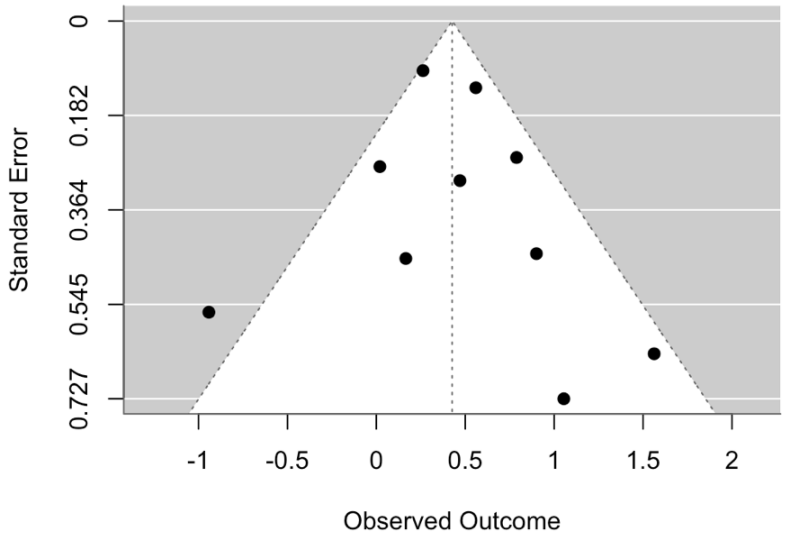
1. Obstructive Plaque >50% Stenosis FP



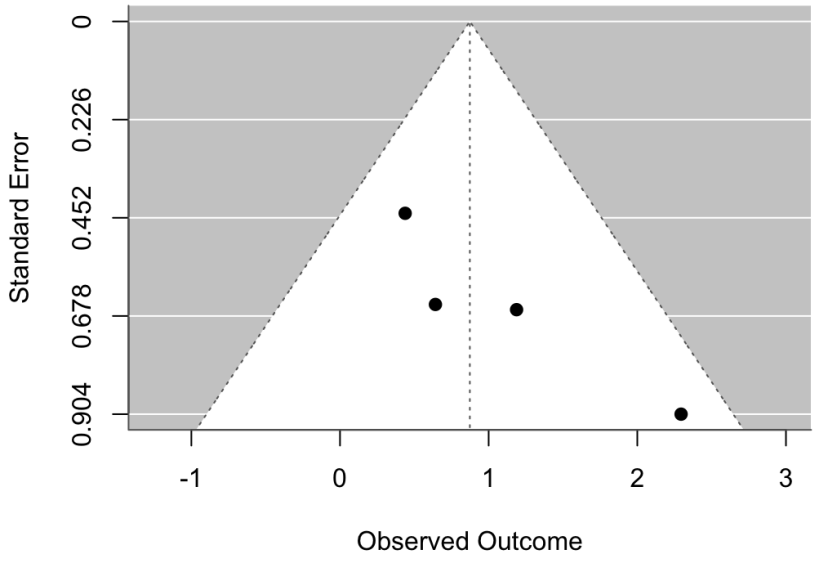
2. Obstructive Plaque >70% Stenosis FP



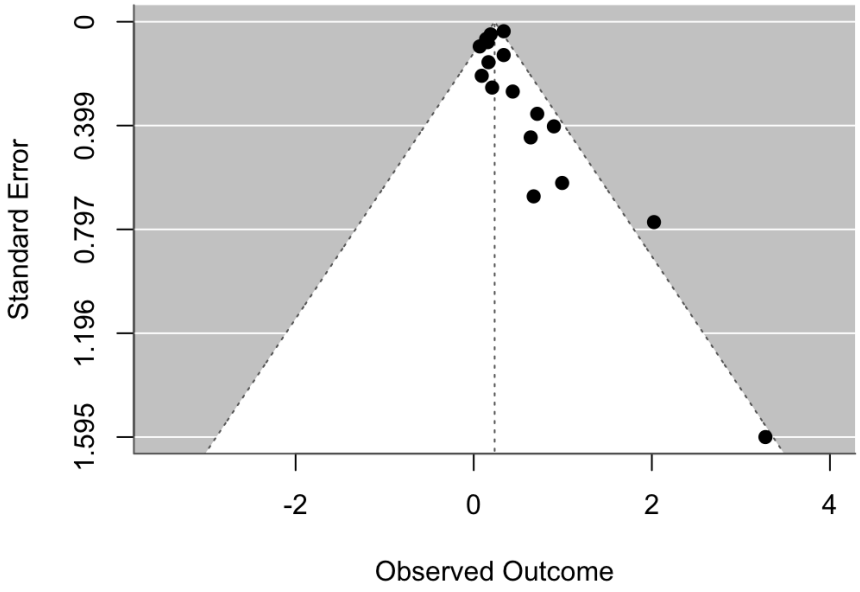
3. Non-Obstructive Plaque <50% Stenosis FP



