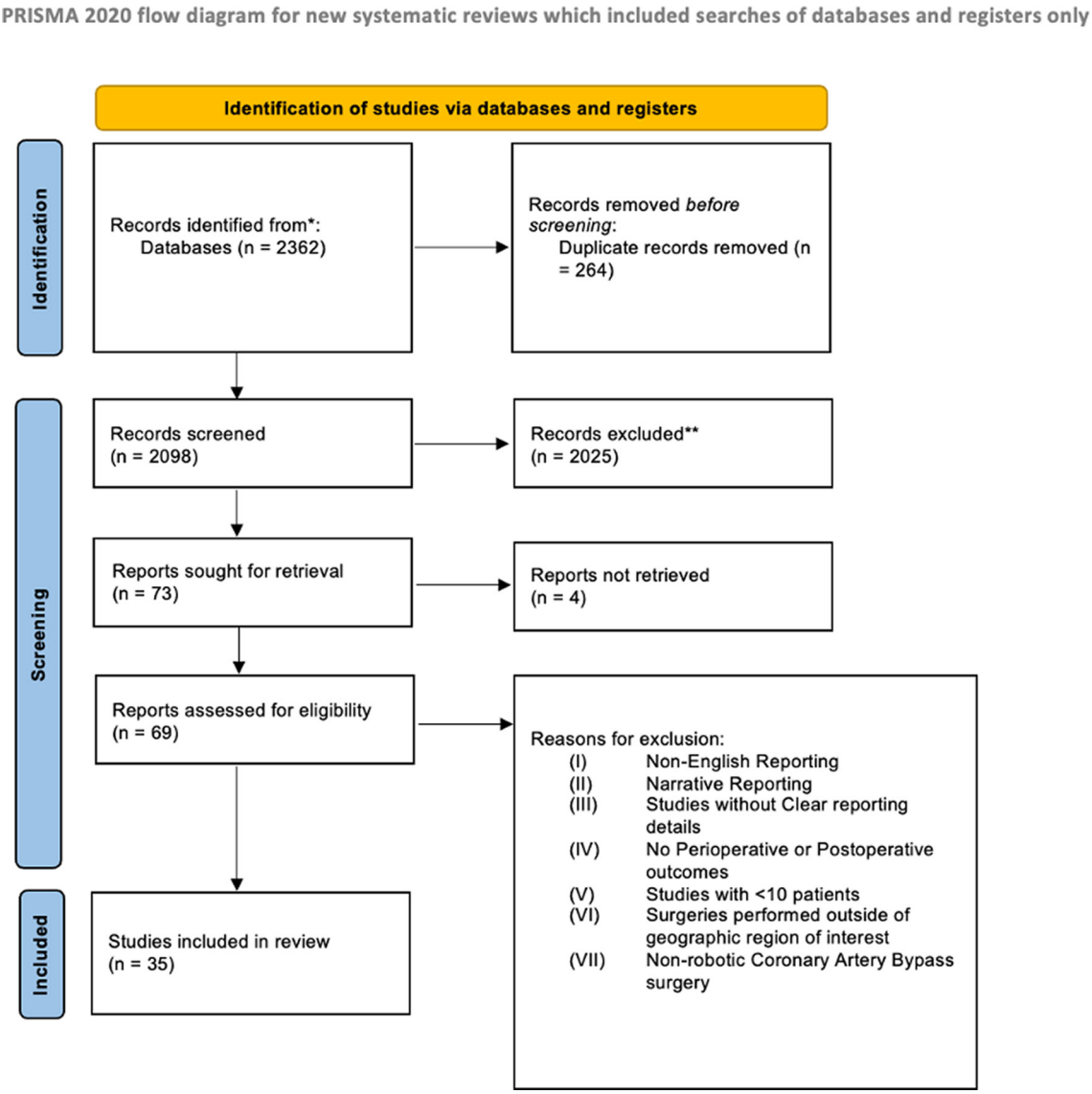

Figure S1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRIMSA) flowchart.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

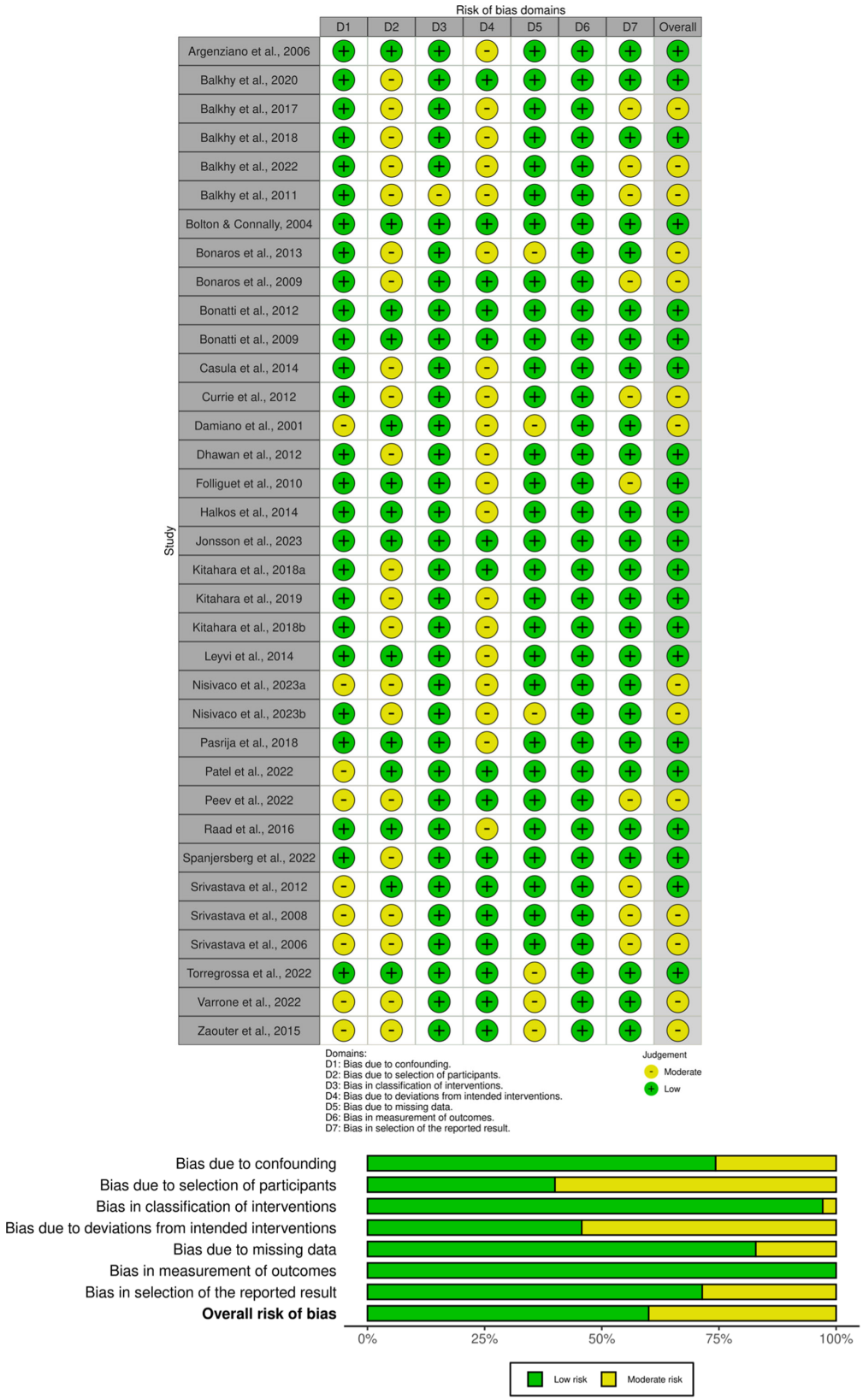

Figure S2 Risk of bias assessment (ROBINS-I Tool).

