

Effect of preoperative renin-angiotensin system blockade on vasoplegia after cardiac surgery: a systematic review and meta-analysis

Supplementary Table 1. Search strategies

	Search strategy for PubMed
#P1	<p>(Aort*[tiab] OR Arterial[tiab] OR Arteries[tiab] OR Artery[tiab] OR Atria[tiab] OR Atrial[tiab] OR Atrioventricular[tiab] OR Atrium[tiab] OR Cardiac[tiab] OR Cardio[tiab] OR Cardiopulmonary[tiab] OR Cardiovascular[tiab] OR Great Vessel*[tiab] OR Heart[tiab] OR Mitral[tiab] OR Myocard*[tiab] OR Thoracic[tiab] OR Transmyocardial[tiab] OR Valve[tiab] OR Valvular[tiab] OR Vena Cava[tiab] OR Ventricle*[tiab] OR Ventricular[tiab]) AND (Operation*[tiab] OR Operative[tiab] OR Operated[tiab] OR Postoperat*[tiab] OR Postsurg*[tiab] OR Preoperat*[tiab] OR Surgery[tiab] OR Surgeries[tiab] OR Surgical[tiab]) OR (Cardiac Surgical Procedures[tiab] OR Thoracic Surgery[tiab] OR Arterial Switch Operation[tiab] OR Cardiac Valve Annuloplasty[tiab] OR Cardiomyoplasty[tiab] OR Circulatory Arrest, Deep Hypothermia Induced[tiab] OR Coronary Artery Bypass[tiab] OR Coronary Artery Bypass[tiab] OR Fontan Procedure[tiab] OR Heart Bypass[tiab] OR Heart Massage[tiab] OR Heart Transplantation[tiab] OR Heart Valve Prosthesis Implantation[tiab] OR Heart-Lung Transplantation[tiab] OR Internal Mammary-Coronary Artery Anastomosis[tiab] OR Mitral Valve Annuloplasty[tiab] OR Myocardial Revascularization[tiab] OR Norwood Procedures[tiab] OR Pericardial Window Techniques[tiab] OR Pericardiectomy[tiab] OR Pericardiocentesis[tiab] OR Transmyocardial Laser Revascularization[tiab] OR (Anastomos*[tiab] OR Angioplast*[tiab] OR Annuloplast*[tiab] OR Bidirectional Glenn*[tiab] OR Bypass*[tiab] OR Cardiomyoplast*[tiab] OR Cardioplegia*[tiab] OR Cavopulmonary Anastomos*[tiab] OR Cavopulmonary Shunt*[tiab] OR Deep Hypothermic Circulatory Arrest*[tiab] OR Double Switch[tiab] OR Fontan[tiab] OR Grafting*[tiab] OR Implant*[tiab] OR Induced Heart Arrest[tiab] OR Jatene[tiab] OR Mustard[tiab] OR Norwood[tiab] OR Pericardectom*[tiab] OR Pericardial Window[tiab] OR Pericardiectom*[tiab] OR Pericardiostom*[tiab] OR Pericardiotom*[tiab] OR Pericardotom*[tiab] OR Rastelli[tiab] OR Revasculari*[tiab] OR Senning[tiab] OR Transcatheter[tiab] OR Transplant*[tiab]))</p>
#P2	<p>Angiotensin Receptor Blocker[tiab] OR Angiotensin Receptor Blocker*[tiab] OR Azilsartan[tiab] OR Candesartan[tiab] OR Losartan[tiab] OR Olmesartan[tiab] OR Valsartan[tiab] OR Angiotensin-Converting Enzyme Inhibitors[tiab] OR Captopril[tiab] OR Cilazapril[tiab] OR Enalapril[tiab] OR Enalaprilat[tiab] OR Fosinopril[tiab] OR Lisinopril[tiab] OR Perindopril[tiab] OR Quinapril[tiab] OR Ramipril[tiab] OR (ACE Inhibitor*[tiab] OR Angiotensin Converting Enzyme Antagonist*[tiab] OR Angiotensin</p>

