

1. King SB 3rd, Smith SC Jr, Hirshfeld JW Jr, Jacobs AK, Morrison DA, Williams DO, Feldman TE, Kern MJ, O'Neill WW, Schaff HV, Whitlow PL, Adams CD, Anderson JL, Buller CE, Creager MA, Ettinger SM, Halperin JL, Hunt SA, Krumholz HM, Kushner FG, Lytle BW, Nishimura R, Page RL, Riegel B, Tarkington LG, Yancy CW; 2005 WRITING COMMITTEE MEMBERS. 2007 Focused update of the ACC/AHA/SCAI 2005 guideline update for percutaneous coronary intervention: a report of the American College of Cardiology/ American Heart Association Task Force on Practice Guidelines: 2007 Writing Group to Review New Evidence and Update the ACC/AHA/SCAI 2005 Guideline Update for Percutaneous Coronary Intervention, writing on behalf of the 2005 Writing Committee. *Circulation*. 2008;117:261-295. doi: 10.1161/CIRCULATIONAHA.107.188208
2. Windecker S, Serruys PW, Wandel S, Buszman P, Trznadel S, Linke A, Lenk K, Ischinger T, Klauss V, Eberli F, Corti R, Wijns W, Morice MC, di Mario C, Davies S, van Geuns RJ, Eerdmans P, van Es GA, Meier B, Juni P. Biolimus-eluting stent with biodegradable polymer versus sirolimus-eluting stent with durable polymer for coronary revascularisation (LEADERS): a randomised noninferiority trial. *Lancet*. 2008;372:1163-1173. doi: 10.1016/S0140-6736(08)61244-1
3. Krucoff MW, Rutledge DR, Gruberg L, Jonnavithula L, Katopodis JN, Lombardi W, Mao VW, Sharma SK, Simonton CA, Tamboli HP, Wang J, Wilburn O, Zhao W, Sudhir K, Hermiller JB. A new era of prospective real-world safety evaluation primary report of XIENCE V USA (XIENCE V Everolimus Eluting Coronary Stent System condition-of-approval post-market study). *JACC Cardiovasc Interv*. 2011;4:1298-1309. doi: 10.1016/j.jcin.2011.08.010
4. Urban P, Meredith IT, Abizaid A, Pocock SJ, Carrie D, Naber C, Lipiecki J, Richardt G, Iniguez A, Brunel P, Valdes-Chavarrri M, Garot P, Talwar S, Bertrand J, Abdellaoui M, Eberli F, Oldroyd K, Zambahari R, Gregson J, Greene S, Stoll HP, Morice MC; LEADERS FREE Investigators. Polymer-free drug-coated coronary stents in patients at high bleeding risk. *N Engl J Med*. 2015;373: 2038-2047. doi: 10.1056/NEJMoa1503943
5. Ariotti S, Adamo M, Costa F, Pataliakas A, Briguori C, Thury A, Colangelo S, Campo G, Tebaldi M, Ungi I, Tondi S, Roffi M, Menozzi A, de Cesare N, Garbo R, Meliga E, Testa L, Gabriel HM, Ferlini M, Vranckx P, Valgimigli M; ZEUS Investigators. Is bare-metal stent implantation still justifiable in high bleeding risk patients undergoing percutaneous coronary intervention? A pre-specified analysis from the ZEUS trial. *JACC Cardiovasc Interv*. 2016;9:426-436. doi: 10.1016/j.jcin.2015.11.015
6. Varenne O, Cook S, Sideris G, Kedev S, Cuisset T, Carrie D, Hovasse T, Garot P, El Mahmoud R, Spaulding C, Helft G, Diaz Fernandez JF, Brugaletta S, Pinar- Bermudez E, Mauri Ferre J, Commeau P, Teiger E, Bogaerts K, Sabate M, Morice MC, Sinnaeve PR; SENIOR Investigators. Drug-eluting stents in elderly patients with coronary artery disease (SENIOR): a randomised single-blind trial. *Lancet*. 2018;391:41-50. doi: 10.1016/S0140-6736(17)32713-7
7. Rymer JA, Harrison RW, Dai D, Roe MT, Messenger JC, Anderson HV, Peterson ED and Wang TY. Trends in bare-metal stent use in the United States in patients aged >=65 years (from the CathPCI Registry). *Am J Cardiol*. 2016; 118:959-966.
8. Cutlip DE, Windecker S, Mehran R, Boam A, Cohen DJ, van Es GA, Steg PG, Morel MA, Mauri L, Vranckx P, McFadden E, Lansky A, Hamon M, Krucoff MW, Serruys PW; Academic Research Consortium. Clinical end points in coronary stent trials: a case for standardized definitions. *Circulation*. 2007;115:2344-2351. doi: 10.1161/CIRCULATIONAHA.106.685313
9. Mehran R, Rao SV, Bhatt DL, Gibson CM, Caixeta A, Eikelboom J, Kaul S, Wiviott SD, Menon V, Nikolsky E, Serebruany V, Valgimigli M, Vranckx P, Taggart D, Sabik JF, Cutlip DE, Krucoff MW, Ohman EM, Steg PG, White H. Standardized bleeding definitions for cardiovascular clinical trials: a consensus report from the Bleeding Academic Research Consortium. *Circulation*. 2011; 123:2736-2747. doi: 10.1161/CIRCULATIONAHA.110.009449
10. Krucoff MW, Mehran R, van Es GA, Boam AB, Cutlip DE. The Academic Research Consortium governance charter. *JACC Cardiovasc Interv*. 2011;4: 595-596. doi: 10.1016/j.jcin.2011.03.008
11. Byrne RA, Serruys PW, Baumbach A, Escaned J, Fajadet J, James S, Joner M, Oktay S, Juni P, Kastrati A, Sianos G, Stefanini GG, Wijns W, Windecker S. Report of a European Society of Cardiology-European Association of Percutaneous Cardiovascular Interventions task force on the evaluation of coronary stents in Europe: executive summary. *Eur Heart J*. 2015;36:2608-2620. doi: 10.1093/eurheartj/ehv203
12. Fajadet J, Wijns W, Laarman GJ, Kuck KH, Ormiston J, Munzel T, Popma JJ, Fitzgerald PJ, Bonan R, Kuntz RE; ENDEAVOR II Investigators. Randomized, double-blind, multicenter study of the Endeavor zotarolimus-eluting phosphor-ylcholine-encapsulated stent for treatment of native coronary artery lesions: clinical and angiographic results of the ENDEAVOR II trial. *Circulation*. 2006; 114:798-806. doi: 10.1161/CIRCULATIONAHA.105.591206
13. Yeung AC, Leon MB, Jain A, Tolleson TR, Spriggs DJ, Mc Laurin BT, Popma JJ, Fitzgerald PJ, Cutlip DE, Massaro JM, Mauri L; RESOLUTE US Investigators. Clinical evaluation of the Resolute zotarolimus-eluting coronary stent system in the treatment of de novo lesions in native coronary arteries: the RESOLUTE US clinical trial. *J Am Coll Cardiol*. 2011;57:1778-1783. doi: 10.1016/j.jacc.2011.03.005
14. Stone GW, Midei M, Newman W, Sanz M, Hermiller JB, Williams J, Farhat N, Mahaffey KW, Cutlip DE, Fitzgerald PJ, Sood P, Su X, Lansky AJ; SPIRIT III Investigators. Comparison of an everolimus-eluting stent and a paclitaxel-eluting stent in patients with coronary artery disease: a randomized trial. *JAMA*. 2008; 299:1903-1913. doi: 10.1001/jama.299.16.1903
15. Stone GW, Teirstein PS, Meredith IT, Farah B, Dubois CL, Feldman RL, Dens J, Hagiwara N, Allocco DJ, Dawkins KD; PLATINUM Trial Investigators. A prospective, randomized evaluation of a novel everolimus-eluting coronary stent: the PLATINUM (a Prospective, Randomized, Multicenter Trial to Assess an Everolimus-Eluting Coronary Stent System [PROMUS Element] for the Treatment of Up to Two de Novo Coronary Artery Lesions) trial. *J Am Coll Cardiol*. 2011;57:1700-1708. doi: 10.1016/j.jacc.2011.02.016
16. Kereiakes DJ, Meredith IT, Windecker S, Lee Jobe R, Mehta SR, Sarembock IJ, Feldman RL, Stein B, Dubois C, Grady T, Saito S, Kimura T, Christen T, Allocco DJ, Dawkins KD. Efficacy and safety of a novel bioabsorbable polymer-coated, everolimus-eluting coronary stent: the EVOLVE II Randomized Trial. *Circ Cardiovasc Interv*. 2015;8:e002372.