https://dx.doi.org/10.21037/acs-2024-rcabg-15

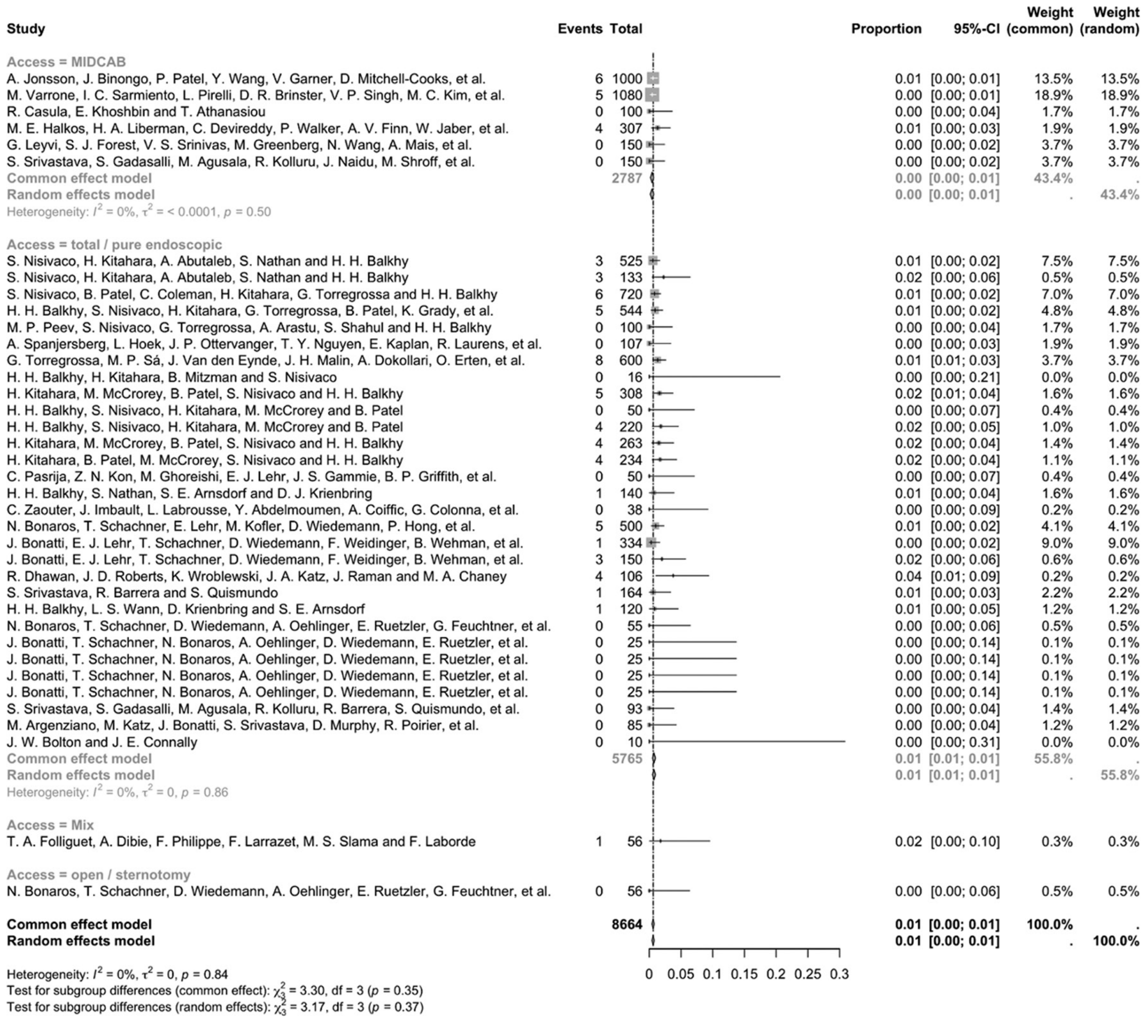

Figure S3 Forest plot for 30-day mortality via access approach.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

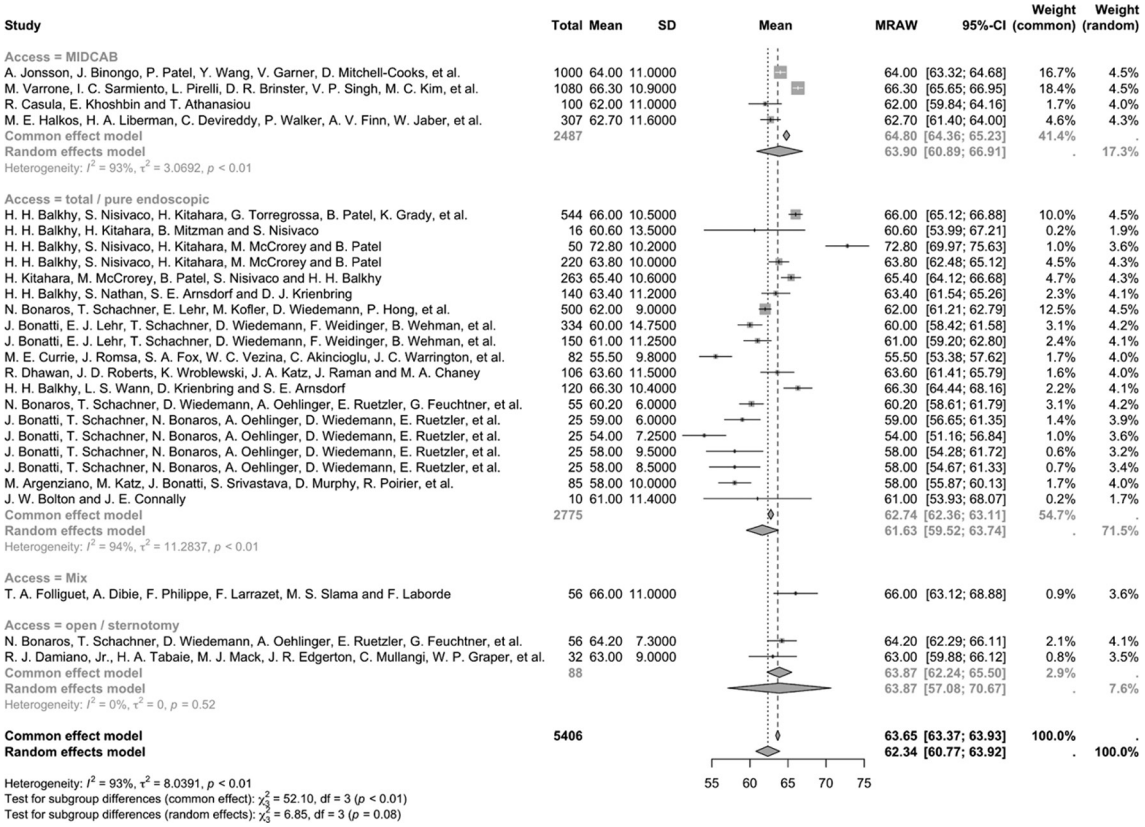

Figure S4 Forest plot for age stratified data via access approach.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