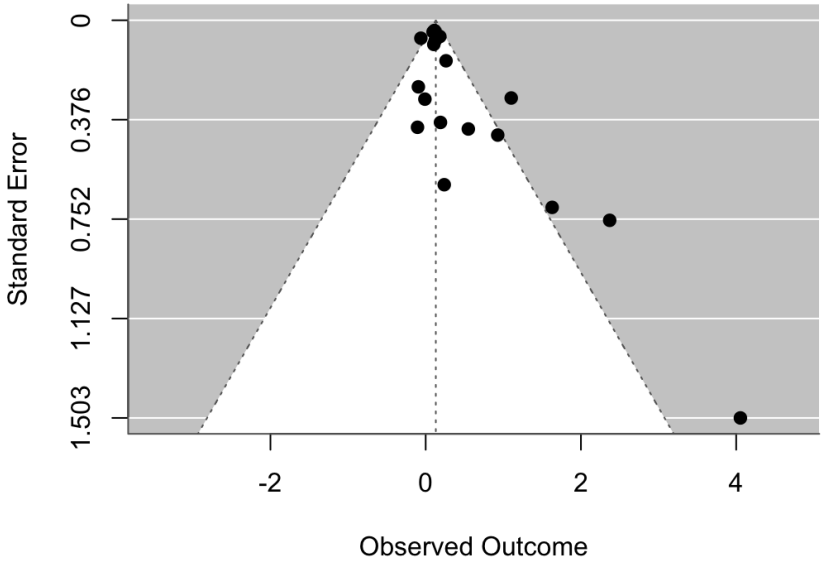
4. Moderate Stenosis 50-70% FP



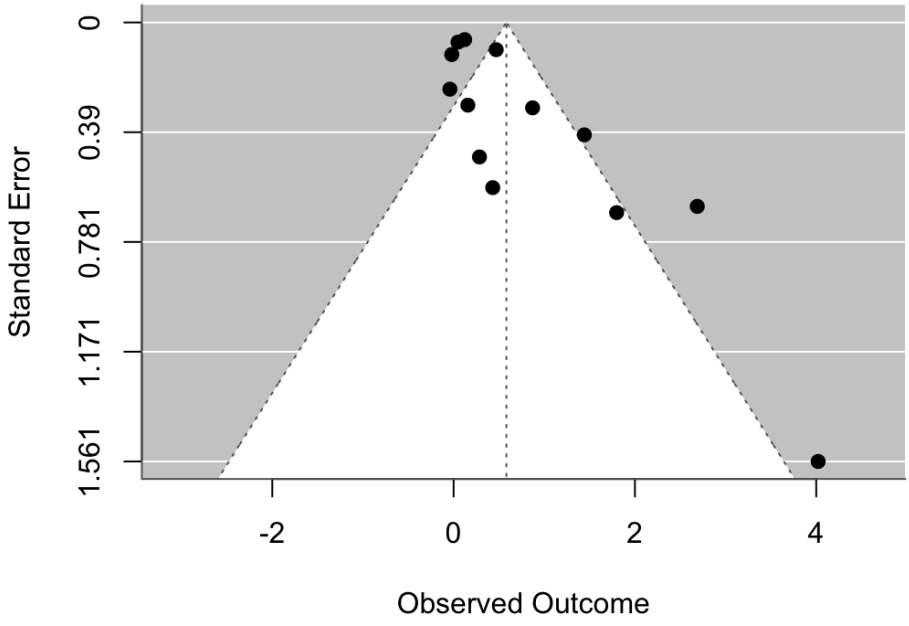
5. Calcified Plaque FP



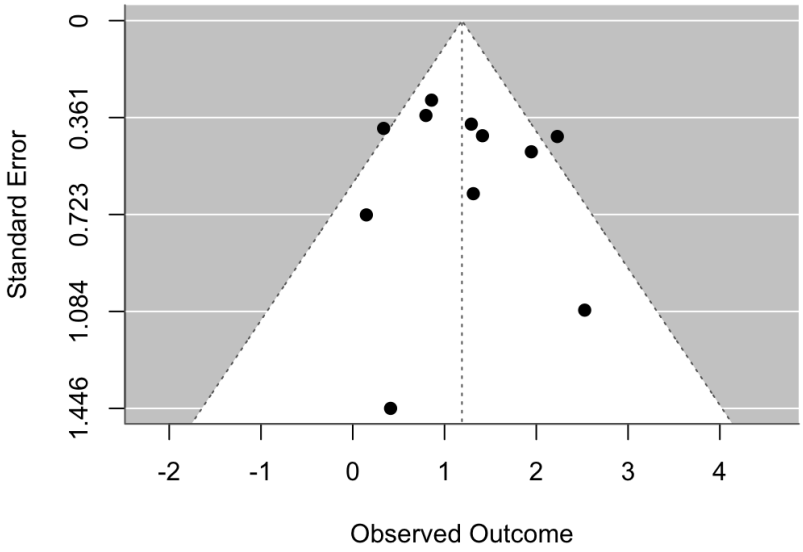
6. Non-Calcified Plaque FP



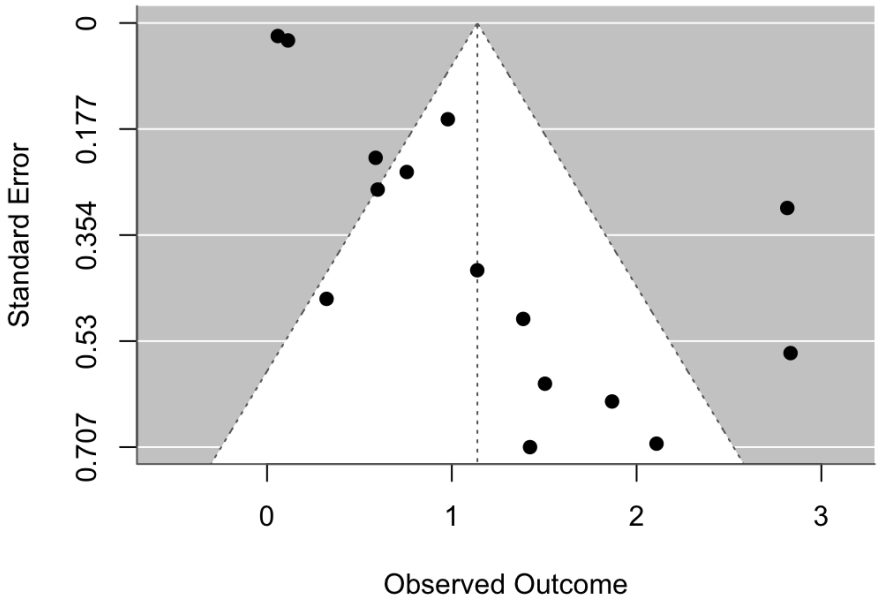
7. Mixed Plaque FP



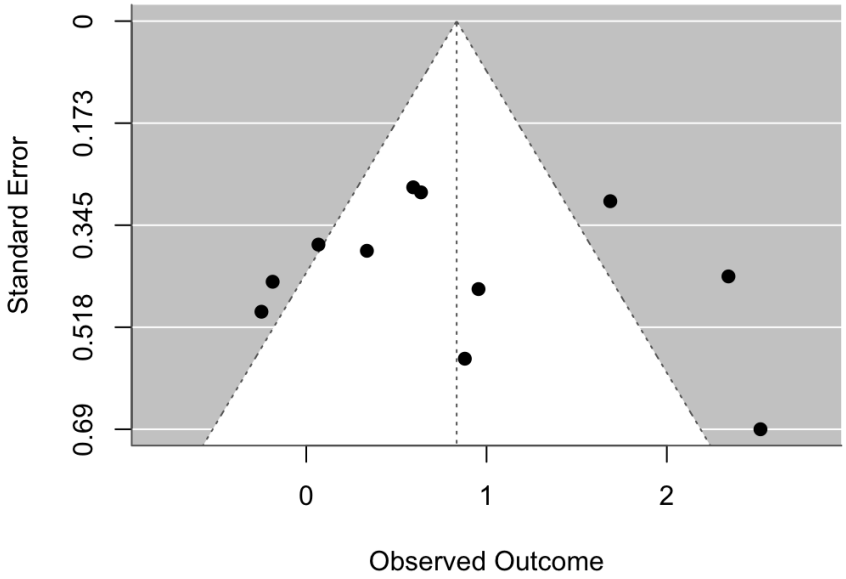
8. Napkin-Ring Sign FP



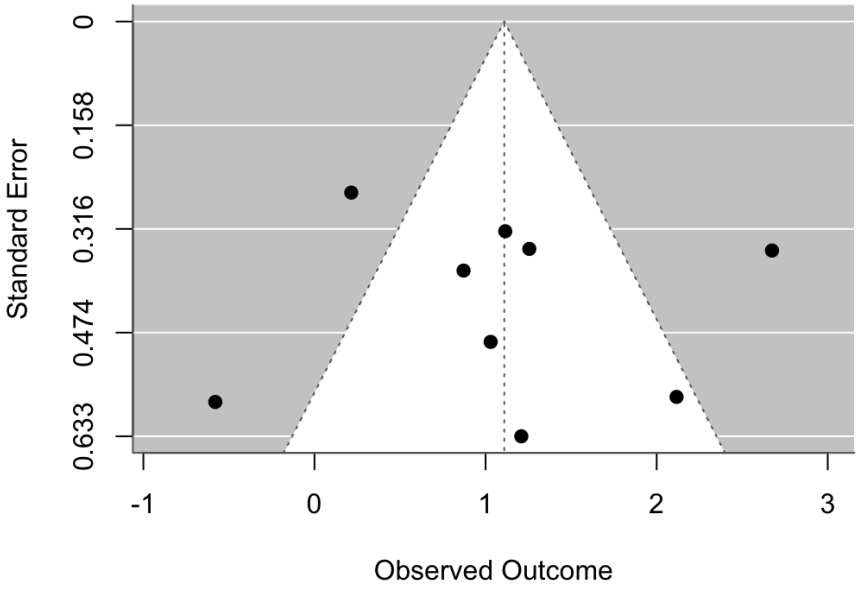
9. Low-Attenuation Plaque FP



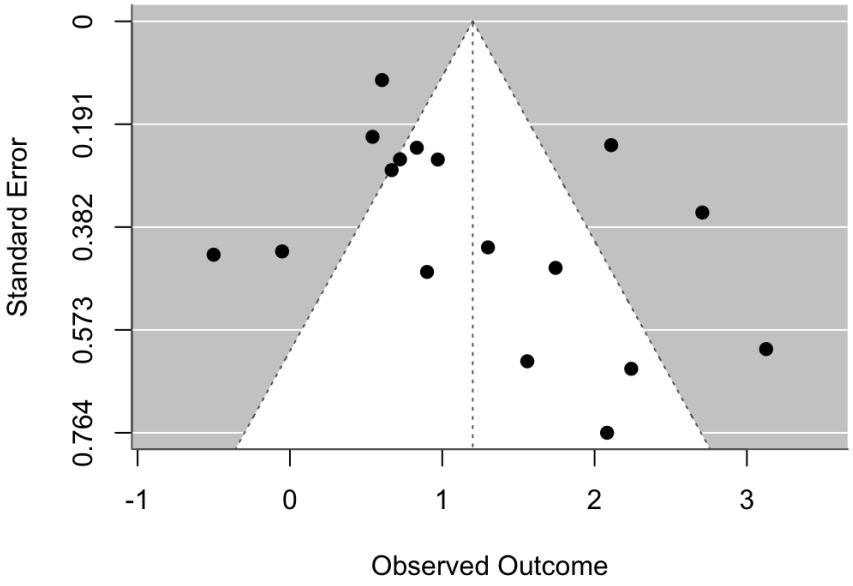
10. Spotty Calcification FP



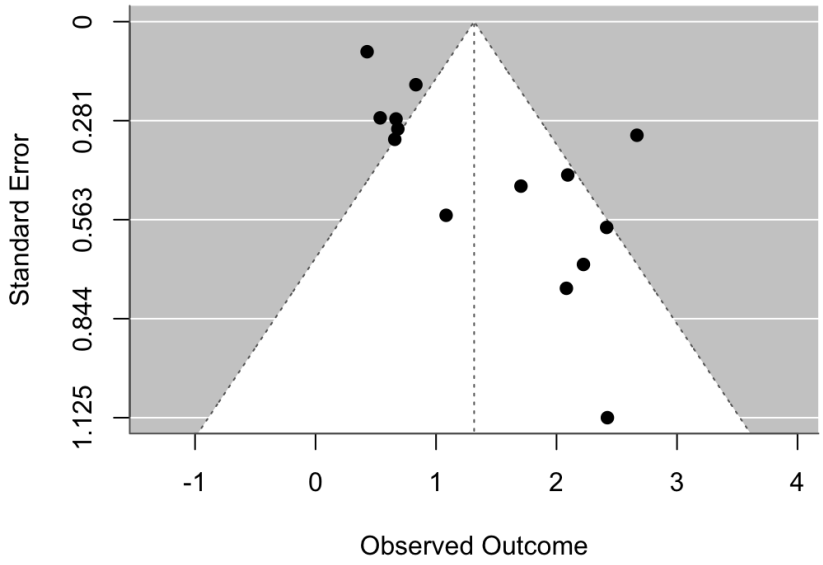
11. Positive Remodelling FP



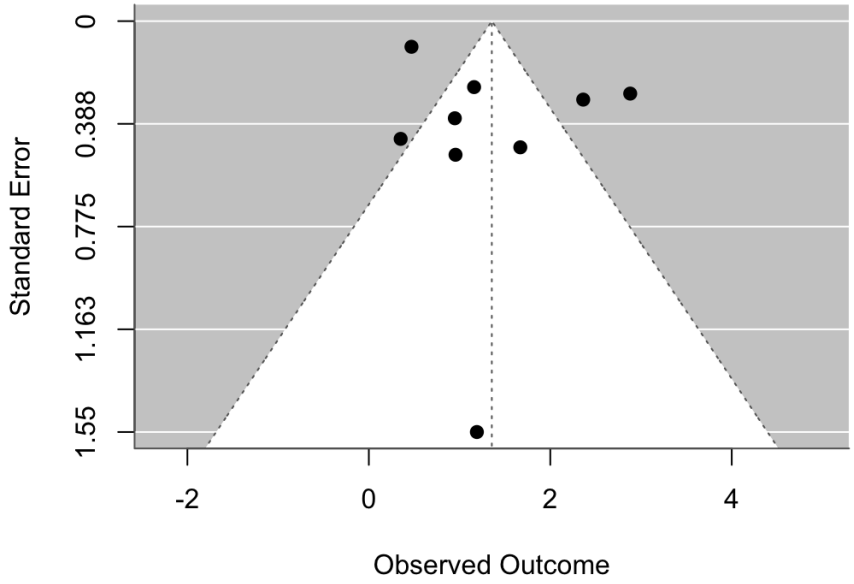
12. ≥1 High–Risk Plaque Feature



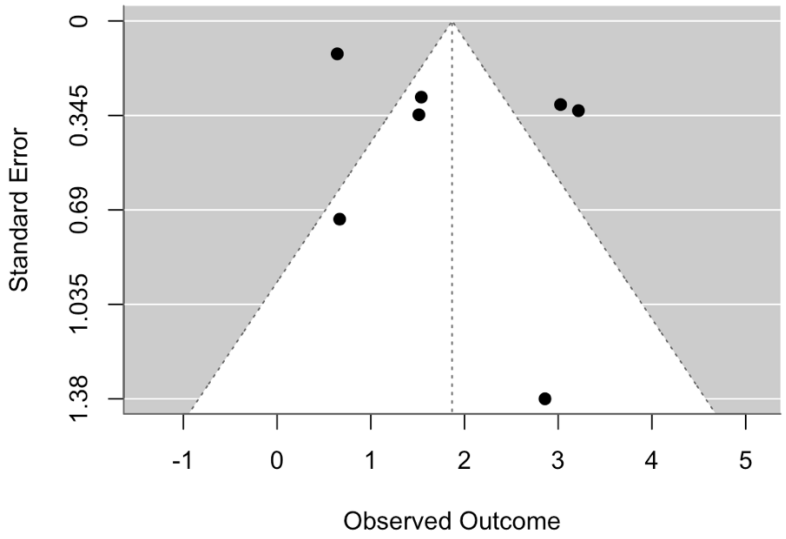
13. ≥2 High–Risk Plaque Feature