17. Kandzari DE, Smits PC, Love MP, Ben-Yehuda O, Banai S, Robinson SD, Jonas M, Kornowski R, Bagur R, Iniguez DE, Danenberg H, Feldman R, Jauhar R, Chandna H, Parikh M, Perlman GY, Balcells M, Markham P, Ozan MO, Genereux P, Edelman ER, Leon MB, Stone GW. Randomized comparison of ridaforolimus- and zotarolimus-eluting coronary stents in patients with coronary artery disease: primary results from the BIONICS Trial (BioNIR Ridaforolimus-Eluting Coronary Stent System in Coronary Stenosis). *Circulation*. 2017;136:1304-1314. doi: 10.1161/CIRCULATIONAHA.117.028885
18. Kandzari DE, Mauri L, Koolen JJ, Massaro JM, Doros G, Garcia-Garcia HM, Bennett J, Roguin A, Gharib EG, Cutlip DE, Waksman R; BIOFLOW V Investigators. Ultrathin, bioresorbable polymer sirolimus-eluting stents versus thin, durable polymer everolimus-eluting stents in patients undergoing coronary revascularisation (BIOFLOW V): a randomised trial. *Lancet*. 2017;390: 1843-1852. doi: 10.1016/S0140-6736(17)32249-3
19. Byrne RA, Kastrati A, Kufner S, Massberg S, Birkmeier KA, Laugwitz KL, Schulz S, Pache J, Fusaro M, Seyfarth M, Schomig A, Mehilli J; Intracoronary Stenting and Angiographic Results: Test Efficacy of 3 Limus-Eluting Stents (ISAR-TEST-4) Investigators. Randomized, non-inferiority trial of three limus agent-eluting stents with different polymer coatings: the Intracoronary Stenting and Angiographic Results: Test Efficacy of 3 Limus-Eluting Stents (ISAR-TEST-4) Trial. *Eur Heart J*. 2009;30:2441-2449. doi: 10.1093/eurheartj/ehp352
20. Serruys PW, Silber S, Garg S, van Geuns RJ, Richardt G, Buszman PE, Kelbaek H, van Boven AJ, Hofma SH, Linke A, Klauss V, Wijns W, Macaya C, Garot P, DiMario C, Manoharan G, Kornowski R, Ischinger T, Bartorelli A, Ronden J, Bressers M, Gobbens P, Negoita M, van Leeuwen F, Windecker S. Comparison of zotarolimus-eluting and everolimus-eluting coronary stents. *N Engl J Med*. 2010;363:136-146. doi: 10.1056/NEJMoa1004130
21. Park KW, Kang SH, Kang HJ, Koo BK, Park BE, Cha KS, RhewJY, Jeon HK, Shin ES, Oh JH, Jeong MH, Kim S, Hwang KK, Yoon JH, Lee SY, Park TH, Moon KW, Kwon HM, Hur SH, Ryu JK, Lee BR, Park YW, Chae IH, Kim HS; HOST- ASSURE Investigators. A randomized comparison of platinum chromium-based everolimus-eluting stents versus cobalt chromium-based zotarolimus-eluting stents in all-comers receiving percutaneous coronary intervention: HOST- ASSURE (Harmonizing Optimal Strategy for Treatment of Coronary Artery Stenosis-Safety & Effectiveness of Drug-Eluting Stents & anti-Platelet Regimen), a randomized, controlled, noninferiority trial. *J Am Coll Cardiol*. 2014;63(pt A): 2805-2816. doi: 10.1016/j.jacc.2014.04.013
22. Rasmussen K, Maeng M, Kallotf A, Thaysen P, Kelbaek H, Tilsted HH, Abildgaard U, Christiansen EH, Engstrom T, Krusell LR, Ravkilde J, Hansen PR, Hansen KN, Abildstrom SZ, Aaroe J, Jensen JS, Kristensen SD, Botker HE, Madsen M, Johnsen SP, Jensen LO, Sorensen HT, Thuesen L, Lassen JF; SORT OUT III Study Group. Efficacy and safety of zotarolimus-eluting and sirolimus- eluting coronary stents in routine clinical care (SORT OUT III): a randomised controlled superiority trial. *Lancet*. 2010;375:1090-1099. doi: 10.1016/S0140-6736(10)60208-5
23. von Birgelen C, Kok MM, van der Heijden LC, Danse PW, Schotborgh CE, Scholte M, Gin RMTJ, Somi S, van Houwelingen KG, Stoel MG, de Man FHF, Louwerenburg JHW, Hartmann M, Zocca P, Linssen GCM, van der Palen J, Doggen CJM, Lowik MM. Very thin strut biodegradable polymer everolimus- eluting and sirolimus-eluting stents versus durable polymer zotarolimus-eluting stents in allcomers with coronary artery disease (BIO-RESORT): a three-arm, randomised, non-inferiority trial. *Lancet*. 2016;388:2607-2617. doi: 10.1016/S0140-6736(16)31920-1
24. Bonna KH, Mannsverk J, Wiseth R, Aaberge L, Myreng Y, Nygard O, Nilsen DW, Kløw NE, Uchto M, Trovik T, Bendz B, Stavnes S, Bjørnerheim R, Larsen AI, Slette M, Steigen T, Jakobsen OJ, Bleie O, Fossum E, Hanssen TA, Dahl- Eriksen O, Njølstad I, Rasmussen K, Wilsaard T, Nordrehaug JE; NORSTENT Investigators. Drug-eluting or bare-metal stents for coronary artery disease. *N Engl J Med*. 2016;375:1242-1252. doi: 10.1056/NEJMoa1607991
25. Kim BK, Hong MK, Shin DH, Nam CM, Kim JS, Ko YG, Choi D, Kang TS, Park BE, Kang WC, Lee SH, Yoon JH, Hong BK, Kwon HM, Jang Y; RESET Investigators. A new strategy for discontinuation of dual antiplatelet therapy: the RESET Trial (REal Safety and Efficacy of 3-month dual antiplatelet Therapy following Endeavor zotarolimus-eluting stent implantation). *J Am Coll Cardiol*. 2012;60:1340-1348. doi: 10.1016/j.jacc.2012.06.043
26. Gwon KW, Hahn JY, Park KW, Song YB, Chae IH, Lim DS, Han KR, Choi JH, Choi SH, Kang HJ, Koo BK, Ahn T, Yoon JH, Jeong MH, Hong TJ, Chung WY, Choi YJ, Hur SH, Kwon HM, Jeon DW, Kim BO, Park SH, Lee NH, Jeon HK, Jang Y, Kim HS. Six-month versus 12-month dual antiplatelet therapy after implantation of drug-eluting stents: the Efficacy of Xience/Promus Versus Cypher to Reduce Late Loss After Stenting (EXCELLENT) randomized, multicenter study. *Circulation*. 2012;125:505-513. doi: 10.1161/CIRCULATIONAHA.111.059022

27. Collet JP, Cuisset T, Range G, Cayla G, Elhadad S, Pouillot C, Henry P, Motreff P, Carrie D, Boueri Z, Belle L, Van Belle E, Rousseau H, Aubry P, Monsegu J, Sabouret P, O'Connor SA, Abtan J, Kerneis M, Saint-Etienne C, Barthelemy O, Beygui F, Silvain J, Vicaut E, Montalescot G; ARCTIC Investigators. Bedside monitoring to adjust antiplatelet therapy for coronary stenting. *N Engl J Med.* 2012;367:2100-2109. doi: 10.1056/NEJMoa1209979
28. Valgimigli M, Campo G, Monti M, Vranckx P, Percoco G, Tumscitz C, Castriota F, Colombo F, Tebaldi M, Fuca G, Kubbajeh M, Cangiano E, Minarelli M, Scalone A, Cavazza C, Frangione A, Borghesi M, Marchesini J, Parrinello G, Ferrari R; Prolonging Dual Antiplatelet Treatment After Grading Stent-Induced Intimal Hyperplasia Study (PRODIGY) Investigators. Short- versus long-term duration of dual-antiplatelet therapy after coronary stenting: a randomized multicenter trial. *Circulation.* 2012;125:2015-2026. doi: 10.1161/CIRCULATIONAHA.111.071589
29. Feres F, Costa RA, Abizaid A, Leon MB, Marin-Neto JA, Botelho RV, King SB 3rd, Negoita M, Liu M, de Paula JE, Mangione JA, Meireles GX, Castello HJ Jr, Nicoleta EL Jr, Perin MA, Devito FS, Labrunie A, Salvadori D Jr, Gusmao M, Staico R, Costa JR Jr, de Castro JP, Abizaid AS, Bhatt DL; OPTIMIZE Trial Investigators. Three vs twelve months of dual antiplatelet therapy after zotarolimus-eluting stents: the OPTIMIZE randomized trial. *JAMA.* 2013;310: 2510-2522. doi: 10.1001/jama.2013.282183
30. Mauri L, Kereiakes DJ, Yeh RW, Driscoll-Shempp P, Cutlip DE, Steg PG, Normand SL, Braunwald E, Wiviott SD, Cohen DJ, Holmes DR Jr, Krucoff MW, Hermiller J, Dauerman HL, Simon DI, Kandzari DE, Garratt KN, Lee DP, Pow TK, Ver Lee P, Rinaldi MJ, Massaro JM; DAPT Study Investigators. Twelve or 30 months of dual antiplatelet therapy after drug-eluting stents. *N Engl J Med.* 2014;371:2155-2166. doi: 10.1056/NEJMoa1409312
31. Colombo A, Chieffo A, Frasieri A, Garbo R, Masotti-Centol M, Salvatella N, Oteo Dominguez JF, Steffanon L, Tarantini G, Presbitero P, Menozzi A, Pucci E, Mauri J, Cesana BM, Giustino G, Sardella G. Second-generation drug-eluting stent implantation followed by 6- versus 12-month dual antiplatelet therapy: the SECURITY randomized clinical trial. *J Am Coll Cardiol.* 2014;64:2086-2097. doi: 10.1016/j.jacc.2014.09.008