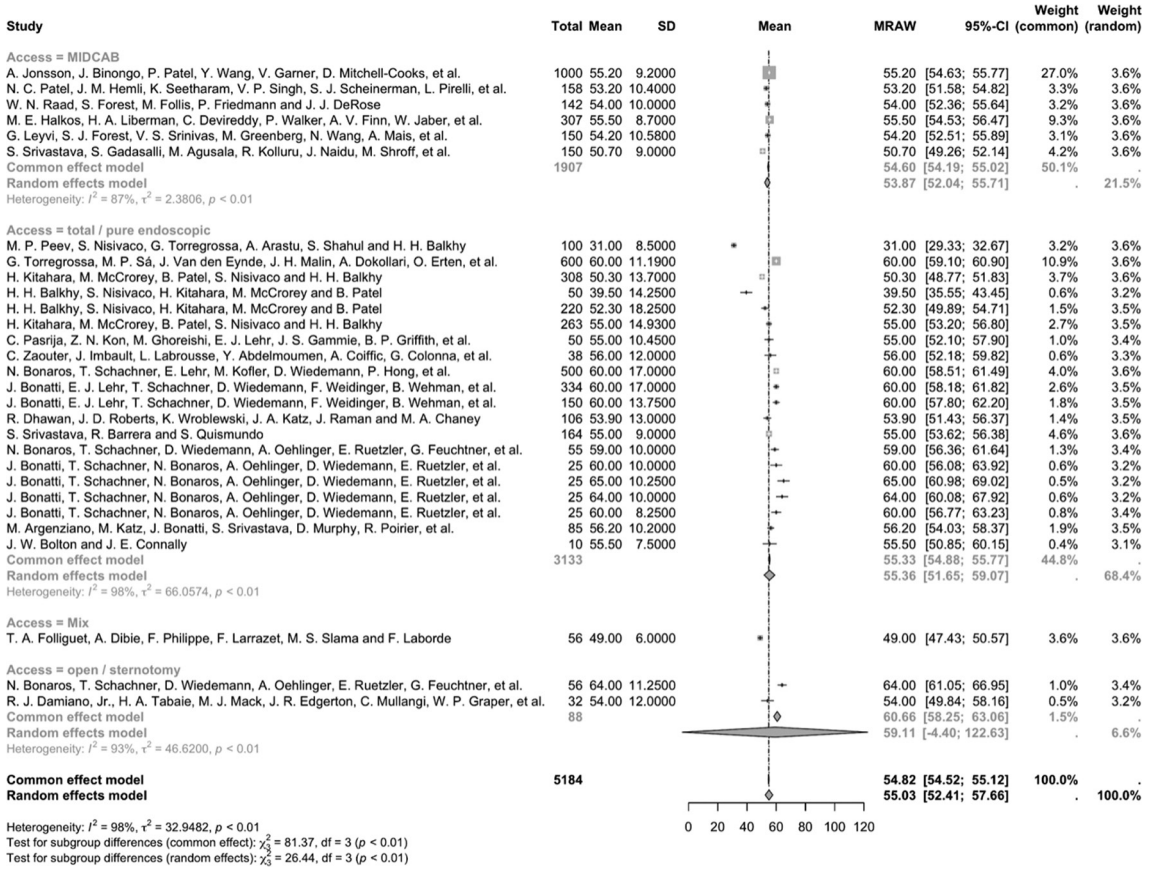

Figure S5 Forest plot for access approach stratified for preoperative ejection fraction.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

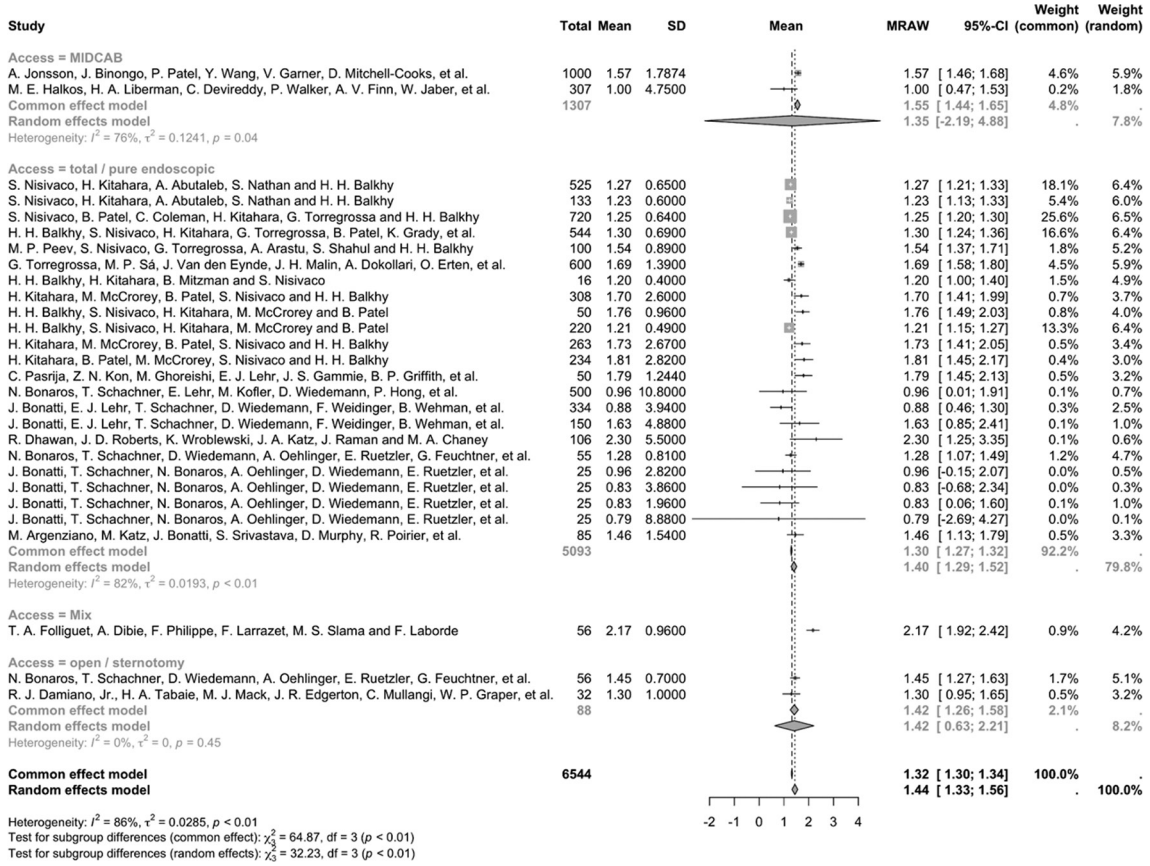

Figure S6 Forest plot for access approach stratified for ICU length of stay.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