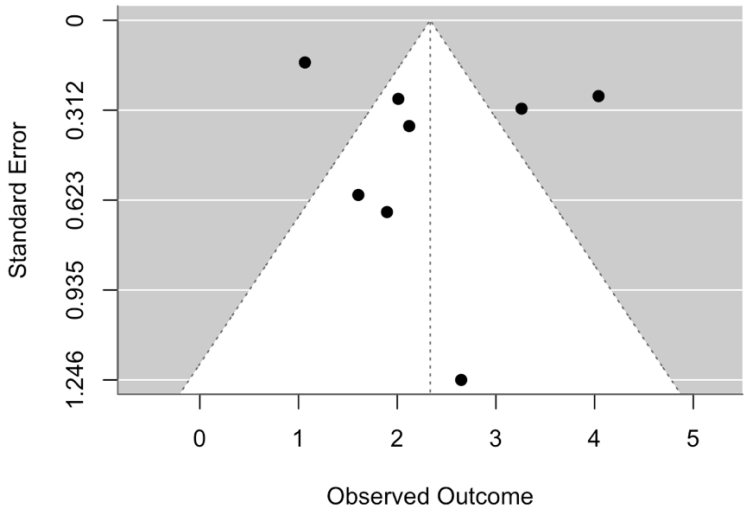
14. 1-Vessel Disease FP



15. 2-Vessel Disease FP



16. 3-Vessel Disease FP



Supplementary Material 7: Systematic Exclusion of Individual Studies Sensitivity Analysis

1. Obstructive Plaque (≥50% Stenosis)

StudyOmitted	HR	LowerCI	UpperCI	I2
Aldrovandi 2009 [18]	4.447	3.428	5.767	74.2
Aldrovandi 2012 [59]	4.659	3.515	6.176	78.4
Andreini 2012 [6]	4.763	3.551	6.387	78.4
Bitttencourt 2014 [60]	4.864	3.631	6.517	79
Chan, 2024 [21]	5.05	3.896	6.546	60.1
Cheruvu 2016 [22]	4.705	3.52	6.29	78.3
DeAzevedo 2011 [25]	4.872	3.651	6.502	79.2
Drissen 2020 [62]	4.869	3.653	6.49	79.2
Feuchtner 2017 [4]	4.641	3.494	6.166	78
Hadamitzky 2011 [27]	4.487	3.429	5.873	75