32. Costa F, van Klaveren D, James S, Heg D, Raber L, Feres F, Pilgrim T, Hong MK, Kim HS, Colombo A, Steg PG, Zanchin T, Palmerini T, Wallentin L, Bhatt DL, Stone GW, Windecker S, Steyerberg EW, Valgimigli M; PRECISE-DAPT Study Investigators. Derivation and validation of the predicting bleeding complications in patients undergoing stent implantation and subsequent dual antiplatelet therapy (PRECISE-DAPT) score: a pooled analysis of individual-patient datasets from clinical trials. *Lancet.* 2017;389:1025-1034. doi: 10.1016/S0140-6736(17)30397-5
33. Vranckx P, Valgimigli M, Juni P, Hamm C, Steg PG, Heg D, van Es GA, McFadden EP, Onuma Y, van Meijeren C, Chichareon P, Benit E, Mollmann H, Janssens L, Ferrario M, Moschovitis A, Zurakowski A, Dominici M, Van Geuns RJ, Huber K, Slagboom T, Serruys PW, Windecker S; GLOBAL LEADERS Investigators. Ticagrelor plus aspirin for 1 month, followed by ticagrelor monotherapy for 23 months vs aspirin plus clopidogrel or ticagrelor for 12 months, followed by aspirin monotherapy for 12 months after implantation of a drug-eluting stent: a multicentre, open-label, randomised superiority trial. *Lancet.* 2018;392:940-949. doi: 10.1016/S0140-6736(18)31858-0
34. Hahn JY, Song YB, Oh JH, Cho DK, Lee JB, Doh JH, Kim SH, Jeong JO, Bae JH, Kim BO, Cho JH, Suh IW, Kim DI, Park HK, Park JS, Choi WG, Lee WS, Kim J, Choi KH, Park TK, Lee JM, Yang JH, Choi JH, Choi SH, Gwon HC; SMARTDATE Investigators. 6-Month versus 12-month or longer dual antiplatelet therapy after percutaneous coronary intervention in patients with acute coronary syndrome (SMART-DATE): a randomised, open-label, non-inferiority trial. *Lancet.* 2018;391:1274-1284. doi: 10.1016/S0140-6736(18)30493-8
35. Valgimigli M, Patialiakis A, Thury A, McFadden E, Colangelo S, Campo G, Tebaldi M, Ungi I, Tondi S, Roff M, Menozzi A, de Cesare N, Garbo R, Meliga E, Testa L, Gabriel HM, Airoldi F, Ferlini M, Liistro F, Dellavalle A, Vranckx P, Briguori C; ZEUS Investigators. Zotarolimus-eluting versus bare-metal stents in uncertain drug-eluting stent candidates. *J Am Coll Cardiol.* 2015;65:805-815. doi: 10.1016/j.jacc.2014.11.053
36. Raposeiras-Roubin S, Faxen J, Iniguez-Romo A, Henriques JPS, D'Ascenzo F, Saucedo J, Szummer K, Jernberg T, James SK, Juanatey JRG, Wilton SB, Kikkert WJ, Nunez-Gil I, Ariza-Sole A, Song X, Alexopoulos D, Liebetrau C, Kawaji T, Moretti C, Huczek Z, Nie SP, Fujii T, Correia L, Kawashiri MA, Caneiro-Queija B, Cobas-Paz R, Acuna JMG, Southern D, Alfonso E, Terol B, Garay A, Zhang D, Chen Y, Xanthopoulos I, Osman M, Mollmann H, Shiomis H, Giordana F, Gaita F, Kowara M, Filipiak K, Wang X, Yan Y, Fan JY, Ikari Y, Nakahayashi T, Sakata K, Yamagishi M, Kalpak O, Kedev S, Rivera-Asenjo D, Abu-Assi E. Development and external validation of a post-discharge bleeding risk score in patients with acute coronary syndrome: the BleemACS score. *Int J Cardiol.* 2018;254:10-15. doi: 10.1016/j.ijcard.2017.10.103
37. de Groot NL, Hagenaars MP, Smeets HM, Steyerberg EW, Siersema PD, van Oijen MG. Primary non-variceal upper gastrointestinal bleeding in NSAID and low-dose aspirin users: development and validation of risk scores for either medication in two large Dutch cohorts. *J Gastroenterol.* 2014;49:245-253. doi: 10.1007/s00535-013-0817-y
38. Baber U, Mehran R, Giustino G, Cohen DJ, Henry TD, Sartori S, Ariti C, Litherland C, Dangas G, Gibson CM, Krucoff MW, Moliterno DJ, Kirtane AJ, Stone GW, Colombo A, Chieffo A, Kini AS, Witzentbichler B, Weisz G, Steg PG, Pocock S. Coronary thrombosis and major bleeding after PCI with drug-eluting stents: risk scores from PARIS. *J Am Coll Cardiol.* 2016;67:2224-2234. doi: 10.1016/j.jacc.2016.02.064
39. Ducrocq G, Wallace JS, Baron G, Ravaud P, Alberts MJ, Wilson PW, Ohman EM, Brennan DM, D'Agostino RB, Bhatt DL, Steg PG; REACH Investigators. Risk score to predict serious bleeding in stable outpatients with or at risk of atherothrombosis. *Eur Heart J.* 2010;31:1257-1265. doi: 10.1093/eurheartj/ehq021
40. Valgimigli M, Bueno H, Byrne RA, Collet JP, Costa F, Jeppsson A, Juni P, Kastrati A, Kolh P, Mauri L, Montalescot G, Neumann FJ, Petricevic M, Roffi M, Steg PG, Windecker S, Zamorano JL, Levine GN; ESC Scientific Document Group; ESC Committee for Practice Guidelines (CPG); ESC National Cardiac Societies. 2017 ESC focused update on dual antiplatelet therapy in coronary artery disease developed in collaboration with EACTS: the Task Force for dual antiplatelet therapy in coronary artery disease of the European Society of Cardiology (ESC) and of the European Association for Cardio-Thoracic Surgery (EACTS). *Eur Heart J.* 2018;39:213-260. doi: 10.1093/eurheartj/ehx419
41. Yeh RW, Secemsky EA, Kereiakes DJ, Normand SL, Gershlick AH, Cohen DJ, Spertus JA, Steg PG, Cutlip DE, Rinaldi MJ, Camenzind E, Wijns W, Apruzzese PK, Song Y, Massaro JM, Mauri L; DAPT Study Investigators. Development and validation of a prediction rule for benefit and harm of dual antiplatelet therapy beyond 1 year after percutaneous coronary intervention. *JAMA.* 2016;315: 1735-1749. doi: 10.1001/jama.2016.3775
42. Eikelboom JW, Connolly SJ, Bosch J, Dagenais GR, Hart RG, Shestakovska O, Diaz R, Alings M, Lonn EM, Anand SS, Widimsky P, Hori M, Avezum A, Piegas LS, Branch KRH, Probstfield J, Bhatt DL, Zhu J, Liang Y, Maggioni AP, Lopez-Jaramillo P, O'Donnell M, Kakkor AK, Fox KAA, Parkhomenko AN, Erl G, Stork JM, Keltai M, Ryden L, Pogossova N, Dans AL, Lanus F, Commerford PJ, Torp-Pedersen C, Guzik TJ, Verhamme PB, Vinereanu D, Kim JH, Tonkin AM, Lewis BS, Felix C, Yusuf K, Steg PG, Metsarinne KP, Cook Bruns N, Misselwitz E, Chen E, Leong D, Yusuf S; COMPASS Investigators. Rivaroxaban with or without aspirin in stable cardiovascular disease. *N Engl J Med.* 2017;377: 1319-1330. doi: 10.1056/NEJMoa1709118
43. Gerber Y, Rihal CS, Sundt TM 3rd, Killian JM, Weston SA, Thorneau TM, Roger VL. Coronary revascularization in the community: a population-based study, 1990 to 2004. *J Am Coll Cardiol.* 2007;50:1223-1229. doi: 10.1016/j.jacc.2007.06.022
44. Masoudi FA, Ponirakis A, de Lemos JA, Jollis JG, Kremers M, Messenger JC, Moore JWM, Moussa I, Oetgen WJ, Varosy PD, Vincent RN, Wei J, Curtis JP, Roe MT, Spertus JA. Trends in U.S. cardiovascular care: 2016 report from 4 ACC national cardiovascular data registries. *J Am Coll Cardiol.* 2017;69: 1427-1450. doi: 10.1016/j.jacc.2016.12.005
45. Feldman DN, Gade CL, Slotwiner AJ, Parikh M, Bergman G, Wong SC, Minutello RM; New York State Angioplasty Registry. Comparison of outcomes of percutaneous coronary interventions in patients of three age groups (<60, 60 to 80, and >80 years) (from the New York State Angioplasty Registry). *Am J Cardiol.* 2006;98:1334-1339. doi: 10.1016/j.amjcard.2006.06.026
46. Morice MC, Talwar S, Gaemperli O, Richardt G, Eberli F, Meredith I, Zaman A, Fajadet J, Copt S, Greene S, Urban P. Drug-coated versus bare-metal stents for elderly patients: a predefined sub-study of the LEADERS FREE trial. *Int J Cardiol.* 2017;243:110-115. doi: 10.1016/j.ijcard.2017.04.079
47. Subherwal S, Bach RG, Chen AY, Gage BF, Rao SV, Newby LK, Wang TY, Gibier WB, Ohman EM, Roe MT, Pollack CV Jr, Peterson ED, Alexander KP. Baseline risk of major bleeding in non-ST-segment-elevation myocardial infarction: the CRUSADE (Can Rapid risk stratification of Unstable angina patients Suppress ADverse outcomes with Early implementation of the ACC/AHA Guidelines) Bleeding Score. *Circulation.* 2009;119:1873-1882.