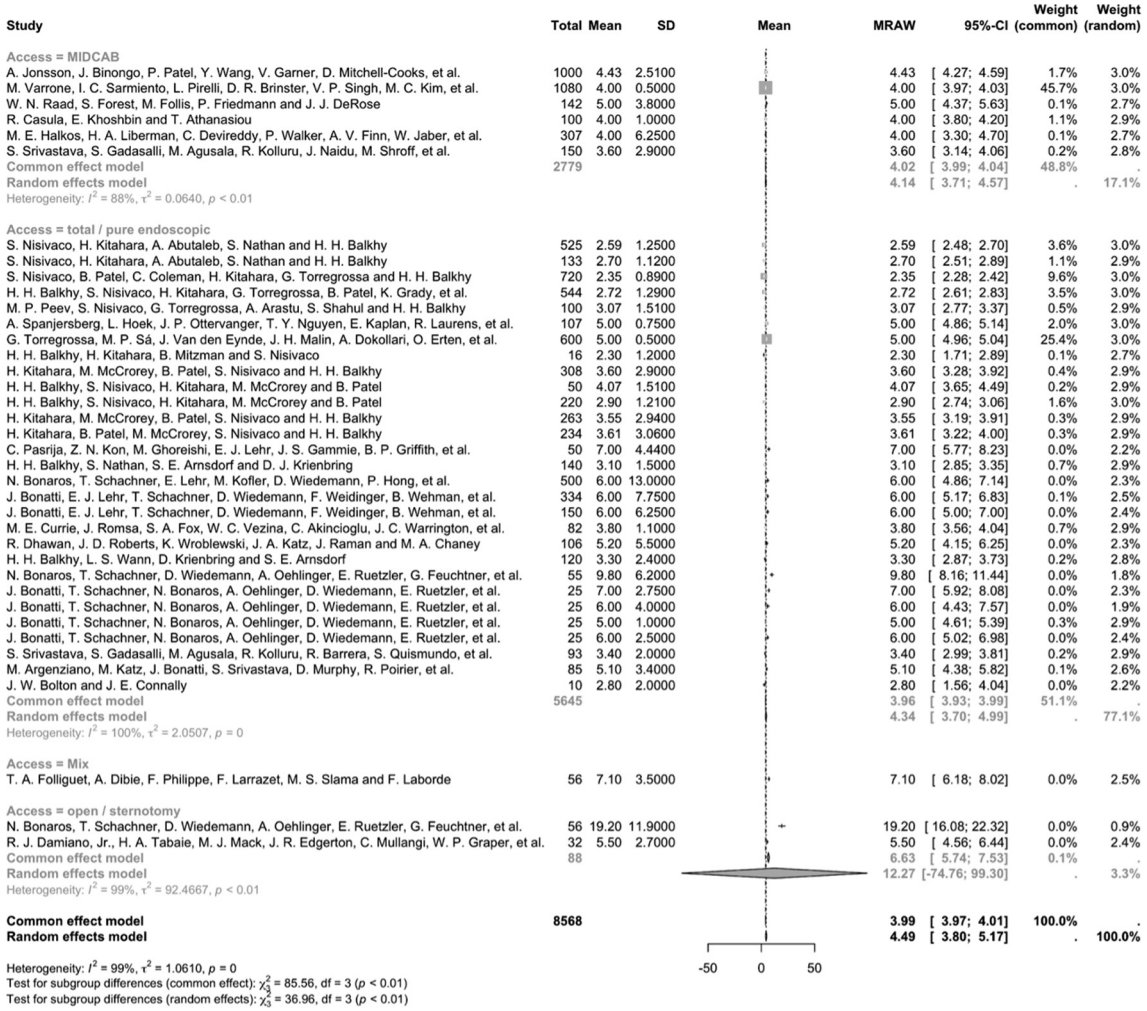

Figure S7 Forest plot for access approach stratified for hospital LOS.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

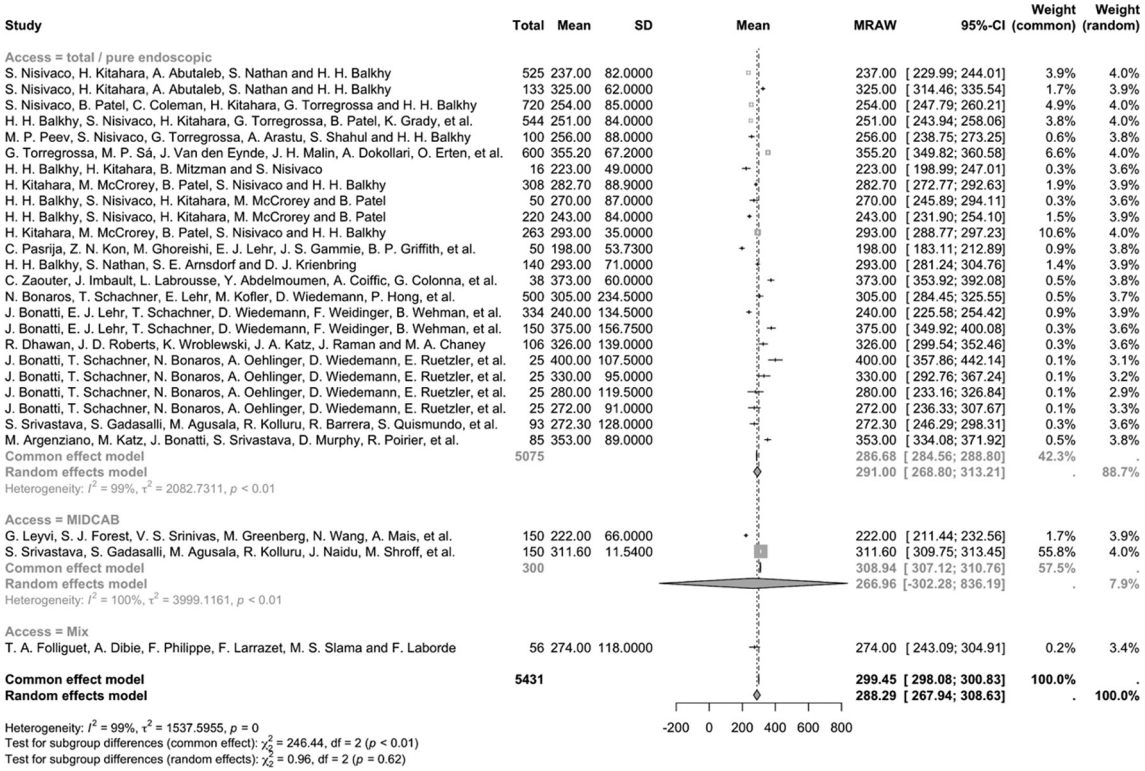

Figure S8 Forest plot for access approach stratified for operation time.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