Lee 2016 [67]	4.78	3.571	6.397	79.2
Lima, 2023 [33]	4.872	3.637	6.525	79
Maclean 2023 [81]	4.937	3.7	6.587	78.1
Miszalski-Jamka 2012 [36]	4.882	3.662	6.508	79.1
Munnur 2022 [39]	4.724	3.533	6.317	78.7
Nance 2012 [74]	4.981	3.767	6.586	77.2
Otsuka, 2022 [75]	4.744	3.568	6.308	79.1
Pundziute, 2007 [48]	4.653	3.529	6.135	78.1
Sato, 2024 [49]	4.774	3.604	6.326	79
Sozzi 2011 [51]	4.702	3.54	6.245	78.8
Tesche 2023 [78]	4.652	3.521	6.147	78.2
Tommasino 2024 [53]	4.957	3.722	6.602	77.5
Van Werkhoven, 2009 [54]	4.847	3.631	6.471	79.3
Yamamoto 2013 [55]	4.715	3.544	6.274	79
Yamamoto 2018 [56]	4.911	3.677	6.559	78.7

2. Obstructive Plaque (≥70% Stenosis)

StudyOmitted	HR	LowerCI	UpperCI	I2
Benetos 2020 [20]	5.918	3.749	9.342	0
DeAzevedo 2011 [25]	5.536	3.77	8.129	0
Feuchtner 2017 [4]	5.745	3.609	9.144	0
Min, 2010 [35]	5.42	3.706	7.926	0
Plank, 2014 [47]	6.03	4.086	8.897	0
Suruga 2021 [52]	6.166	4.088	9.302	0

3. Non–Obstructive Plaque (<50% Stenosis)

StudyOmitted	HR	LowerCI	UpperCI	I2
Aldrovandi 2012 [59]	1.597	1.293	1.973	36.3
Ates 2021 [7]	1.561	1.214	2.007	51.3
Bitttencourt 2014 [60]	1.533	1.16	2.027	57
Cheruvu 2016 [22]	1.457	1.164	1.823	35.5
Hadamitzky 2013 [28]	1.49	1.179	1.883	44.7
Han, 2022 [29]	1.497	1.104	2.029	48.8
Maclean 2023 [81]	1.608	1.27	2.035	41
Mortensen 2020 [71]	1.613	1.2	2.167	42.2
Plank, 2014 [47]	1.509	1.197	1.902	45.9
Yorgun 2013 [57]	1.481	1.193	1.838	39