48. Mehran R, Pocock SJ, Nikolsky E, Clayton T, Dangas GD, Kirtane AJ, Parise H, Fahy M, Manoukian SV, Feit F, Ohman ME, Witzentbichler B, Guagliumi G, Lansky AJ, Stone GW. A risk score to predict bleeding in patients with acute coronary syndromes. *J Am Coll Cardiol.* 2010;55:2556-2566. doi: 10.1016/j.jacc.2009.09.076
49. Mathews R, Peterson ED, Chen AY, Wang TY, Chin CT, Fonarow GC, Cannon CP, Rumsfeld JS, Roe MT, Alexander KP. In-hospital major bleeding during ST-elevation and non-ST-elevation myocardial infarction care: derivation and validation of a model from the ACTION Registry(R)-GWTG. *Am J Cardiol.* 2011; 107:1136-1143.
50. Rao SV, McCoy LA, Spertus JA, Krone RJ, Singh M, Fitzgerald S, Peterson ED. An updated bleeding model to predict the risk of post-procedure bleeding among patients undergoing percutaneous coronary intervention: a report using an expanded bleeding definition from the National Cardiovascular Data Registry CathPCI Registry. *JACC Cardiovasc Interv.* 2013;6:897-904.
51. Pasea L, Chung SC, Pujades-Rodriguez M, Moayeri A, Denaxas S, Fox KAA, Wallentin L, Pocock SJ, Timmis A, Banerjee A, Patel R, Hemingway H. Personalising the decision for prolonged dual antiplatelet therapy: development, validation and potential impact of prognostic models for cardiovascular events and bleeding in myocardial infarction survivors. *Eur Heart J.* 2017;38:1048-1055. doi: 10.1093/eurheartj/ehw683
52. Lee SY, Hong MK, Palmerini T, Kim HS, Valgimigli M, Feres F, Colombo A, Gilard M, Shin DH, Kim JS, Kim BK, Ko YG, Choi D, Jang Y, Stone GW. Short-term versus long-term dual antiplatelet therapy after drug-eluting stent implantation in elderly patients: a meta-analysis of individual participant data from 6 randomized trials. *JACC Cardiovasc Interv.* 2018;11:435-443. doi: 10.1016/j.jcin.2017.10.015
53. Capodanno D, Angiolillo DJ. Management of antiplatelet and anticoagulant therapy in patients with atrial fibrillation in the setting of acute coronary syndromes or percutaneous coronary interventions. *Circ Cardiovasc Interv.* 2014;7:113-124. doi: 10.1161/CIRCINTERVENTIONS.113.001150

54. Angiolillo DJ, Goodman SG, Bhatt DL, Eikelboom JW, Price MJ, Moliterno DJ, Cannon CP, Tanguay JF, Granger CB, Mauri L, Holmes DR, Gibson CM, Faxon DP. Antithrombotic therapy in patients with atrial fibrillation treated with oral anticoagulation undergoing percutaneous coronary intervention. *Circulation*. 2018;138:527-536. doi: 10.1161/CIRCULATIONAHA.118.034722
55. Dewilde WJ, Oirbans T, Verheugt FW, Kelder JC, De Smet BJ, Herrman JP, Adriaenssens T, Vrolix M, Heestermans AA, Vis MM, Tijssen JG, van 't Hof AW, ten Berg JM; WOEST Study Investigators. Use of clopidogrel with or without aspirin in patients taking oral anticoagulant therapy and undergoing percutaneous coronary intervention: an open-label, randomised, controlled trial. *Lancet*. 2013;381:1107-1115. doi: 10.1016/S0140-6736(12)62177-1
56. Fiedler KA, Maeng M, Mehilli J, Schulz-Schupke S, Byrne RA, Sibbing D, Hoppmann P, Schneider S, Fusaro M, Ott I, Kristensen SD, Ibrahim T, Massberg S, Schunkert H, Laugwitz KL, Kastrati A, Sarafoff N. Duration of triple therapy in patients requiring oral anticoagulation after drug-eluting stent implantation: the ISAR-TRIPLE Trial. *J Am Coll Cardiol*. 2015;65:1619-1629. doi: 10.1016/j.jacc.2015.02.050
57. Gibson CM, Mehran R, Bode C, Halperin J, Verheugt FW, Wildgoose P, Birmingham M, lanus J, Burton P, van Eickels M, Korjian S, Daaboul Y, Lip GY, Cohen M, Husted S, Peterson ED, Fox KA. Prevention of bleeding in patients with atrial fibrillation undergoing PCI. *N Engl J Med*. 2016;375:2423-2434.
58. Cannon CP, Bhatt DL, Oldgren J, Lip GYH, Ellis SG, Kimura T, Maeng M, Merkely B, Zeymer U, Gropper S, Nordaby M, Kleine E, Harper R, Manassie J, Januzzi JL, Ten Berg JM, Steg PG, Hohnloser SH; RE-DUAL PCI Steering Committee and Investigators. Dual antithrombotic therapy with dabigatran after PCI in atrial fibrillation. *N Engl J Med*. 2017;377:1513-1524. doi: 10.1056/NEJMoa1708454
59. Tsai TT, Patel UD, Chang TI, Kennedy KF, Masoudi FA, Matheny ME, Kosiborod M, Amin AP, Weintraub WS, Curtis JP, Messenger JC, Rumsfeld JS, Spertus JA. Validated contemporary risk model of acute kidney injury in patients undergoing percutaneous coronary interventions: insights from the National Cardiovascular Data Registry Cath-PCI Registry. *J Am Heart Assoc*. 2014;3: e001380. doi: 10.1161/JAHA.114.001380
60. Mehran R, Nikolsky E, Lansky AJ, Kirtane AJ, Kim YH, Feit F, Manoukian S, Moses JW, Ebrahimi R, Ohman EM, White HD, Pocock SJ, Dangas GD, Stone GW. Impact of chronic kidney disease on early (30-day) and late (1-year) outcomes of patients with acute coronary syndromes treated with alternative antithrombotic treatment strategies: an ACUITY (Acute Catheterization and Urgent Intervention Triage Strategy) substudy. *JACC Cardiovasc Interv*. 2009;2: 748-757. doi: 10.1016/j.jcin.2009.05.018
61. Saltzman AJ, Stone GW, Claessen BE, Narula A, Leon-Reyes S, Weisz G, Brodie B, Witzenbichler B, Guagliumi G, Kornowski R, Dudek D, Metzger DC, Lansky AJ, Nikolsky E, Dangas GD, Mehran R. Long-term impact of chronic kidney disease in patients with ST-segment elevation myocardial infarction treated with primary percutaneous coronary intervention: the HORIZONS-AMI (Harmonizing Outcomes With Revascularization and Stents in Acute Myocardial Infarction) trial. *JACC Cardiovasc Interv*. 2011;4:1011-1019. doi: 10.1016/j.jcin.2011.06.012
62. Latif F, Kleiman NS, Cohen DJ, Pencina MJ, Yen CH, Cutlip DE, Moliterno DJ, Nassif D, Lopez JJ, Saucedo JF; EVENT Investigators. In-hospital and 1-year outcomes among percutaneous coronary intervention patients with chronic kidney disease in the era of drug-eluting stents: a report from the EVENT (Evaluation of Drug Eluting Stents and Ischemic Events) registry. *JACC Cardiovasc Interv*. 2009;2:37-45. doi: 10.1016/j.jcin.2008.06.012
63. Baber U, Li SX, Pinnelas R, Pocock SJ, Krucoff MW, Ariti C, Gibson CM, Steg PG, Weisz G, Witzenbichler B, Henry TD, Kini AS, Stuckey T, Cohen DJ, Iakovou I, Dangas G, Aquino MB, Sartori S, Chieffo A, Moliterno DJ, Colombo A, Mehran R. Incidence, patterns, and impact of dual antiplatelet therapy cessation among patients with and without chronic kidney disease undergoing percutaneous coronary intervention: results from the PARIS Registry (Patterns of Non-Adherence to Anti-Platelet Regimens in Stented Patients). *Circ Cardiovasc Interv*. 2018;11:e006144. doi: 10.1161/CIRCINTERVENTIONS.117.006144
64. Baber U, Mehran R, Kirtane AJ, Gurbel PA, Christodoulidis G, Maehara A, Witzenbichler B, Weisz G, Rinaldi MJ, Metzger DC, Henry TD, Cox DA, Duffy PL, Mazzaferri EL Jr, Xu K, Parise H, Brodie BR, Stuckey TD, Stone GW. Prevalence and impact of high platelet reactivity in chronic kidney disease: results from the Assessment of Dual Antiplatelet Therapy with Drug-Eluting Stents registry. *Circ Cardiovasc Interv*. 2015;8:e001683. doi: 10.1161/CIRCINTERVENTIONS.115.001683