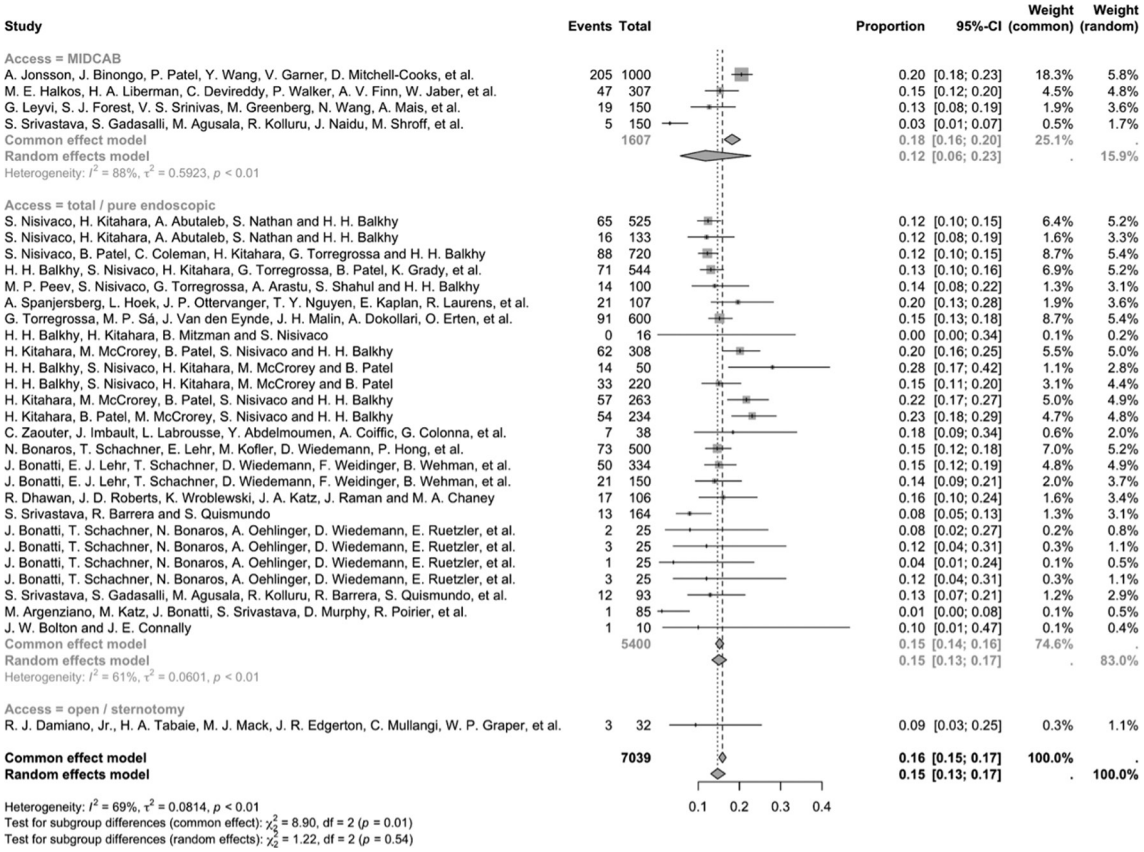

Figure S9 Forest plot for access approach stratified for post-operative atrial fibrillation.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

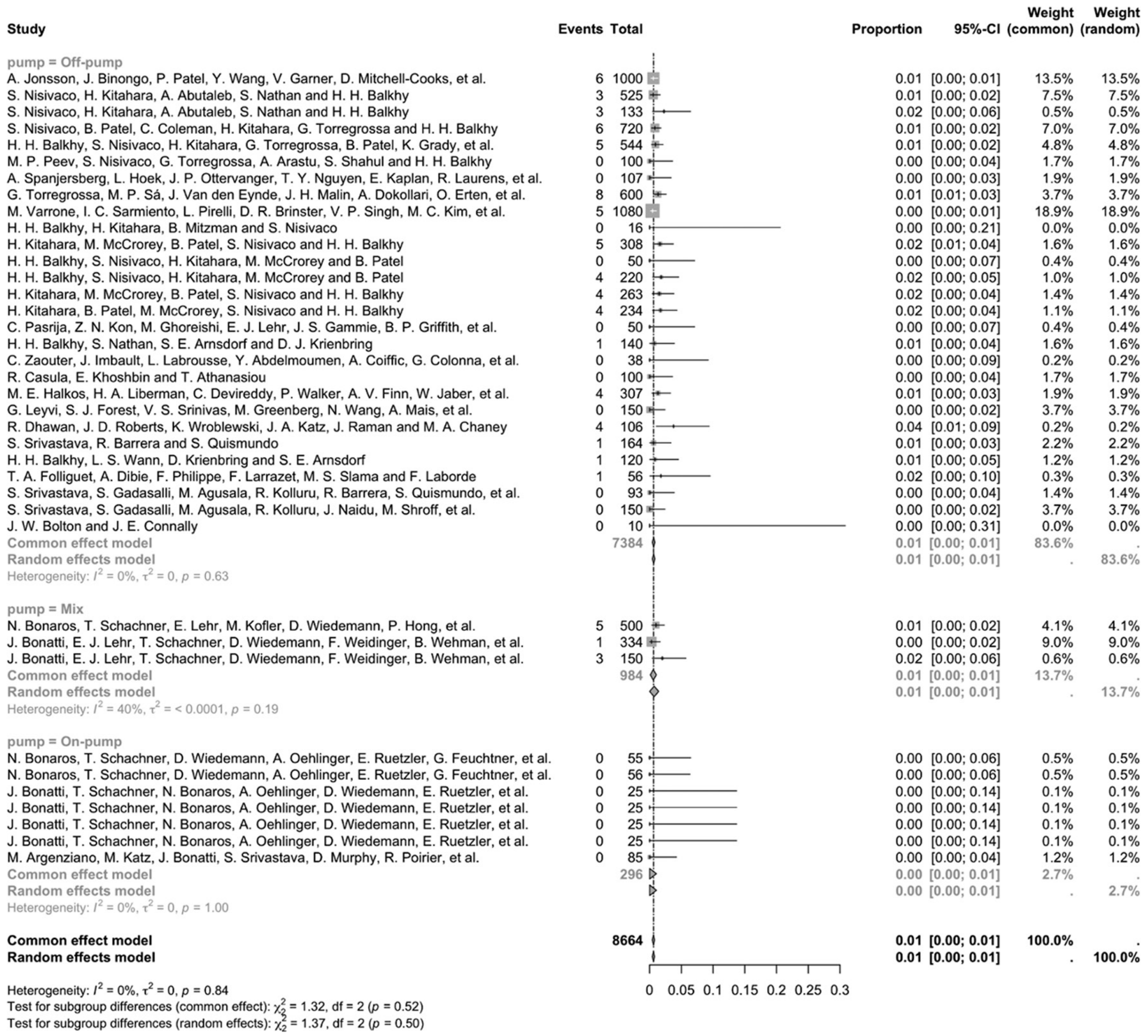

Figure S10 Forest plot for pump-stratified 30-day mortality.