	<p>Converting Enzyme Inhibitor*[tiab] OR Angiotensin I Converting Enzyme Inhibitor*[tiab] OR RAS inhibitor*[tiab] OR Captopril[tiab] OR Capoten[tiab] OR Lopirin[tiab] OR Cilazapril[tiab] OR Inhibace[tiab] OR Enalapril[tiab] OR Renitec[tiab] OR Renitek[tiab] OR Enalaprilat[tiab] OR Enalaprilic[tiab] OR Vasotec[tiab] OR Fosinopril[tiab] OR Fosenopril[tiab] OR Fosinil[tiab] OR Tenso Stop[tiab] OR Monopril[tiab] OR Fosinorm[tiab] OR Newace[tiab] OR Staril[tiab] OR Lisinopril[tiab] OR Lysinopril[tiab] OR Prinivil[tiab] OR Zestril[tiab] OR Perindopril[tiab] OR Pirindopril[tiab] OR Perstarium[tiab] OR Quinapril[tiab] OR Accupril[tiab] OR Ramipril[tiab] OR Vesdil[tiab] OR Triatec[tiab] OR Altace[tiab] OR Ramace[tiab] OR Tritace[tiab] OR Acovil[tiab] OR Delix[tiab] OR Carasel[tiab] OR Alacepril[tiab] OR Aracepril[tiab] OR Benazepril[tiab] OR Benzapril[tiab] OR Benzazepril[tiab] OR Labopal[tiab] OR Lotensin[tiab] OR Cibacen[tiab] OR Briem[tiab] OR Benazeprilat[tiab] OR Benzaprilat[tiab] OR Ceronapril[tiab] OR Ceranapril[tiab] OR Cilazaprilat[tiab] OR Delapril[tiab] OR Derapril[tiab] OR Fosinoprilat[tiab] OR Fosinoprilic[tiab] OR Fosfenopril[tiab] OR Gemopatrilat[tiab] OR Imidapril[tiab] OR Tanatril[tiab] OR Imidaprilat[tiab] OR Libenzapril[tiab] OR Moexipril[tiab] OR Fempress[tiab] OR Univasc[tiab] OR Moex[tiab] OR Perdix[tiab] OR Omapatrilat[tiab] OR Vanlev[tiab] OR Perindoprilat[tiab] OR Quinaprilat[tiab] OR Ramiprilat[tiab] OR Rentiapril[tiab] OR Sampatrilat[tiab] OR Spirapril[tiab] OR Renpress[tiab] OR Quadropril[tiab] OR Temocapril[tiab] OR Trandolapril[tiab] OR Odrik[tiab] OR Mavik[tiab] OR Gopten[tiab] OR Zofenopril[tiab] OR Zofenil[tiab])</p>
#P3	Mortality[tiab] OR death[tiab] OR fatality[tiab] OR survival[tiab] OR Postoperative Complications[tiab] OR Vasoplegi*[tiab]
#P4	#P1 AND #P2 AND #P3
	Search strategy for EMBASE
#E1	<p>((aort*:ab,ti OR arterial:ab,ti OR arteries:ab,ti OR artery:ab,ti OR atria:ab,ti OR atrial:ab,ti OR atrioventricular:ab,ti OR atrium:ab,ti OR cardiac:ab,ti OR cardio:ab,ti OR cardiopulmonary:ab,ti OR cardiovascular:ab,ti OR 'great vessel*':ab,ti OR heart:ab,ti OR mitral:ab,ti OR myocard*:ab,ti OR thoracic:ab,ti OR transmyocardial:ab,ti OR valve:ab,ti OR valvular:ab,ti OR 'vena cava':ab,ti OR ventricle*:ab,ti OR ventricular:ab,ti) AND (operation*:ab,ti OR operative:ab,ti OR operated:ab,ti OR postoperat*:ab,ti OR postsurg*:ab,ti OR preoperat*:ab,ti OR surgery:ab,ti OR surgeries:ab,ti OR surgical:ab,ti) OR 'cardiac surgical procedures':ab,ti OR 'thoracic surgery':ab,ti OR 'arterial switch operation':ab,ti OR 'cardiac valve annuloplasty':ab,ti OR cardiomyoplasty:ab,ti OR 'circulatory arrest, deep hypothermia induced':ab,ti OR 'coronary artery bypass':ab,ti OR 'fontan procedure':ab,ti OR 'heart bypass':ab,ti OR 'heart massage':ab,ti OR 'heart transplantation':ab,ti OR 'heart valve prosthesis implantation':ab,ti OR 'heart-lung transplantation':ab,ti OR 'internal mammary-coronary artery anastomosis':ab,ti OR 'mitral valve</p>