65. Pilgrim T, Vetterli F, Kalesan B, Stefanini GG, Raber L, Stortecky S, Gloeckler S, Binder RK, Wenaweser P, Moschovitis A, Khattab AA, Buellesfeld L, Zwahlen M, Meier B, Juni P, Windecker S. The impact of anemia on long-term clinical outcome in patients undergoing revascularization with the unrestricted use of drug-eluting stents. *Circ Cardiovasc Interv*. 2012;5:202-210. doi: 10.1161/CIRCINTERVENTIONS.111.965749
66. E. Guerrero C, Garay A, Ariza-Sole A, Formiga F, Raposeiras-Roubin S, Abu-Assi D'Ascenzo F, Kinnaird T, Manzano-Fernandez S, Alegre O, Sanchez-Salado JC, Lorente V, Templin C, Velicki L, Xanthopoulos I, Cerrato E, Rognoni A, Bocuzzi G, Omede P, Montabone A, Taha S, Durante A, Gili S, Magnani G, Conrotto F, Bertaina M, Autelli M, Grosso A, Blanco PF, Quadri G, Varbella F, Tomassini F, Queija BC, Paz RC, Fernandez MC, Pousa IM, Gallo D, Morbiducci U, Dominguez-Rodriguez A, Valdes M, Alexopoulos D, Iniguez-Romo A, Gaita Cequier A. Anemia in patients with acute coronary syndromes treated with prasugrel or ticagrelor: insights from the RENAMI registry. *Thromb Res*. 2018; 167:142-148. doi: 10.1016/j.thromres.2018.05.024
67. Kwok CS, Tiong D, Pradhan A, Andreou AY, Nolan J, Bertrand OF, Curzen N, Urban P, Myint PK, Zaman AG, Loke YK, Mamas MA. Meta-analysis of the prognostic impact of anemia in patients undergoing percutaneous coronary intervention. *Am J Cardiol*. 2016;118:610-620. doi: 10.1016/j.amjcard.2016.05.059
68. Chan FK, Ching JY, Hung LC, Wong VW, Leung VK, Kung NN, Hui AJ, Wu JC, Leung WK, Lee VW, Lee KK, Lee YT, Lau JY, To KF, Chan HL, Chung SC, Sung JJ. Clopidogrel versus aspirin and esomeprazole to prevent recurrent ulcer bleeding. *N Engl J Med*. 2005;352:238-244. doi: 10.1056/NEJMoa042087
69. Sung JJ, Lau JY, Ching JY, Wu JC, Lee YT, Chiu PW, Leung VK, Wong VW, Chan FK. Continuation of low-dose aspirin therapy in peptic ulcer bleeding: a randomized trial. *Ann Intern Med*. 2010;152:1-9. doi: 10.7326/0003-4819-152-1-201001050-00179
70. Villanueva C, Colomo A, Bosch A, Concepcion M, Hernandez-Gea V, Aracil C, Graupera I, Poca M, Alvarez-Urturi C, Gordillo J, Guarnier-Argente C, Santalo M, Munniz E, Guarnier C. Transfusion strategies for acute upper gastrointestinal bleeding. *N Engl J Med*. 2013;368:11-21. doi: 10.1056/NEJMoa1211801
71. McCarthy CP, Steg G, Bhatt DL. The management of antiplatelet therapy in acute coronary syndrome patients with thrombocytopenia: a clinical conundrum. *Eur Heart J*. 2017;38:3488-3492. doi: 10.1093/eurheartj/ehx531
72. Ayoub K, Marji M, Ogunbayo G, Masri A, Abdel-Latif A, Ziada K, Vallurupalli S. Impact of chronic thrombocytopenia on in-hospital outcomes after percutaneous coronary intervention. *JACC Cardiovasc Interv*. 2018;11:1862-1868. doi: 10.1016/j.jcin.2018.05.033
73. Ito S, Watanabe H, Morimoto T, Yoshikawa Y, Shiomi H, Shizuta S, Ono K, Yamaji K, Soga Y, Hyodo M, Shirai S, Ando K, Horiuchi H, Kimura T. Impact of baseline thrombocytopenia on bleeding and mortality after percutaneous coronary intervention. *Am J Cardiol*. 2018;121:1304-1314. doi: 10.1016/j.amjcard.2018.02.010
74. Hakim DA, Dangas GD, Caixeta A, Nikolsky E, Lansky AJ, Moses JW, Claessen B, Sanidas E, White HD, Ohman EM, Manoukian SV, Fahy M, Mehran R, Stone GW. Impact of baseline thrombocytopenia on the early and late outcomes after ST-elevation myocardial infarction treated with primary angioplasty: analysis from the Harmonizing Outcomes with Revascularization and Stents in Acute Myocardial Infarction (HORIZONS-AMI) trial. *Am Heart J*. 2011;161:391-396. doi: 10.1016/j.ahj.2010.11.001
75. de Raucourt E, Roussel-Robert V, Zetterberg E. Prevention and treatment of atherosclerosis in haemophilia: how to balance risk of bleeding with risk of ischaemic events. *Eur J Haematol*. 2015;94(suppl 77):23-29. doi: 10.1111/ ejh.12498
76. Sharma R, Flood VH. Advances in the diagnosis and treatment of von Willebrand disease. *Blood*. 2017;130:2386-2391. doi: 10.1182/blood-2017-05-782029
77. Franchini M, Coppola A. Atherothrombosis in von Willebrand disease: an analysis of the literature and implications for clinical management. *Semin Thromb Hemost*. 2012;38:185-199. doi: 10.1055/s-0032-1301416
78. Boehnel C, Rickli H, Graf L, Maeder MT. Coronary angiography with or without percutaneous coronary intervention in patients with hemophilia: systematic review. *Catheter Cardiovasc Interv*. 2018;92:1-15. doi: 10.1002/ccd.27255
79. Federici AB, Bucciarelli P, Castaman G, Mazzucconi MG, Morfini M, Rocino A, Schiavoni M, Peyvandi F, Rodeghiero F, Mannucci PM. The bleeding score predicts clinical outcomes and replacement therapy in adults with von Willebrand disease. *Blood*. 2014;123:4037-4044. doi: 10.1182/blood-2014-02-557264
80. Singh V, Patel NJ, Rodriguez AP, Shantha G, Arora S, Deshmukh A, Cohen MG, Grines C, De Marchena E, Badheka A, Ghatak A. Percutaneous coronary intervention in patients with end-stage liver disease. *Am J Cardiol*. 2016;117: 1729-1734. doi: 10.1016/j.amjcard.2016.03.010
81. Mitchell O, Feldman DM, Diakow M, Sigal SH. The pathophysiology of thrombocytopenia in chronic liver disease. *Hepat Med*. 2016;8:39-50. doi: 10.2147/HMER.S74612
82. Russo MW, Pierson J, Narang T, Montegudo A, Eskind L, Gulati S. Coronary artery stents and antiplatelet therapy in patients with cirrhosis. *J Clin Gastroenterol*. 2012;46:339-344. doi: 10.1097/MCG.0b013e3182371258
83. Maddur H, Bourdillon PD, Liangpunsakul S, Joseph Tector A, Fridell JA, Ghabril M, Lacerda MA, Bourdillon C, Shen C, Kwo PY. Role of cardiac catheterization and percutaneous coronary intervention in the preoperative assessment and management of patients before orthotopic liver transplantation. *Liver Transpl*. 2014;20:664-672. doi: 10.1002/lt.23873
84. Patel NJ, Pau D, Nalluri N, Bhatt P, Thakkar B, Kanotra R, Agnihotri K, Ainani N, Patel N, Patel N, Shah S, Kadavath S, Arora S, Sheikh A, Badheka AO, Lafferty J, Alfonso C, Cohen M. Temporal trends, predictors, and outcomes of in-hospital gastrointestinal bleeding associated with percutaneous coronary intervention. *Am J Cardiol*. 2016;118:1150-1157. doi: 10.1016/j.amjcard.2016.07.025
85. Krill T, Brown G, Weideman RA, Copher DJ, Spechler SJ, Brilakis E, Feagins LA. Patients with cirrhosis who have coronary artery disease treated with cardiac stents have high rates of gastrointestinal bleeding, but no increased mortality. *Aliment Pharmacol Ther*. 2017;46:183-192. doi: 10.1111/apt.14121
86. Schulman S, Kearon C; Subcommittee on Control of Anticoagulation of the Scientific and Standardization Committee of the International Society on Thrombosis and Haemostasis. Definition of major bleeding in clinical investigations of antithrombotic medicinal products in non-surgical patients. *J Thromb Haemost*. 2005;3:692-694. doi: 10.1111/j.1538-7836.2005.01204.x

87. Kaatz S, Ahmad D, Spyropoulos AC, Schulman S; Subcommittee on Control of Anticoagulation. Definition of clinically relevant non-major bleeding in studies of anticoagulants in atrial fibrillation and venous thromboembolic disease in non-surgical patients: communication from the SSC of the ISTH. *J Thromb Haemost*. 2015;13:2119-2126.