4. Moderate Stenosis (50–70%)

StudyOmitted	HR	LowerCI	UpperCI	I2
Ates 2021 [7]	3.318	1.476	7.46	0
DeAzevedo 2011 [25]	1.939	1.035	3.631	0
Otsuka, 2014 [45]	2.937	1.104	7.817	45
Yorgun 2013 [57]	2.38	0.981	5.773	35.3

5. Calcified Plaque

StudyOmitted	HR	LowerCI	UpperCI	I2
Ates 2021 [7]	1.257	1.165	1.356	34.5
Chow 2010 [23]	1.286	1.182	1.4	32.7
Dundas 2024 [63]	1.261	1.168	1.361	35.4
Finck 2020 [5]	1.281	1.176	1.397	36.7
Gu 2018 [65]	1.271	1.175	1.376	36.8
Hadamitzky 2011 [27]	1.207	1.138	1.28	0
Hadamitzky 2013 [28]	1.256	1.159	1.361	35.6
Lee 2016 [67]	1.266	1.17	1.369	36.6
Meah 2022 [82]	1.271	1.172	1.378	37.7
Min, 2010 [35]	1.259	1.167	1.358	34.8
Nance 2012 [74]	1.262	1.17	1.362	35.4
Petretta 2012 [46]	1.281	1.169	1.404	34.6
Sozzi 2011 [51]	1.261	1.168	1.361	35.3
Tzolos, 2022 [83]	1.26	1.166	1.361	35.6
Yamamoto 2013 [55]	1.263	1.17	1.363	35.6
Yamamoto 2018 [56]	1.257	1.165	1.357	34.8
Yorgun 2013 [57]	1.287	1.191	1.392	30.5

6. Non–Calcified Plaque

StudyOmitted	HR	LowerCI	UpperCI	I2
Ates 2021 [7]	1.14	1.062	1.223	34.3
Chow 2010 [23]	1.184	1.063	1.318	61.2
Dundas 2024 [63]	1.134	1.06	1.213	30.6
Finck 2020 [5]	1.143	1.092	1.196	0
Hadamitzky 2011 [27]	1.152	1.049	1.266	47.5
Hadamitzky 2013 [28]	1.209	1.065	1.372	63.7
Hou 2012 [30]	1.117	1.057	1.18	14.3
Matsumoto, 2007 [34]	1.13	1.059	1.205	27.2
Meah 2022 [82]	1.13	1.059	1.205	27.2
Mordi 2016 [37]	1.144	1.064	1.23	36.5
Nadjiri 2016 [41]	1.206	1.068	1.362	62.6
Nance 2012 [74]	1.135	1.061	1.214	30.9
Oeing 2023 [43]	1.151	1.067	1.242	40
Sozzi 2011 [51]	1.132	1.06	1.209	29
Tzolos, 2022 [83]	1.13	1.055	1.211	29.9
Yamamoto 2013 [55]	1.139	1.062	1.222	33.6
Yamamoto 2018 [56]	1.146	1.064	1.234	37.8
Yorgun 2013 [57]	1.191	1.062	1.335	64.4

7. Mixed Plaque (Partially Calcified)

StudyOmitted	HR	LowerCI	UpperCI	I2
Ates 2021 [7]	1.876	1.209	2.911	95.6
Chow 2010 [23]	1.936	1.238	3.028	92.7
Finck 2020 [5]	1.942	1.25	3.017	92.9
Hadamitzky 2011 [27]	1.88	1.185	2.982	94.8
Hadamitzky 2013 [28]	1.945	1.262	2.998	94.3
Hou 2012 [30]	1.595	1.119	2.275	92.6
Min, 2010 [35]	1.467	1.113	1.933	87.3
Nance 2012 [74]	1.673	1.158	2.416	93.8
Sozzi 2011 [51]	1.64	1.137	2.366	93.4
Yamamoto 2013 [55]	1.846	1.197	2.848	95.5
Yamamoto 2018 [56]	1.778	1.148	2.753	95.3
Yamamoto 2021 [85]	1.914	1.226	2.986	95.5
Yorgun 2013 [57]	1.937	1.258	2.983	95.1

8. Napkin–Ring Sign (NRS)

StudyOmitted	HR	LowerCI	UpperCI	I2
Andreini 2020 [19]	2.838	2.011	4.005	24.2
Conte 2017 [61]	3.146	2.079	4.761	51.5
Feuchtner 2017 [4]	3.028	1.994	4.598	47
Finck 2020 [5]	3.48	2.181	5.552	51.4
Nadjiri 2016 [41]	3.655	2.453	5.446	39.9
Nakanishi 2014 [42]	3.258	2.037	5.209	55.1
Senoner 2020 [50]	3.211	2.025	5.091	54.7
Takamura, 2017 [77]	3.34	2.196	5.08	53.4
Tesche 2023 [78]	3.265	2.092	5.097	55.2
Williams 2019 [84]	3.505	2.305	5.331	50.7
Yamamoto 2018 [56]	3.489	2.205	5.518	52