	annuloplasty':ab,ti OR 'myocardial revascularization':ab,ti OR 'norwood procedures':ab,ti OR 'pericardial window techniques':ab,ti OR pericardiectomy:ab,ti OR pericardiocentesis:ab,ti OR 'transmyocardial laser revascularization':ab,ti OR anastomos*':ab,ti OR angioplast*':ab,ti OR annuloplast*':ab,ti OR 'bidirectional glenn*':ab,ti OR bypass*':ab,ti OR cardiomyoplast*':ab,ti OR cardioplegia*':ab,ti OR 'cavopulmonary anastomos*':ab,ti OR 'cavopulmonary shunt*':ab,ti OR 'deep hypothermic circulatory arrest*':ab,ti OR 'double switch':ab,ti OR fontan:ab,ti OR grafting*':ab,ti OR implant*':ab,ti OR 'induced heart arrest':ab,ti OR jatene:ab,ti OR mustard:ab,ti OR norwood:ab,ti OR pericardectom*':ab,ti OR 'pericardial window':ab,ti OR pericardiectom*':ab,ti OR pericardiostom*':ab,ti OR pericardiotom*':ab,ti OR pericardotom*':ab,ti OR rastelli:ab,ti OR revasculari*':ab,ti OR senning:ab,ti OR transcatheter:ab,ti OR transplant*':ab,ti)
#E2	('angiotensin receptor blocker':ab,ti OR 'angiotensin receptor blocker*':ab,ti OR azilsartan:ab,ti OR candesartan:ab,ti OR losartan:ab,ti OR olmesartan:ab,ti OR valsartan:ab,ti OR 'angiotensin-converting enzyme inhibitors':ab,ti OR 'ace inhibitor*':ab,ti OR 'angiotensin converting enzyme antagonist*':ab,ti OR 'angiotensin converting enzyme inhibitor*':ab,ti OR 'angiotensin i converting enzyme inhibitor*':ab,ti OR 'ras inhibitor*':ab,ti OR captopril:ab,ti OR capoten:ab,ti OR lopirin:ab,ti OR cilazapril:ab,ti OR inihibace:ab,ti OR enalapril:ab,ti OR renitec:ab,ti OR renitek:ab,ti OR enalaprilat:ab,ti OR enalaprilic:ab,ti OR vasotec:ab,ti OR fosinopril:ab,ti OR fosenopril:ab,ti OR fosinil:ab,ti OR 'tenso stop':ab,ti OR monopril:ab,ti OR fosinorm:ab,ti OR newace:ab,ti OR staril:ab,ti OR lisinopril:ab,ti OR lysinopril:ab,ti OR prinivil:ab,ti OR zestril:ab,ti OR perindopril:ab,ti OR pirindopril:ab,ti OR perstarium:ab,ti OR quinapril:ab,ti OR accupril:ab,ti OR ramipril:ab,ti OR vesdil:ab,ti OR triatec:ab,ti OR altace:ab,ti OR ramace:ab,ti OR tritace:ab,ti OR acovil:ab,ti OR delix:ab,ti OR carasel:ab,ti OR alacepril:ab,ti OR aracepril:ab,ti OR benazepril:ab,ti OR benazapril:ab,ti OR benzazepril:ab,ti OR labopal:ab,ti OR lotensin:ab,ti OR cibacen:ab,ti OR briem:ab,ti OR benazeprilat:ab,ti OR benezaprilat:ab,ti OR ceronapril:ab,ti OR ceranapril:ab,ti OR cilazaprilat:ab,ti OR delapril:ab,ti OR derapril:ab,ti OR fosinoprilat:ab,ti OR fosinoprilic:ab,ti OR fosfenopril:ab,ti OR gemopatrilat:ab,ti OR imidapril:ab,ti OR tanatril:ab,ti OR imidaprilat:ab,ti OR libenzapril:ab,ti OR moexipril:ab,ti OR fempress:ab,ti OR univasc:ab,ti OR moex:ab,ti OR perdix:ab,ti OR omapatrilat:ab,ti OR vanlev:ab,ti OR perindoprilat:ab,ti OR quinaprilat:ab,ti OR ramiprilat:ab,ti OR rentiapril:ab,ti OR sampatrilat:ab,ti OR spirapril:ab,ti OR renpress:ab,ti OR quadropril:ab,ti OR temocapril:ab,ti OR trandolapril:ab,ti OR odrik:ab,ti OR mavik:ab,ti OR gopten:ab,ti OR zofenopril:ab,ti OR zofenil:ab,ti)
#E3	(mortality:ab,ti OR death:ab,ti OR fatality:ab,ti OR survival:ab,ti OR 'postoperative complications':ab,ti OR vasoplegi*':ab,ti)
#E4	((aort*':ab,ti OR arterial:ab,ti OR arteries:ab,ti OR artery:ab,ti OR atria:ab,ti OR atrial:ab,ti OR atrioventricular:ab,ti OR atrium:ab,ti OR