88. Lee M, Chung GE, Lee JH, Oh S, Nam JY, Chang Y, Cho H, Ahn H, Cho YY, Yoo JJ, Cho Y, Lee DH, Cho EJ, Yu SJ, Lee DH, Lee JM, Kim YJ, Yoon JH. Antiplatelet therapy and the risk of hepatocellular carcinoma in chronic hepatitis B patients on antiviral treatment. *Hepatology*. 2017;66:1556-1569. doi: 10.1002/hep.29318
89. Kamath PS, Wiesner RH, Malinchoc M, Kremers W, Therneau TM, Kosberg CL, D'Amico G, Dickson ER, Kim WR. A model to predict survival in patients with end-stage liver disease. *Hepatology*. 2001;33:464-70. doi: 10.1053/jhep.2001.22172
90. Child CG, Turcotte JG. Surgery and portal hypertension. *Major Probl Clin Surg*. 1964;1:1-85.
91. Pugh RN, Murray-Lyon IM, Dawson JL, Pietroni MC, Williams R. Transection of the oesophagus for bleeding oesophageal varices. *Br J Surg*. 1973;60:646-649.
92. Potts JE, Ilescu CA, Lopez Mattei JC, Martinez SC, Holmvang L, Ludman P, De Beider MA, Kwok CS, Rashid M, Fischman DL, Mamas MA. Percutaneous coronary intervention in cancer patients: a report of the prevalence and outcomes in the United States [published online November 30, 2018]. *Eur Heart J*. doi: 10.1093/eurheartj/ehy769. <https://academic.oup.com/eurheartj/advance-article-abstract/doi/10.1093/eurheartj/ehy769/5221009?redirectedFrom=fulltext>.
93. Ko DT, Yun L, Wijeyesundera HC, Jackevicius CA, Rao SV, Austin PC, Marquis JF, Tu JV. Incidence, predictors, and prognostic implications of hospitalization for late bleeding after percutaneous coronary intervention for patients older than 65 years. *Circ Cardiovasc Interv*. 2010;3:140-147. doi: 10.1161/CIRCINTERVENTIONS.109.928721
94. Roe MT, Cyr DD, Eckart D, Schulte PJ, Morse MA, Blackwell KL, Ready NE, Zafar SY, Beaven AW, Strickler JH, Onken JE, Winters KJ, Houterloot L, Zamoryakhin D, Wiviott SD, White HD, Prabhakaran D, Fox KA, Armstrong PW, Ohman EM; TRILOGY ACS Investigators. Ascertainment, classification, and impact of neoplasm detection during prolonged treatment with dual antiplatelet therapy with prasugrel vs. clopidogrel following acute coronary syndrome. *Eur Heart J*. 2016;37:412-22. doi: 10.1093/eurheartj/ehv611
95. Fokkema ML, James SK, Albertsson P, Akerblom A, Calais F, Eriksson P, Jensen J, Nilsson T, de Smet BJ, Sjogren I, Thorvinger B, Lagerqvist B. Population trends in percutaneous coronary intervention: 20-year results from the SCAAR (Swedish Coronary Angiography and Angioplasty Registry). *J Am Coll Cardiol*. 2013;61:1222-1230. doi: 10.1016/j.jacc.2013.01.007
96. Acharya T, Salisbury AC, Spertus JA, Kennedy KF, Bhullar A, Reddy HKK, Joshi BK, Ambrose JA. In-hospital outcomes of percutaneous coronary intervention in America's safety net: insights from the NCDR Cath-PCI Registry. *JACC Cardiovasc Interv*. 2017;10:1475-1485. doi: 10.1016/j.jcin.2017.05.042
97. Mehta SR, Tanguay JF, Eikelboom JW, Jolly SS, Joyner CD, Granger CB, Faxon DP, Rupprecht HJ, Budaj A, Avezum A, Widimsky P, Steg PG, Bassand JP, Montalescot G, Macaya C, Di Pasquale G, Niemela K, Ajani AE, White HD, Chrolavicius S, Gao P, Fox KA, Yusuf S; CURRENT-OASIS 7 trial investigators. Double-dose versus standard-dose clopidogrel and high-dose versus low-dose aspirin in individuals undergoing percutaneous coronary intervention for acute coronary syndromes (CURRENT-OASIS 7): a randomised factorial trial. *Lancet*. 2010;376:1233-1243. doi: 10.1016/S0140-6736(10)61088-4
98. Wallentin L, Becker RC, Budaj A, Cannon CP, Emanuelsson H, Held C, Horrow J, Husted S, James S, Katus H, Mahaffey KW, Scirica BM, Skene A, Steg PG, Storey RF, Harrington RA, Freij A, Thorsen M; PLATO Investigators. Ticagrelor versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med*. 2009;361:1045-1057. doi: 10.1056/NEJMoa0904327
99. European Medicines Agency. Efficent public assessment report: product information. 2009. [https://www.ema.europa.eu/documents/product-information/efient-epar-product-information\\_en.pdf](https://www.ema.europa.eu/documents/product-information/efient-epar-product-information_en.pdf). Accessed 25 October 2018.
100. James SK, Storey RF, Khurmi NS, Husted S, Keltai M, Mahaffey KW, Maya J, Morais J, Lopes RD, Nicolau JC, Pais P, Raev D, Lopez-Sendon JL, Stevens SR, Becker RC; PLATO Study Group. Ticagrelor versus clopidogrel in patients with acute coronary syndromes and a history of stroke or transient ischemic attack. *Circulation*. 2012;125:2914-2921. doi: 10.1161/CIRCULATIONAHA.111.082727
101. Morrow DA, Alberts MJ, Mohr JP, Ameriso SF, Bonaca MP, Goto S, Hankey GJ, Murphy SA, Scirica BM, Braunwald E, Thrombin Receptor Antagonist in Secondary Prevention of Atherothrombotic Ischemic Events TSC and Investigators. Efficacy and safety of vorapaxar in patients with prior ischemic stroke. *Stroke*. 2013;44:691-698.
102. Wang Y, Wang Y, Zhao X, Liu L, Wang D, Wang C, Wang C, Li H, Meng X, Cui L, Jia J, Dong Q, Xu A, Zeng J, Li Y, Wang Z, Xia H, Johnston SC; CHANCE Investigators. Clopidogrel with aspirin in acute minor stroke or transient ischemic attack. *N Engl J Med*. 2013;369:11-19. doi: 10.1056/NEJMoa1215340
103. Johnston SC, Amarenco P, Albers GW, Denison H, Easton JD, Evans SR, Held P, Jonasson J, Minematsu K, Molina CA, Wang Y, Wong KS; SOCRATES Steering Committee and Investigators. Ticagrelor versus aspirin in acute stroke or transient ischemic attack. *N Engl J Med*. 2016;375:35-43. doi: 10.1056/NEJMoa1603060
104. Johnston SC, Easton JD, Farrant M, Barsan W, Conwit RA, Elm JJ, Kim AS, Lindblad AS, Palesch YY; Clinical Research Collaboration, Neurological Emergencies Treatment Trials Network, and the POINT Investigators. Clopidogrel and aspirin in acute ischemic stroke and high-risk TIA. *N Engl J Med*. 2018;379:215-225. doi: 10.1056/NEJMoa1800410
105. Diener HC, Bogousslavsky J, Brass LM, Cimminiello C, Csiba L, Kaste M, Leys D, Matias-Guiu J, Rupprecht HJ; MATCH Investigators. Aspirin and clopidogrel compared with clopidogrel alone after recent ischaemic stroke or transient ischaemic attack in high-risk patients (MATCH): randomised, double-blind, placebo-controlled trial. *Lancet*. 2004;364:331-337. doi: 10.1016/S0140-6736(04)16721-4
106. Sacco RL, Diener HC, Yusuf S, Cotton D, Ounpuu S, Lawton WA, Palesch Y, Martin RH, Albers GW, Bath P, Bornstein N, Chan BP, Chen ST, Cunha L, Dahlof B, De Keyser J, Donnan GA, Estol C, Gorelick P, Gu V, Hermansson K, Hilbrich L, Kaste M, Lu C, Machnig T, Pais P, Roberts R, Skvortsova V, Teal P, Toni D, Vandermaelen C, Voigt T, Weber M, Yoon BW; PROFESS Study Group. Aspirin and extended-release dipyridamole versus clopidogrel for recurrent stroke. *N Engl J Med*. 2008;359:1238-1251. doi: 10.1056/NEJMoa0805002
107. Benavente OR, Hart RG, McClure LA, Szychowski JM, Coffey CS, Pearce LA. Effects of clopidogrel added to aspirin in patients with recent lacunar stroke. *N Engl J Med*. 2012;367:817-825.