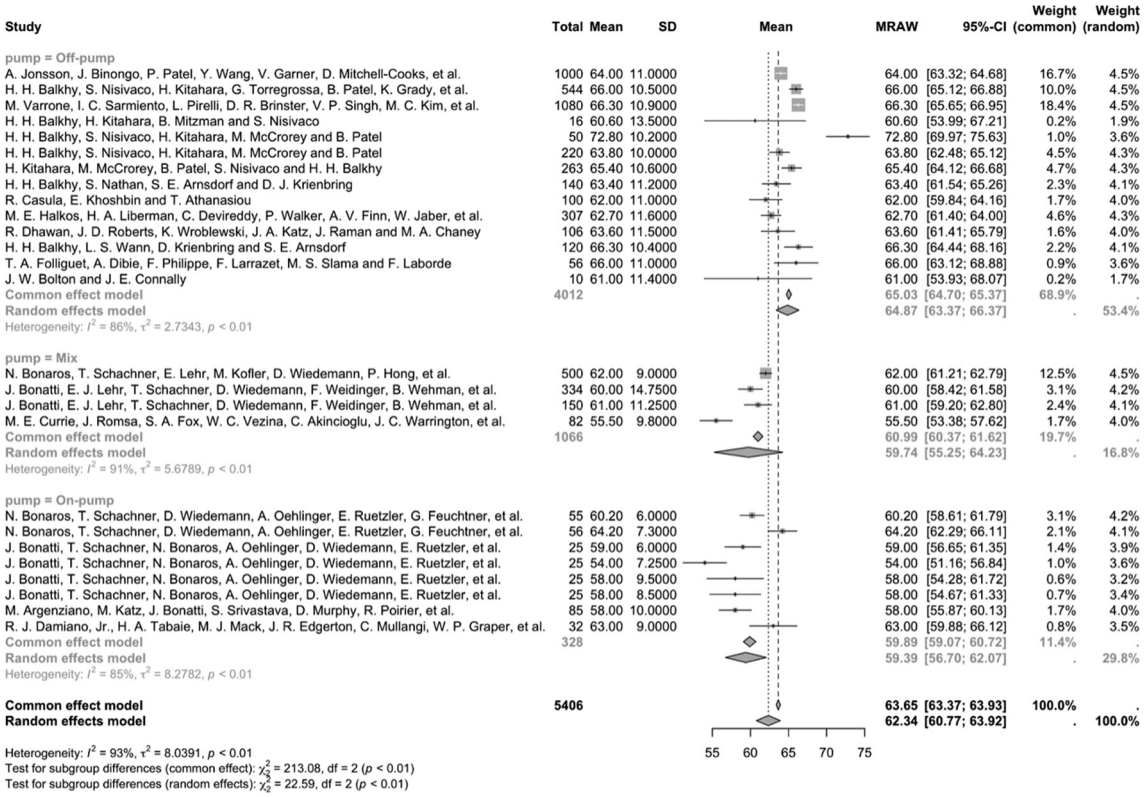

Figure S11 Forest plot for pump-stratified age.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

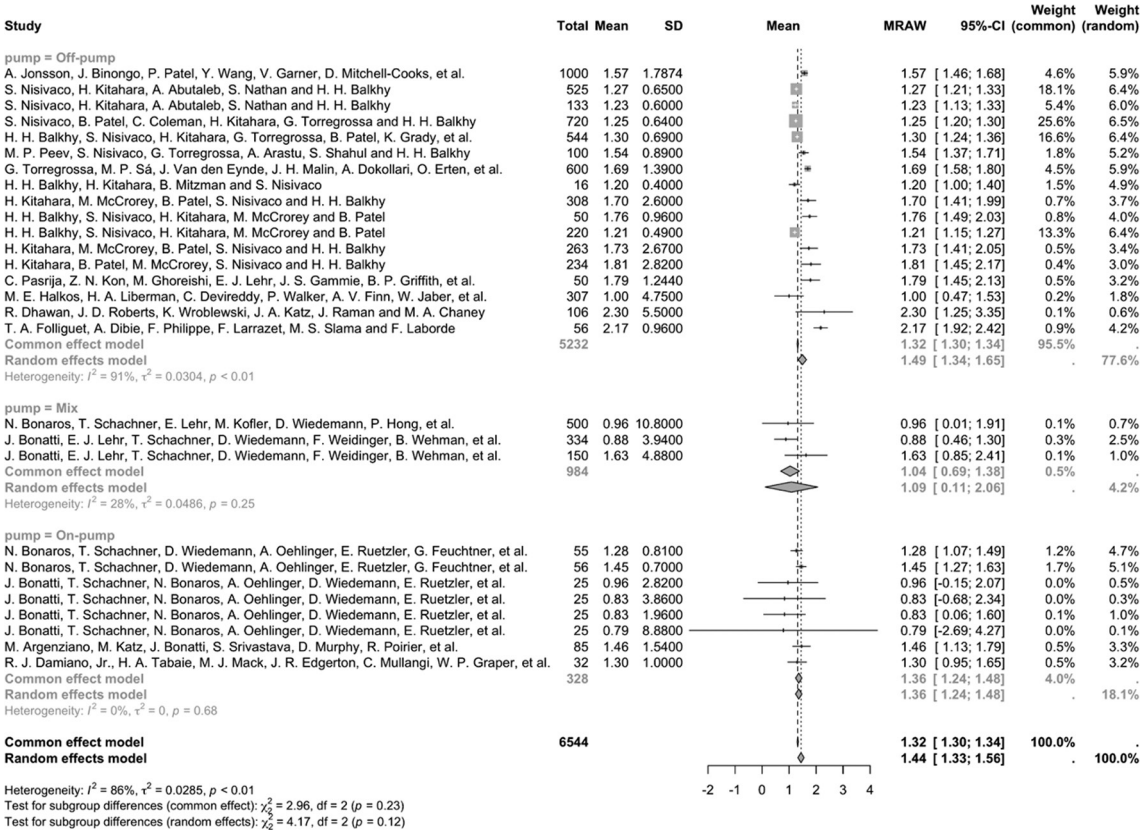

Figure S12 Forest plot for pump-stratified ICU length of stay.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