	cardiac:ab,ti OR cardio:ab,ti OR cardiopulmonary:ab,ti OR cardiovascular:ab,ti OR 'great vessel*':ab,ti OR heart:ab,ti OR mitral:ab,ti OR myocard*:ab,ti OR thoracic:ab,ti OR transmyocardial:ab,ti OR valve:ab,ti OR valvular:ab,ti OR 'vena cava':ab,ti OR ventricle*:ab,ti OR ventricular:ab,ti) AND (operation*:ab,ti OR operative:ab,ti OR operated:ab,ti OR postoperat*:ab,ti OR postsurg*:ab,ti OR preoperat*:ab,ti OR surgery:ab,ti OR surgeries:ab,ti OR surgical:ab,ti) OR 'cardiac surgical procedures':ab,ti OR 'thoracic surgery':ab,ti OR 'arterial switch operation':ab,ti OR 'cardiac valve annuloplasty':ab,ti OR cardiomyoplasty:ab,ti OR 'circulatory arrest, deep hypothermia induced':ab,ti OR 'coronary artery bypass':ab,ti OR 'fontan procedure':ab,ti OR 'heart bypass':ab,ti OR 'heart massage':ab,ti OR 'heart transplantation':ab,ti OR 'heart valve prosthesis implantation':ab,ti OR 'heart-lung transplantation':ab,ti OR 'internal mammary-coronary artery anastomosis':ab,ti OR 'mitral valve annuloplasty':ab,ti OR 'myocardial revascularization':ab,ti OR 'norwood procedures':ab,ti OR 'pericardial window techniques':ab,ti OR pericardiectomy:ab,ti OR pericardiocentesis:ab,ti OR 'transmyocardial laser revascularization':ab,ti OR anastomos*:ab,ti OR angioplast*:ab,ti OR annuloplast*:ab,ti OR 'bidirectional glenn*':ab,ti OR bypass*:ab,ti OR cardiomyoplast*:ab,ti OR cardioplegia*:ab,ti OR 'cavopulmonary anastomos*':ab,ti OR 'cavopulmonary shunt*':ab,ti OR 'deep hypothermic circulatory arrest*':ab,ti OR 'double switch':ab,ti OR fontan:ab,ti OR grafting*:ab,ti OR implant*:ab,ti OR 'induced heart arrest':ab,ti OR jatene:ab,ti OR mustard:ab,ti OR norwood:ab,ti OR pericardectom*:ab,ti OR 'pericardial window':ab,ti OR pericardiectom*:ab,ti OR pericardiostom*:ab,ti OR pericardiotom*:ab,ti OR pericardotom*:ab,ti OR rastelli:ab,ti OR revasculari*:ab,ti OR senning:ab,ti OR transcatheter:ab,ti OR transplant*:ab,ti)
#E5	#E1 AND #E2 AND #E3 AND #E4
	Search strategy for Web of Science
#W1	(Aort* OR Arterial OR Arteries OR Artery OR Atria OR Atrial OR Atrioventricular OR Atrium OR Cardiac OR Cardio OR Cardiopulmonary OR Cardiovascular OR Great Vessel* OR Heart OR Mitral OR Myocard* OR Thoracic OR Transmyocardial OR Valve OR Valvular OR Vena Cava OR Ventricle* OR Ventricular) AND (Operation* OR Operative OR Operated OR Postoperat* OR Postsurg* OR Preoperat* OR Surgery OR Surgeries OR Surgical) OR (Cardiac Surgical Procedures OR Thoracic Surgery OR Arterial Switch Operation OR Cardiac Valve Annuloplasty OR Cardiomyoplasty OR Circulatory Arrest, Deep Hypothermia Induced OR Coronary Artery Bypass OR Coronary Artery Bypass OR Fontan Procedure OR Heart Bypass OR Heart Massage OR Heart Transplantation OR Heart Valve Prosthesis Implantation OR Heart-Lung Transplantation OR Internal Mammary-Coronary Artery Anastomosis OR Mitral Valve Annuloplasty OR Myocardial Revascularization OR Norwood Procedures OR Pericardial Window Techniques OR Pericardiectomy

	OR Pericardiocentesis OR Transmyocardial Laser Revascularization OR (Anastomos* OR Angioplast* OR Annuloplast* OR Bidirectional Glenn* OR Bypass* OR Cardiomyoplast* OR Cardioplegia* OR Cavopulmonary Anastomos* OR Cavopulmonary Shunt* OR Deep Hypothermic Circulatory Arrest* OR Double Switch OR Fontan OR Grafting* OR Implant* OR Induced Heart Arrest OR Jatene OR Mustard OR Norwood OR Pericardectomy* OR Pericardial Window OR Pericardiectomy* OR Pericardiostomy* OR Pericardiotomy* OR Pericardotomy* OR Rastelli OR Revasculari* OR Senning OR Transcatheter OR Transplant*))
#W2	Angiotensin Receptor Blocker OR Angiotensin Receptor Blocker* OR Azilsartan OR Candesartan OR Losartan OR Olmesartan OR Valsartan OR Angiotensin-Converting Enzyme Inhibitors OR Captopril OR Cilazapril OR Enalapril OR Enalaprilat OR Fosinopril OR Lisinopril OR Perindopril OR Quinapril OR Ramipril OR (ACE Inhibitor* OR Angiotensin Converting Enzyme Antagonist* OR Angiotensin Converting Enzyme Inhibitor* OR Angiotensin I Converting Enzyme Inhibitor* OR RAS inhibitor* OR Captopril OR Capoten OR Lopirin OR Cilazapril OR Inhibace OR Enalapril OR Renitec OR Renitek OR Enalaprilat OR Enalaprilic OR Vasotec OR Fosinopril OR Fosenopril OR Fosinil OR Tenso Stop OR Monopril OR Fosinorm OR Newace OR Staril OR Lisinopril OR Lysinopril OR Prinivil OR Zestril OR Perindopril OR Pirindopril OR Perstarium OR Quinapril OR Accupril OR Ramipril OR Vesdil OR Triatec OR Altace OR Ramace OR Tritace OR Acovil OR Delix OR Carasel OR Alacepril OR Aracepril OR Benazepril OR Benazapril OR Benzazepril OR Labopal OR Lotensin OR Cibacen OR Briem OR Benazeprilat OR Benezaprilat OR Ceronapril OR Ceranapril OR Cilazaprilat OR Delapril OR Derapril OR Fosinoprilat OR Fosinoprilic OR Fosfenopril OR Gemopatrilat OR Imidapril OR Tanatril OR Imidaprilat OR Libenzapril OR Moexipril OR Fempress OR Univasc OR Moex OR Perdix OR Omapatrilat OR Vanlev OR Perindoprilat OR Quinaprilat OR Ramiprilat OR Rentiapril OR Sampatrilat OR Spirapril OR Renpress OR Quadropril OR Temocapril OR Trandolapril OR Odrik OR Mavik OR Gopten OR Zofenopril OR Zofenil)
#W3	Mortality OR death OR fatality OR survival OR Postoperative Complications OR Vasoplegi*
#W4	#W1 AND #W2 AND #W3