108. Powers WJ, Rabinstein AA, Ackerson T, Adeoye OM, Bambakidis NC, Becker K, Biller J, Brown M, Demaerschalk BM, Hoh B, Jauch EC, Kidwell CS, Leslie-Mazwi M, Ovbiagele B, Scott PA, Sheth KN, Southerland AM, Summers DM, Tirschwell DL; American Heart Association Stroke Council. 2018 Guidelines for the early management of patients with acute ischemic stroke: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2018;49:e46-e110. doi: 10.1161/STR.00000000000000158
109. Kernan WN, Ovbiagele B, Black HR, Bravata DM, Chimowitz MI, Ezekowitz MD, Fang MC, Fisher M, Furie KL, Heck DV, Johnston SC, Kasner SE, Kittner SJ, Mitchell PH, Rich MW, Richardson D, Schwamm LH, Wilson JA; American Heart Association Stroke Council, Council on Cardiovascular and Stroke Nursing, Council on Clinical Cardiology, and Council on Peripheral Vascular Disease. Guidelines for the prevention of stroke in patients with stroke and transient ischemic attack: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2014;45: 2160-2236. doi: 10.1161/STR.0000000000000024
110. Derdeyn CP, Zipfel GJ, Albuquerque FC, Cooke DL, Feldmann E, Sheehan JP, Torner JC; American Heart Association Stroke Council. Management of brain arteriovenous malformations: a scientific statement for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2017;48:e200-e224. doi: 10.1161/STR.0000000000000134
111. Kim H, Al-Shahi Salman R, McCulloch CE, Stapf C, Young WL; MARS Coinvestigators. Untreated brain arteriovenous malformation: patient-level meta-analysis of hemorrhage predictors. *Neurology*. 2014;83:590-597. doi: 10.1212/WNL.0000000000000688
112. Mohr JP, Parides MK, Stapf C, Moquete E, Moy CS, Overbey JR, Al-Shahi Salman R, Vicaut E, Young WL, Houdart E, Cordonnier C, Stefani MA, Hartmann A, von Kummer R, Biondi A, Berkefeld J, Klijn CJ, Harkness K, Libman R, Barreau X, Moskowitz AJ; International ARUBA Investigators. Medical management with or without interventional therapy for unruptured brain arteriovenous malformations (ARUBA): a multicentre, non-blinded, randomised trial. *Lancet*. 2014;383:614-621. doi: 10.1016/S0140-6736(13)62302-8
113. Capodanno D, Angiolillo DJ. Management of antiplatelet therapy in patients with coronary artery disease requiring cardiac and noncardiac surgery. *Circulation*. 2013;128:2785-2798. doi: 10.1161/CIRCULATIONAHA.113.003675
114. Banerjee S, Angiolillo DJ, Boden WE, Murphy JG, Khalili H, Hasan AA, Harrington RA, Rao SV. Use of antiplatelet therapy/DAPT for post-PCI patients undergoing noncardiac surgery. *J Am Coll Cardiol*. 2017;69:1861-1870. doi: 10.1016/j.jacc.2017.02.012
115. Devereaux PJ, Mrkobrada M, Sessler DI, Leslie K, Alonso-Coello P, Kurz A, Villar JC, Sigamani A, Biccari BM, Meyhoff CS, Parlow JL, Guyatt G, Robinson A, Garg AX, Rodseth RN, Botto F, Lurati Buse G, Xavier D, Chan MT, Tiboni M, Cook D, Kumar PA, Forget P, Malaga G, Fleischmann E, Amir M, Eikelboom J, Mizera R, Torres D, Wang CY, VanHelder T, Paniagua P, Berwanger O, Srinathan S, Graham M, Pasin L, Le Manach Y, Gao P, Pogue J, Whitlock R, Lamy A, Kearon C, Baigent C, Chow C, Pettit S, Chrolavicius S, Yusuf S; POISE-2 Investigators. Aspirin in patients undergoing noncardiac surgery. *N Engl J Med*. 2014;370:1494-1503. doi: 10.1056/NEJMoa1401105
116. Kristensen SD, Knuuti J, Saraste A, Anker S, Botker HE, Hert SD, Ford I, Gonzalez-Juanatey JR, Gorenek B, Heyndrickx GR, Hoefft A, Huber K, Iung B, Kjeldsen KP, Longrois D, Luscher TF, Pierard L, Pocock S, Price S, Roffi M, Sirnes PA, Sousa-Uva M, Voudris V, Funck-Brentano C; Task Force Members. 2014 ESC/ESA guidelines on non-cardiac surgery: cardiovascular assessment and management: the Joint Task Force on non-cardiac surgery: cardiovascular assessment and management of the European Society of Cardiology (ESC) and the European Society of Anaesthesiology (ESA). *Eur Heart J*. 2014;35: 2383-2431. doi: 10.1093/eurheartj/ehu282
117. Levine GN, Bates ER, Bittl JA, Brindis RG, Fihn SD, Fleisher LA, Granger CB, Lange RA, Mack MJ, Mauri L, Mehran R, Mukherjee D, Newby LK, O'Gara PT, Sabatine MS, Smith PK, Smith SC Jr. 2016 ACC/AHA guideline focused update on duration of dual antiplatelet therapy in patients with coronary artery disease: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol*. 2016;68: 1082-1115. doi: 10.1016/j.jacc.2016.03.513
118. Rossini R, Tarantini G, Musumeci G, Masiero G, Barbato E, Calabro P, Capodanno D, Leonardi S, Lettino M, Limbruno U, Menozzi A, Marchese

- UOA, Saia F, Valgimigli M, Ageno W, Falanga A, Corcione A, Locatelli A, Montorsi M, Piazza D, Stella A, Bozzani A, Parolari A, Carone R, Angiolillo DJ; Italian Society of Interventional Cardiology (SICI-GISE); Italian Society for the Study of Haemostasis and Thrombosis (SISST); Italian Society of Anesthesia and Intensive Care Medicine (SIAARTI); Italian Society of Surgery (SIC); Italian Society for Cardiac Surgery (SICCH); Italian Society of Vascular and Endovascular Surgery (SICVE); Italian Society of Urology (SIU); Italian Orthopaedic Society (SIOT); Italian Society of Thoracic Surgeons (SICT); Italian Federation of Scientific Societies of Digestive System Diseases (FISMAD); Italian Society of Digestive Endoscopy (SIED); Italian Association of Hospital Gastroenterology and Digestive Endoscopy (AIGO); Italian Association of Gastroenterology and Digestive Endoscopy (SIGE); Italian Society of Maxillofacial Surgery (SICMF); Italian Society of Reconstructive Plastic Surgery and Aesthetics (SICPRE); Italian Society of Gynecology and Obstetrics (SIGO); Italian Society of Neurosurgery (SINCh); Italian Association of Hospital Pulmonology (AIPO); Italian Society of Periodontology (SIdP); Italian Society of Ophthalmology (SOI); Italian Association of Hospital Otorhinolaryngologist (AOOI); Italian Association of Hospital Surgeons (ACOI); Association of Obstetricians Gynecologists Italian Hospital (AOGOI). A multidisciplinary approach on the perioperative antithrombotic management of patients with coronary stents undergoing surgery: surgery after stenting 2. *JACC Cardiovasc interl.* 2018;11:417-434. doi: 10.1016/j.jcin.2017.10.051
119. Godier A, Fontana P, Motte S, Steib A, Bonhomme F, Schlumberger S, Lecompte T, Rosencher N, Susen S, Vincentelli A, Gruel Y, Albaladejo P, Collet JP; French Working Group on Perioperative Hemostasis (GIHP). Management of antiplatelet therapy in patients undergoing elective invasive procedures: proposals from the French Working Group on Perioperative Hemostasis (GIHP) and the French Study Group on Thrombosis and Hemostasis (GFHT): in collaboration with the French Society for Anesthesia and Intensive Care (SFAR). *Arch Cardiovasc Dis.* 2018;111:210-223. doi: 10.1016/j.acvd.2017.12.004
120. Vivas D, Roldan I, Ferrandis R, Marin F, Roldan V, Tello-Montoliu A, Ruiz-Nodar JM, Gomez-Doblas JJ, Martin A, Llau JV, Ramos-Gallo MJ, Munoz R, Arcelus JI, Leyva F, Alberca F, Oliva R, Gomez AM, Montero C, Arian F, Ley L, Santos-Bueso E, Figuero E, Bujaldon A, Urbano J, Otero R, Hermida JF, Egocheaga I, Llisterri JL, Lobos JM, Serrano A, Madridano O, Ferreiro JL. Perioperative and periprocedural management of antithrombotic therapy: consensus document of SEC, SEDAR, SEACV, SECTCV, AEC, SECPRE, SEPD, SEGO, SEHH, SETH, SEMERGEN, SEMFYC, SEMG, SEMICYUC, SEMI, SEMES, SEPAR, SENEC, SEO, SEPA, SERVEI, SECOT and AEU. *Rev Esp Cardiol (Engl Ed).* 2018;71:553-564.