9. Low–Attenuation Plaque (LAP)

StudyOmitted	HR	LowerCI	UpperCI	I2
Andreini 2020 [19]	2.777	1.794	4.299	98.6
Conte 2017 [61]	3.003	1.862	4.844	98.9
Dundas 2024 [63]	3.142	1.916	5.153	98.9
Feuchtner 2017 [4]	3.069	1.889	4.987	98.9
Finck 2020 [5]	3.307	2.041	5.359	98.9
Meah 2022 [82]	3.242	1.973	5.328	98.9
Munnur 2022 [39]	2.607	1.756	3.87	98.1
Nadjiri 2016 [41]	3.426	2.151	5.458	91.7
Nakanishi 2014 [42]	3.277	2.002	5.364	98.9
Pergola, 2022 [76]	3.414	2.134	5.461	92.1
Senoner 2020 [50]	3.088	1.892	5.04	98.9
Tesche 2023 [78]	3.089	1.905	5.01	98.9
Tzolos, 2022 [83]	3.285	2.006	5.38	98.9
Yamamoto 2013 [55]	2.972	1.854	4.765	98.9
Yang 2025 [80]	3.19	1.933	5.265	98.9

10. Spotty Calcification (SC)

StudyOmitted	HR	LowerCI	UpperCI	I2
Andreini 2020 [19]	1.965	1.242	3.109	71
Conte 2017 [61]	2.541	1.492	4.327	79.1
Feuchtner 2017 [4]	2.283	1.28	4.073	82.1
Finck 2020 [5]	2.376	1.322	4.271	80.6
Munnur 2022 [39]	2.085	1.215	3.579	77.5
Nadjiri 2016 [41]	2.5	1.434	4.356	79.9
Senoner 2020 [50]	2.432	1.372	4.31	81.2
Tesche 2023 [78]	2.047	1.244	3.37	77.2
Williams 2019 [84]	2.543	1.49	4.342	78.9
Yamamoto 2013 [55]	2.301	1.298	4.078	82.4
Yamamoto 2018 [56]	2.364	1.314	4.252	80.8

11. Positive Remodeling (PR)

StudyOmitted	HR	LowerCI	UpperCI	I2
Benetos 2020 [20]	2.97	1.478	5.966	83.4
Conte 2017 [61]	3.127	1.564	6.252	83.6
Feuchtner 2017 [4]	3.059	1.538	6.085	84.3
Munnur 2022 [39]	2.421	1.499	3.909	64.1
Nakanishi 2014 [42]	3.47	1.837	6.555	77.8
Senoner 2020 [50]	3.598	2.047	6.327	77.2
Tesche 2023 [78]	3	1.525	5.901	84.5
Williams 2019 [84]	3.027	1.502	6.101	83.1
Yamamoto 2013 [55]	2.725	1.439	5.161	82.3

12. ≥ 1 High–Risk Plaque Feature

StudyOmitted	HR	LowerCI	UpperCI	I2
Ferencik 2018 [26]	3.492	2.193	5.561	88.9
Fujimoto, 2015 [64]	3.393	2.125	5.418	90.2
Kawai 2014 [66]	3.39	2.112	5.444	89.7
Kiriyama 2017 [31]	3.205	2.038	5.039	89.8
Maclean 2022 [69]	3.314	2.071	5.301	90.2
Motayama 2009 [39]	2.997	1.982	4.532	87.4
Motayama 2013 [72]	3.272	2.061	5.195	90.1
Motayama 2015 [39]	3.102	1.979	4.863	88.3
Munnur 2022 [39]	2.969	1.966	4.483	86.7
Oeing 2023 [43]	3.642	2.399	5.528	87.4
Otsuka, 2014 [45]	3.159	2.016	4.951	89.5
Sato, 2024 [49]	3.223	2.029	5.119	89.9
Senoner 2020 [50]	3.486	2.183	5.565	86.5
Tomizawa 2017 [79]	3.447	2.155	5.514	89.6
Tommasino 2024 [53]	3.424	2.135	5.49	89.5
Tzolos, 2022 [83]	3.574	2.296	5.562	88.8
Yamamoto 2021 [85]	3.458	2.165	5.522	89.6

13. ≥ 2 High–Risk Plaque Features

StudyOmitted	HR	LowerCI	UpperCI	I2
Andreini 2020 [19]	3.504	2.212	5.549	86.9
Conte 2017 [61]	3.644	2.267	5.859	87.9
Drissen 2020 [62]	3.973	2.469	6.393	87.4
Ferencik 2018 [26]	4.021	2.512	6.436	86.6
Kiriyama 2017 [31]	3.595	2.27	5.694	87.6
Lee 2018 [32]	4.086	2.578	6.474	79.3
Munnur 2022 [39]	3.132	2.121	4.624	80.1
Takamura, 2017 [77]	3.608	2.294	5.676	87.6
Tesche 2023 [78]	3.546	2.247	5.598	87.3
Yamamoto 2013 [55]	3.457	2.21	5.407	86.5
Yamamoto 2018 [56]	3.972	2.465	6.401	87.3
Yamamoto 2021 [85]	3.983	2.472	6.416	87
Yang 2025 [80]	3.948	2.432	6.411	85.4
Yu 2021 [58]	3.82	2.37	6.158	88.3

14. 1–vessel Disease

StudyOmitted	HR	LowerCI	UpperCI	I2
Andreini 2012 [6]	3.354	1.765	6.374	88.4
Chow 2021 [24]	3.986	1.96	8.105	89.9
Feuchtner 2017 [4]	4.093	2.043	8.204	90.8
Fujimto 2015 [64]	3.728	1.864	7.456	91.3
Hadamitzky 2013 [28]	4.061	2.042	8.078	91.2
Hou 2012 [30]	3.084	1.821	5.223	81.7
Mortensen 2020 [71]	4.494	2.349	8.597	82.7
Nance 2012 [74]	4.398	2.302	8.401	89.7
Sozzi 2011 [51]	3.899	2.05	7.416	91.1