Supplementary Table 2. General characteristics of included studies and of their populations

Study	Year of recruitment	Country	Design	Sampling	Data collection	Total sample	Mean age	Male	Low LVEF	HPT	DM	Smoking	Redo Surgery	ACEI	ARB	CCA	Beta blockers	Nitrates
Tuman, 1995	NR	USA	Case-control	Consecutive	Coronary artery and/or valve surgery requiring CPB	4301	63.1	NR	37.4	58.3	NR	NR	20.6	12.1	NR	58	28.3	55.7
Bruce, 2014	2011-2012	Spain	Case-control	Consecutive	Cardiac surgery requiring CPB	188	67.7	64.9			NR	NR	NR	42.0	16.9	NR	NR	NR
Carrel, 2000	NR	Switzerland	Case-control	Consecutive	CABG or AVR	800	62.3	84.7	10.1	40.9	16.7	NR	6.4	43.1	NR	33.9	75	75.1
Mekontso-Dessap, 2001	1997-2000	France	Case-control	Consecutive	CABG	108	61.7	97.2	33.3	49.1	30.6	70.4	5.6	31.5	NR	53.7	75.9	67.6
Sun, 2008 (on-pump CABG)	2005-2006	USA	Case-control	Consecutive	On-pump CABG	334	62.8	73.3	18.3	81.1	46.4	57.8	3.6	36.8	NR	14.4	89.5	NR
Sun, 2008 (off-pump CABG)	2005-2006	USA	Case-control	Consecutive	Off-pump CABG	362	65.8	73.5	9.1	79.3	39.2	58.6	2.2	40.1	NR	11.6	93.1	NR
Levin, 2009	2002-2007	USA	Case-control	Consecutive	Cardiac surgery	2823	62.9	62.1	NR	NR	NR	NR	NR	19.7	9.1	11.8	35.1	NR
Shahzamani, 2009	2006-2008	Iran	Case-control	Consecutive	CABG	300	57.7	64.5	NR	NR	27	31.3	NR	64	NR	38.3	76.7	NR
Radaelli, 2011	1996-2009	Brazil	Case-control	Consecutive	CABG	3139	61.3	66.5	NR	72.5	29.6	34.4	3.3	52.1	NR	NR	NR	NR
Suga, 2020	2015-2016	Japan	Case-control	Consecutive	Cardiac surgery	562	72.8	60.9	2.8	50.9	20.3	NR	NR	9.1	15.3	NR	NR	NR
Miceli, 2009	1996-2008	UK	Case-control	Consecutive	CABG	2655	64.9	80.6	NR	68.2	14.2	50.7	2.8	51	NR	NR	NR	NR

Data are expressed in percentage for all variables except total sample and mean age.

ACEI: angiotensin converting enzyme inhibitor; ARB: angiotensin receptor blocker; AVR; aortic valve replacement; CABG: coronary artery bypass graft; CCA: calcium channel antagonist; DM: diabetes mellitus; Low LVEF: left ventricular ejection fraction (<40%)

Supplementary Table 3. Risk of bias assessment

Study	Question 1	Question 2	Question 3	Question 4	Question 5
Tuman, 1995	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Carrel, 2000	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Mekontso-Dessap, 2001	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Sun, 2008	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Levin, 2009	Probably yes	Probably yes	Probably yes	Probably yes	Probably yes
Shahzamani, 2009	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Radaelli, 2011	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Suga, 2020	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Miceli, 2009	Probably yes	Probably yes	Probably yes	Probably yes	Definitely yes
Sun, 2011	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes
Bruce, 2014	Definitely yes	Definitely yes	Definitely yes	Definitely yes	Probably yes

Question 1: Can we be confident in the assessment of exposure?

Question 2: Can we be confident that cases had developed the outcome of interest and controls had not?

Question 3: Were the cases (those who were exposed and developed the outcome of interest) properly selected?

Question 4: Were the controls (those who were exposed and did not develop the outcome of interest) properly selected?