121. Daemen J, Wenaweser P, Tsuchida K, Abrecht L, Vaina S, Morger C, Kukreja N, Juni P, Sianos G, Hellige G, van Domburg RT, Hess OM, Boersma E, Meier B, Windecker S, Serruys PW. Early and late coronary stent thrombosis of sirolimus-eluting and paclitaxel-eluting stents in routine clinical practice: data from a large two-institutional cohort study. *Lancet.* 2007;369:667-678. doi: 10.1016/S0140-6736(07)60314-6
122. Kimura T, Morimoto T, Nakagawa Y, Tamura T, Kadota K, Yasumoto H, Nishikawa H, Hiasa Y, Muramatsu T, Meguro T, Inoue N, Honda H, Hayashi Y, Miyazaki S, Oshima S, Honda T, Shiode N, Namura M, Sone T, Nobuyoshi M, Kita T, Mitsudo K; j-Cypher Registry Investigators. Antiplatelet therapy and stent thrombosis after sirolimus-eluting stent implantation. *Circulation.* 2009; 119:987-995. doi: 10.1161/CIRCULATIONAHA.108.808311
123. Stealy AM, Callas PW, Neal D, Scali ST, Goodney PP, Schanzer A, Cronenwett JL, Bertges DJ; Vascular Quality Initiative. Regional variation in postoperative myocardial infarction in patients undergoing vascular surgery in the United States. *Ann Vasc Surg.* 2017;40:63-73. doi: 10.1016/j.avsg.2016.07.099
124. White WB, Kloner RA, Angiolillo DJ, Davidson MH. Cardioresnal safety of OTC analgesics. *J Cardiovasc Pharmacol Ther.* 2018;23:103-118. doi: 10.1177/1074248417751070
125. Singh G. Gastrointestinal complications of prescription and over-the-counter nonsteroidal anti-inflammatory drugs: a view from the ARAMIS database: Arthritis, Rheumatism, and Aging Medical Information System. *Am J Ther.* 2000; 7:115-121.
126. Bjarnason I, Scarpignato C, Holmgren E, Olszewski M, Rainsford KD, Lanas A. Mechanisms of damage to the gastrointestinal tract from nonsteroidal antiinflammatory drugs. *Gastroenterology.* 2018;154:500-514. doi: 10.1053/j.gastro.2017.10.049
127. Lanza FL, Chan FK, Quigley EM; Practice Parameters Committee of the American College of Gastroenterology. Guidelines for prevention of NSAID-related ulcer complications. *Am J Gastroenterol.* 2009;104:728-738. doi: 10.1038/ajg.2009.115
128. Masclee GM, Valkhoff VE, Coloma PM, de Ridder M, Romio S, Schuemie MJ, Herings R, Gini R, Mazzaglia G, Picelli G, Scotti L, Pedersen L, Kuipers EJ, van der Lei J, Sturkenboom MC. Risk of upper gastrointestinal bleeding from different drug combinations. *Gastroenterology.* 2014;147:784-792.e9; quiz e13. doi: 10.1053/j.gastro.2014.06.007
129. Chan FKL, Ching JYL, Tse YK, Lam K, Wong GLH, Ng SC, Lee V, Au KWL, Cheong PK, Suen BY, Chan H, Kee KM, Lo A, Wong VWS, Wu JCY, Kyaw MH. Gastrointestinal safety of celecoxib versus naproxen in patients with cardio-thrombotic diseases and arthritis after upper gastrointestinal bleeding (CONCERN): an industry-independent, double-blind, double-dummy, randomised trial. *Lancet.* 2017;389:2375-2382. doi: 10.1016/S0140-6736(17)30981-9
130. Silverstein FE, Faich G, Goldstein JL, Simon LS, Pincus T, Whelton A, Makuch R, Eisen G, Agrawal NM, Stenson WF, Burr AM, Zhao WW, Kent JD, Lefkowitz JB, Verburg KM, Geis GS. Gastrointestinal toxicity with celecoxib vs nonsteroidal anti-inflammatory drugs for osteoarthritis and rheumatoid arthritis: the CLASS study: a randomized controlled trial: Celecoxib Long-term Arthritis Safety Study. *JAMA.* 2000;284:1247-1255.
131. Aguayo GA, Donneau AF, Vaillant MT, Schritz A, Franco OH, Stranges S, Malisoux L, Guillaume M, Witte DR. Agreement between 35 published frailty scores in the general population. *Am J Epidemiol.* 2017;186:420-434. doi: 10.1093/aje/kwx061
132. Dodson JA, Hochman JS, Roe MT, Chen AY, Chaudhry SI, Katz S, Zhong H, Radford MJ, Udell JA, Bagai A, Fonarow GC, Gulati M, Enriquez JR, Garratt KN, Alexander KP. The association of frailty with in-hospital bleeding among older adults with acute myocardial infarction: insights from the ACTION Registry. *JACC Cardiovasc Interv.* 2018;11:2287-2296. doi: 10.1016/j.jcin.2018.08.028
133. Numasawa Y, Kohsaka S, Ueda I, Miyata H, Sawano M, Kawamura A, Noma S, Suzuki M, Nakagawa S, Momiyama Y, Fukuda K. Incidence and predictors of bleeding complications after percutaneous coronary intervention. *J Cardiol.* 2017;69:272-279. doi: 10.1016/j.jcc.2016.05.003
134. Saito S, Isshiki T, Kimura T, Ogawa H, Yokoi H, Nanto S, Takayama M, Kitagawa K, Nishikawa M, Miyazaki S, Nakamura M. Efficacy and safety of adjusted-dose prasugrel compared with clopidogrel in Japanese patients with acute coronary syndrome: the PRASFIT-ACS study. *Circ J.* 2014;78:1684-1692.
135. Kohsaka S, Miyata H, Ueda I, Masoudi FA, Peterson ED, Maekawa Y, Kawamura A, Fukuda K, Roe MT, Rumsfeld JS, JCD-KiCS and NCDR. An international comparison of patients undergoing percutaneous coronary intervention: a collaborative study of the National Cardiovascular Data Registry (NCDR) and Japan Cardiovascular Databank-Keio interhospital Cardiovascular Studies (JCD-KiCS). *Am Heart J.* 2015;170:1077-1085.
136. Kang J, Park KW, Palmerini T, Stone GW, Lee MS, Colombo A, Chieffo A, Feres F, Abizaid A, Bhatt DL, Valgimigli M, Hong MK, Jang Y, Gilard M, Morice MC, Park DW, Park SJ, Jeong YH, Park J, Koo BK, Kim HS. Racial differences in ischaemia/bleeding risk trade-off during anti-platelet therapy: individual patient level landmark meta-analysis from seven RCTs. *Thromb Haemost.* 2019;119: 149-162. doi: 10.1055/s-0038-1676545
137. Verheugt FW, Steinhilber SR, Hamon M, Darius H, Steg PG, Valgimigli M, Marso SP, Rao SV, Gershlick AH, Lincoff AM, Mehran R, Stone GW. Incidence, prognostic impact, and influence of antithrombotic therapy on access and nonaccess site bleeding in percutaneous coronary intervention. *JACC Cardiovasc Interv.* 2011;4:191-197. doi: 10.1016/j.jcin.2010.10.011
138. Steg PG, James S, Harrington RA, Ardissino D, Becker RC, Cannon CP, Emanuelsson H, Finkelstein A, Husted S, Katus H, Kilhamn J, Olofsson S, Storey RF, Weaver WD, Wallentin L; PLATO Study Group. Ticagrelor versus clopidogrel in patients with ST-elevation acute coronary syndromes intended for reperfusion with primary percutaneous coronary intervention: a Platelet Inhibition and Patient Outcomes (PLATO) trial subgroup analysis. *Circulation.* 2010;122:2131-2141. doi: 10.1161/CIRCULATIONAHA.109.927582
139. Montalescot G, Wiviott SD, Braunwald E, Murphy SA, Gibson CM, McCabe CH, Antman EM; TRITON-TIMI 38 Investigators. Prasugrel compared with clopidogrel in patients undergoing percutaneous coronary intervention for ST-elevation myocardial infarction (TRITON-TIMI 38): double-blind, randomised controlled trial. *Lancet.* 2009;373:723-731. doi: 10.1016/S0140-6736(09)60441-4
140. Mehran R, Baber U, Steg PG, Aruti C, Weisz G, Witzensbichler B, Henry TD, Kini AS, Stuckey T, Cohen DJ, Berger PB, Iakovou I, Dangas G, Waksman R, Antoniucci D, Sartori S, Krucoff MW, Hermiller JB, Shawl F, Gibson CM, Chieffo A, Alu M, Moliterno DJ, Colombo A, Pocock S. Cessation of dual antiplatelet treatment and cardiac events after percutaneous coronary intervention (PARIS): 2 year results from a prospective observational study. *Lancet.* 2013; 382:1714-1722. doi: 10.1016/S0140-6736(13)61720-1