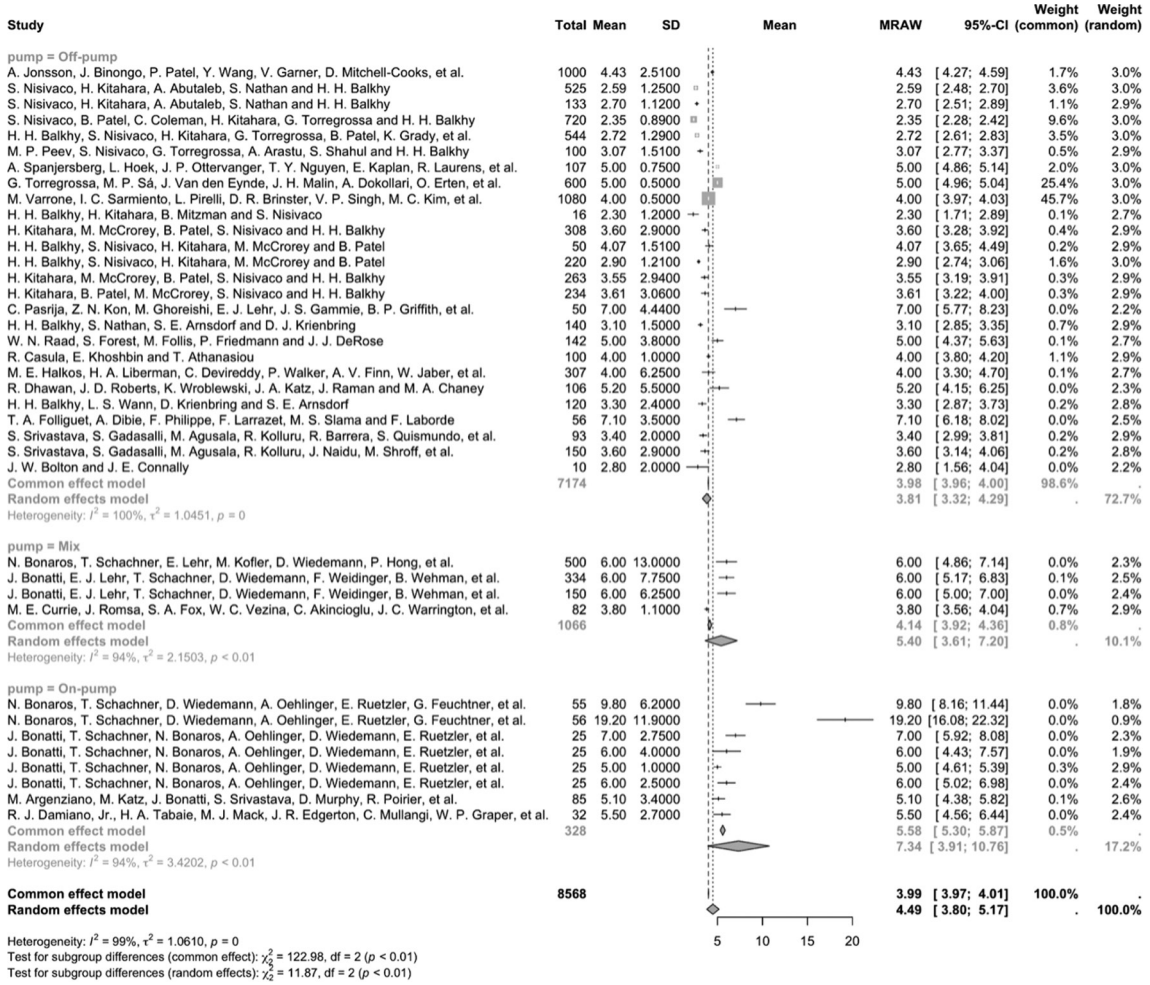

Figure S13 Forest plot for pump-stratified hospital length of stay.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

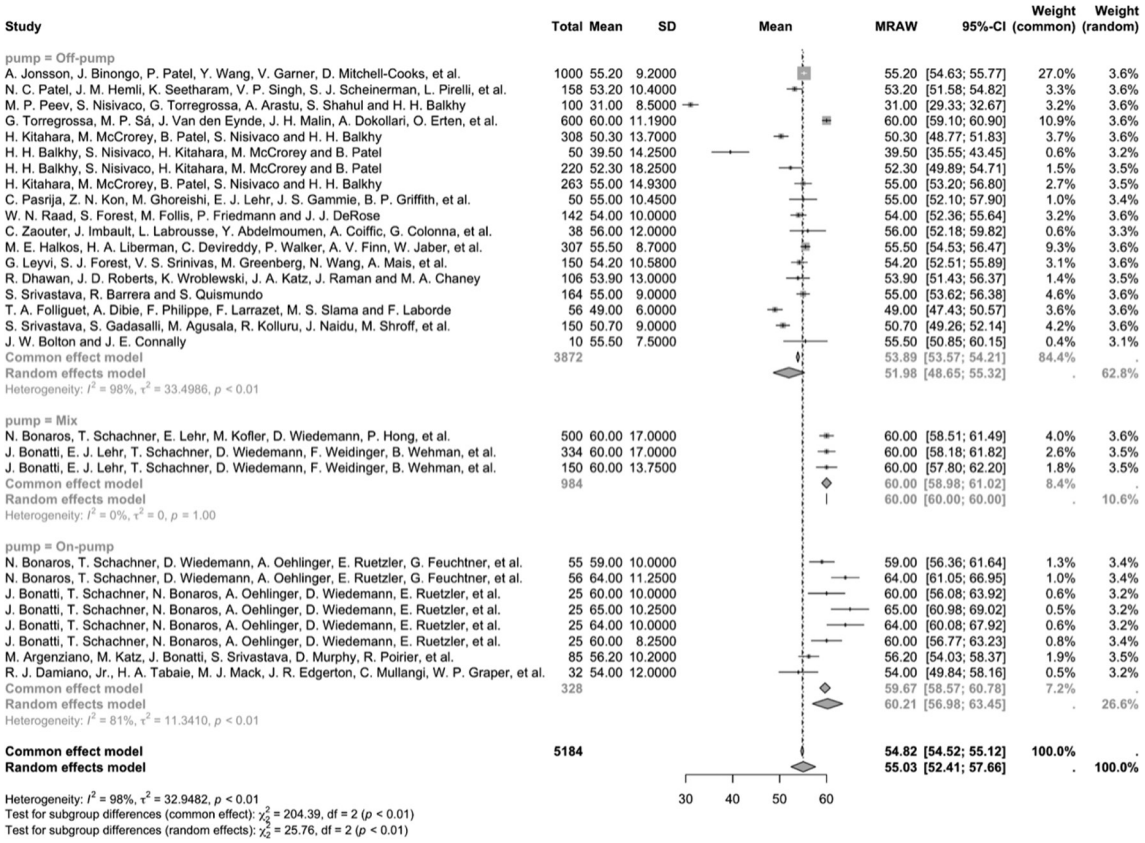

Figure S14 Forest plot for pump-stratified LVEF preoperatively.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