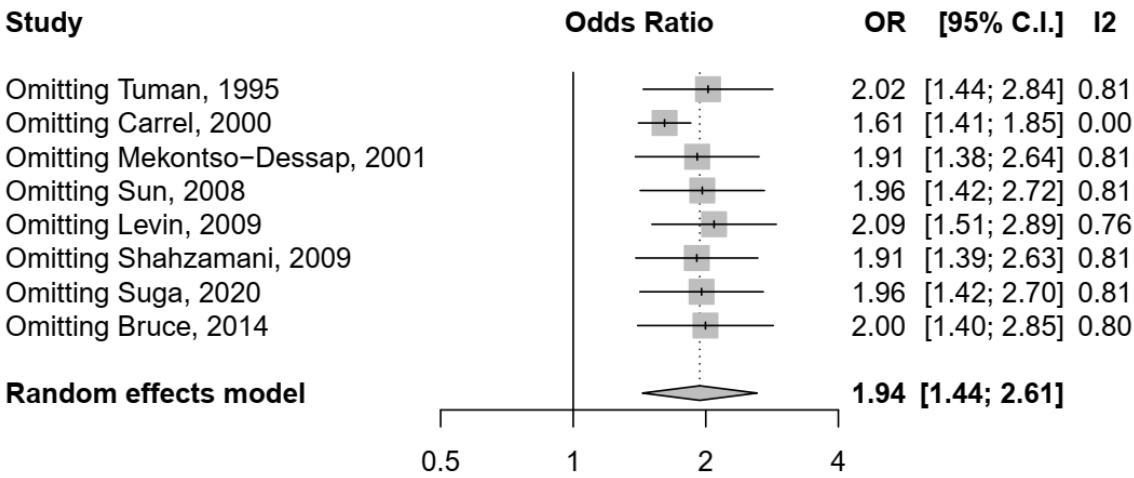
Question 5: Were cases and controls matched according to important prognostic variables or was statistical adjustment carried out for those variables?

Potential answers: Definitely yes (low risk of bias); Probably yes; Probably no; Definitely no (high risk of bias)

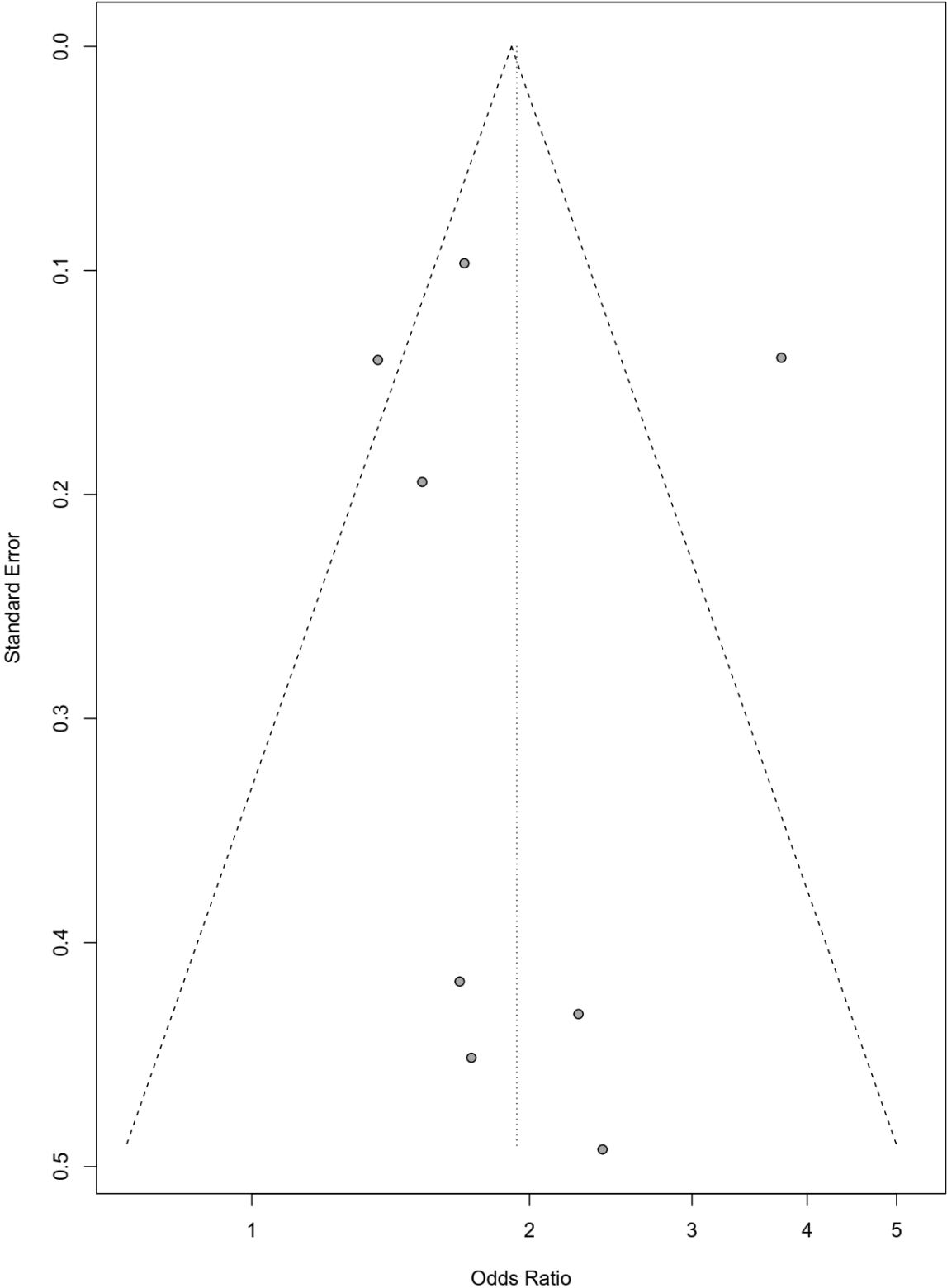
CLARITY group. Tool to Assess Risk of Bias in Case Control Studies [cited 2021 March 13].