15. 2–vessel Disease

StudyOmitted	HR	LowerCI	UpperCI	I2
Andreini 2012 [6]	4.967	2.186	11.283	89.7
Chow 2021 [24]	6.931	2.531	18.976	92.8
Feuchtner 2017 [4]	6.949	2.553	18.91	93.4
Hadamitzky 2013 [28]	7.609	3.08	18.794	93.2
Hou 2012 [30]	5.156	2.153	12.349	90.7
Mortensen 2020 [71]	8.437	3.655	19.473	84.7
Sozzi 2011 [51]	6.054	2.468	14.849	93.7

16. 3–vessel Disease

StudyOmitted	HR	LowerCI	UpperCI	I2
Andreini 2012 [6]	8.853	3.91	20.044	90.2
Chow 2021 [24]	10.875	4.555	25.961	91
Feuchtner 2017 [4]	10.655	4.471	25.394	91.9
Hadamitzky 2013 [28]	10.872	4.698	25.16	92.3
Hou 2012 [30]	7.614	4.048	14.321	81.7
Kiriyama 2017 [31]	11.321	4.943	25.932	92
Mortensen 2020 [71]	13.15	6.307	27.416	83.1
Sozzi 2011 [51]	10.103	4.521	22.578	92.2

Supplementary Material 8: Risk of Bias (Newcastle-Ottawa Scale)

Study Title	Ahmed, 2021	Aldrovandi 2009	Aldrovandi 2012	Andreini 2012	Andreini 2020	Ates 2021	Benetos 2020	Bittencourt 2014	Chan, 2024	Cheruvu 2016	Chow 2010
Domain 1 (Max 4 Stars): 1) Representativeness of the Exposed Cohort	1	1	0	0	1	0	0	0	1	1	1
2) Selection of the Non-Exposed Cohort											
3) Ascertainment of Exposure	1	1	1	1	1	1	1	1	1	1	1
4) Demonstration That Outcome of Interest Was Not Present at Start of Study	1	1	1	1	1	1	1	1	1	1	1
Domain 2 (Max 2 Stars): 1) Comparability of Cohorts on the Basis of the Design or Analysis	2	2	2	2	2	2	2	2	2	2	2
Domain 3 (Max 3 Stars): 1) Assessment of Outcome	0	1	1	1	1	1	0	1	1	1	1
2) Was Follow-Up Long Enough for Outcomes to Occur	1	1	1	1	1	1	1	1	1	1	1
3) Adequacy of Follow-Up of Cohorts	1	1	1	1	1	1	1	1	1	1	1
TOTAL SCORE /8	**7**	**8**	**7**	**7**	8	7	6	7	8	8	8

Chow 2021	Conte 2017	De Azevedo 2011	Drissen 2020	Dundas 2024	Ferencik 2018	Feuchtner 2017	Finck 2020	Fujimoto, 2016	Gu 2018	Hadamitzky 2011	Hadamitzky 2013	Han, 2022	Hou, 2012	Kawai 2014
1	0	1	0	1	1	0	1	1	0	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	0	0	0	1	1	1	1	1	0	1	1

8	7	8	7	7	7	6	8	8	7	8	8	7	8	7

Kiriyama 2018	Lee 2016	Lee, 2018	Lee, 2022	Lima, 2023	Maclean 2022	Maclean 2023	Matsumoto, 2007	Meah 2022	Meng 2023	Meng 2024	Min, 2010	Miszalski-Jamka, 2012	Mordi, 2016	Mortensen 2020
1	1	1	1	1	1	1	0	1	1	0	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	0	0	1	1	1	1	0	0	0	1	0	1	1
8	7	7	7	8	8	8	7	7	7	6	8	7	8	8

Motoyama 2009	Motoyama 2013	Motoyama 2015	Munnur 2022	Mushtaq, 2015	Nadjiri 2016	Nakanishi 2014	Nance 2012	Oeing 2023	Otsuka, 2013	Otsuka, 2014	Otsuka, 2022	Pergola, 2022	Petretta, 2012	Plank, 2014
1	0	1	0	0	1	0	1	1	1	1	0	0	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
2	1	2	2	2	2	2	2	2	2	2	2	2	2	2
1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	0	1	1	1	1	1	1	1	1	0	1	1	0
8	6	6	7	7	7	7	8	8	8	8	6	7	8	7

Pundziute, 2007	Sato, 2024	Senoner 2020	Sozzi 2011	Suruga 2021	Takamura, 2017	Tesche 2023	Tomizawa 2018	Tommasino 2024	Tzolos, 2022	van Werkhoven, 2009	Williams 2019
0	1	1	0	0	1	0	0	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	0	0	1	1	1	0	1	0	0	1	1
7	7	7	7	7	8	6	7	7	7	8	8

Yamamoto 2013	Yamamoto 2018	Yamamoto 2021	Yang 2026	Yorgun 2013	Yu, 2021
0	1	1		0	1
1	1	1		1	1
1	1	1		1	1
2	2	2		2	2
1	1	1		1	0
1	1	1		1	1
1	1	1		1	1
7	8	8		7	7