Available from: <https://www.evidencepartners.com/wp-content/uploads/2017/09/Tool-to-Assess-Risk-of-Bias-in-Case-Control-Studies.pdf>

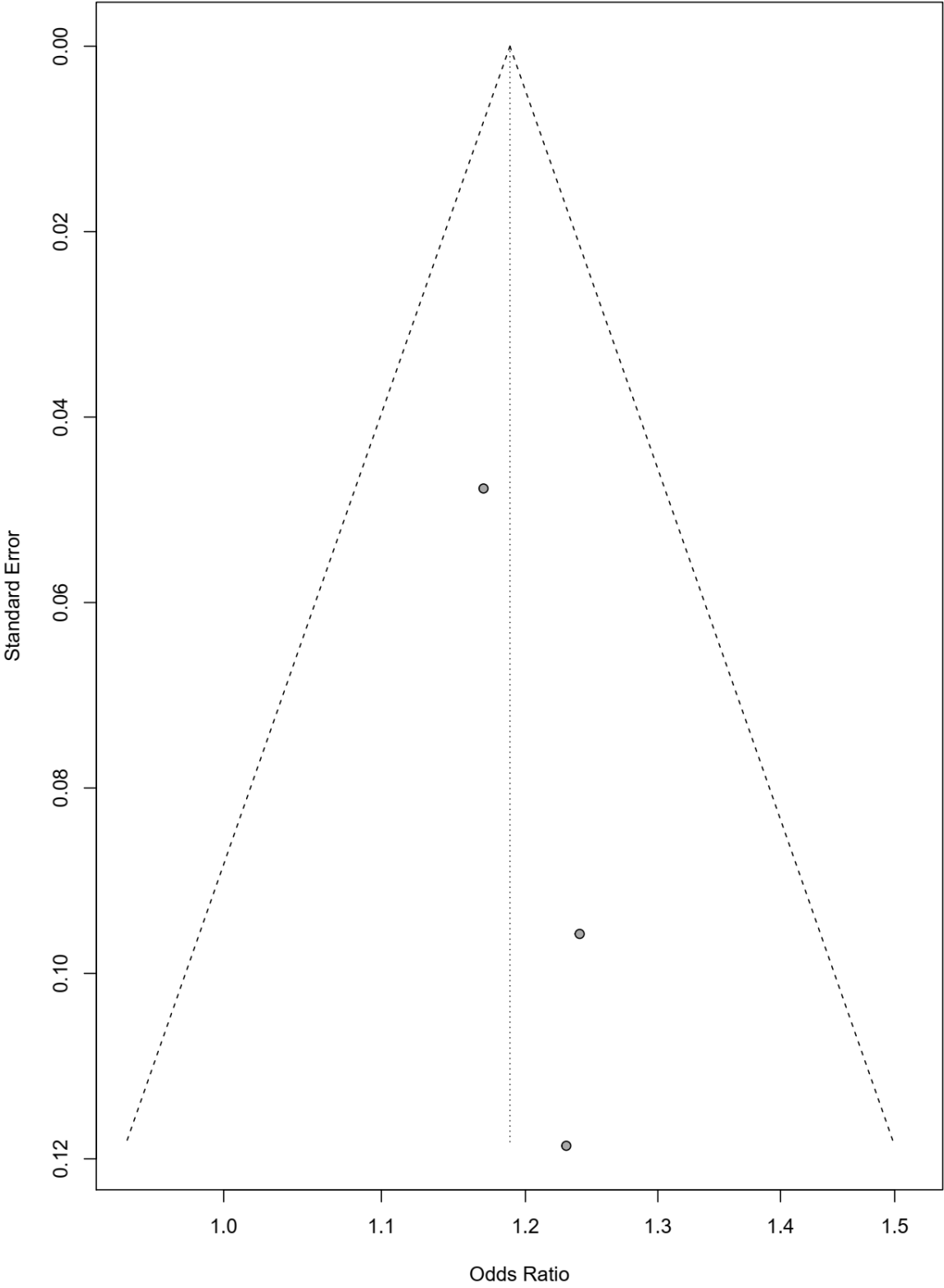
Supplementary Figure 1. Influencer analysis for studies reporting on the association between angiotensin converting enzyme inhibitors and vasoplegia



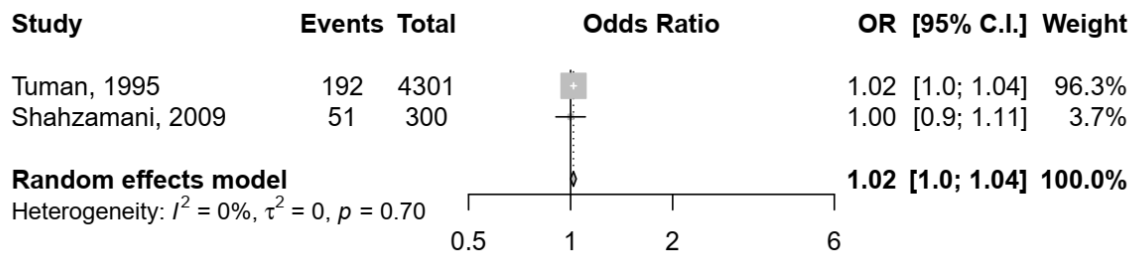
Supplementary Figure 2. Funnel plot for studies reporting on the association between angiotensin converting enzyme inhibitors and vasoplegia



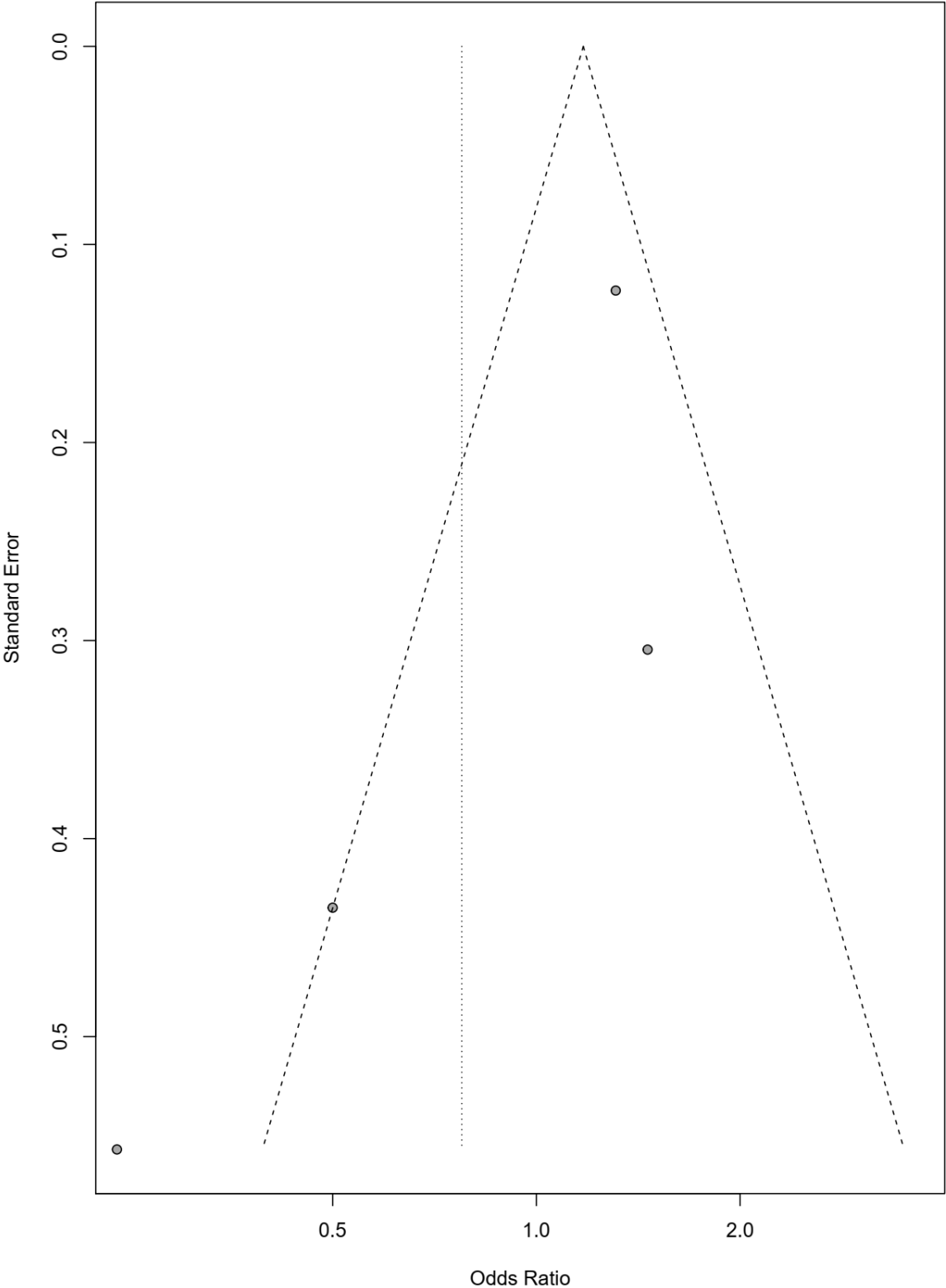
Supplementary Figure 3. Funnel plot for studies reporting on the association between angiotensin converting enzyme inhibitors and inotropic support



Supplementary Figure 4. Association between age and vasoplegia



Supplementary Figure 5. Funnel plot for studies reporting on the association between beta blockers and vasoplegia



Supplementary Figure 6. Funnel plot for studies reporting on the association between left ventricular dysfunction and vasoplegia