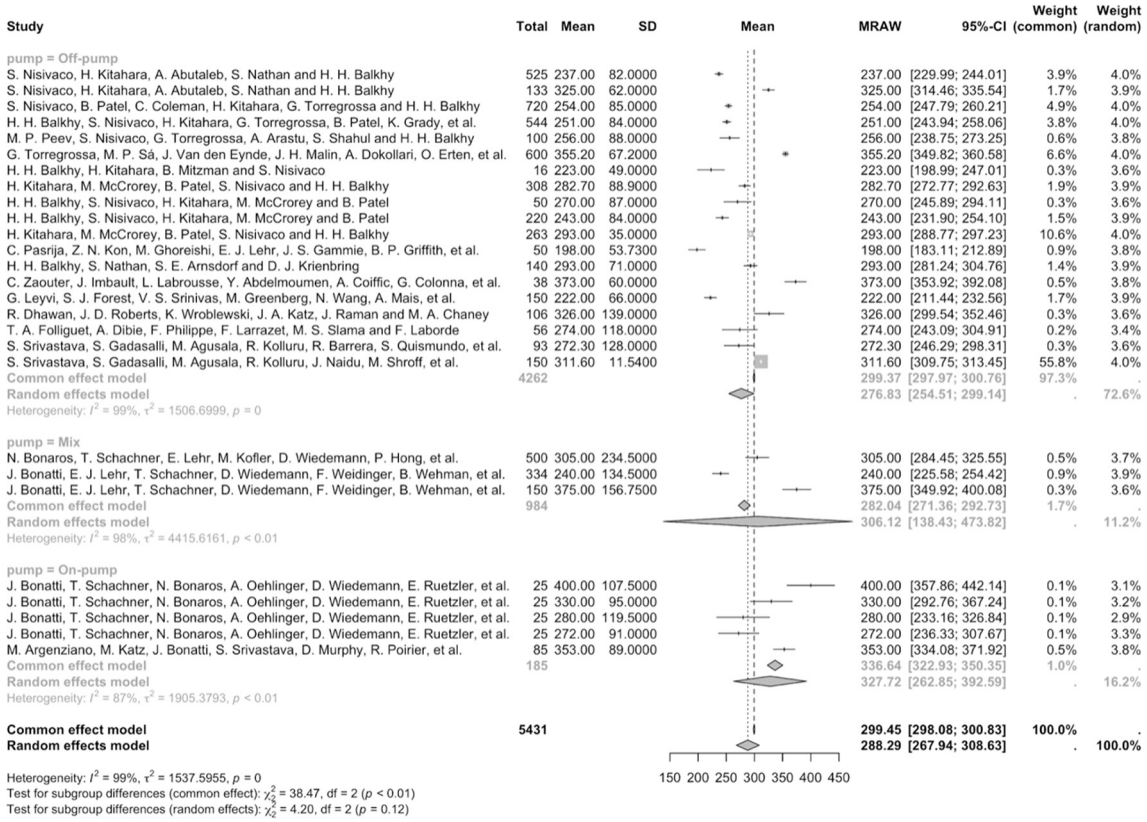

Figure S15 Forest plot for pump-stratified operation timing.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

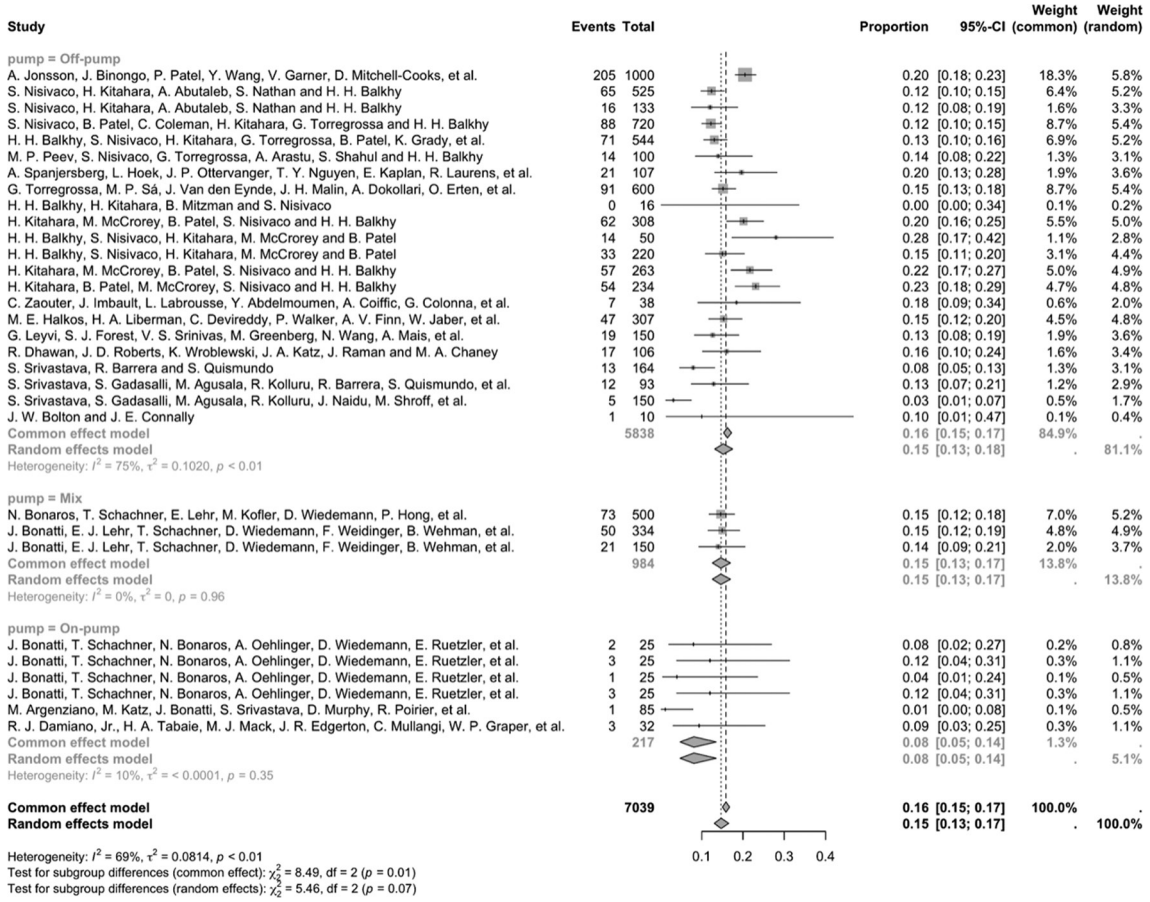

Figure S16 Forest plot for pump-stratified post-operative atrial fibrillation.

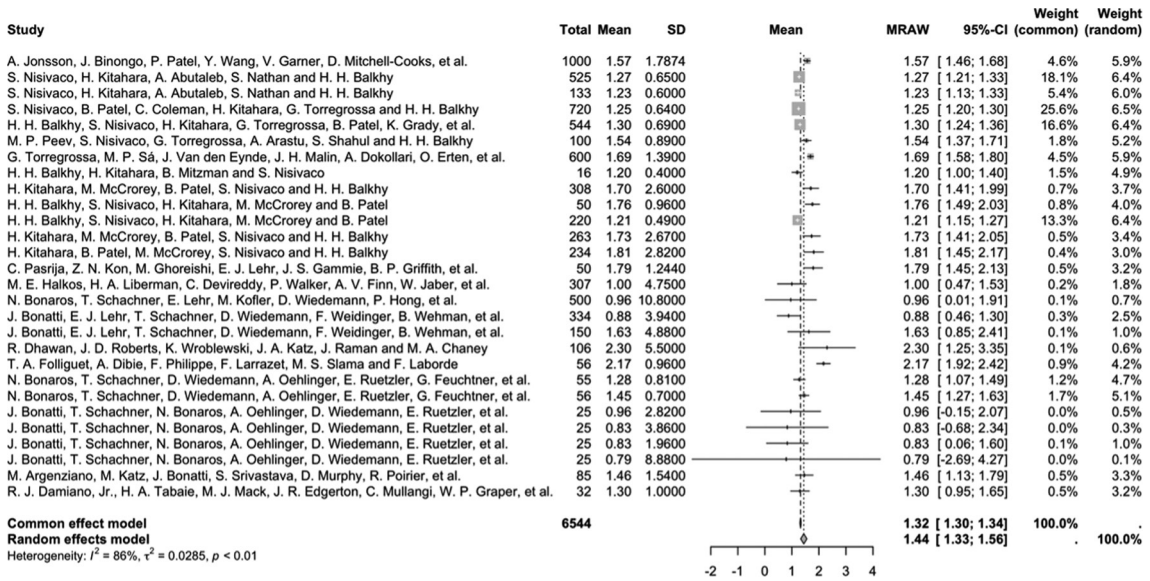

Figure S17 Forest plot for total ICU length of stay.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

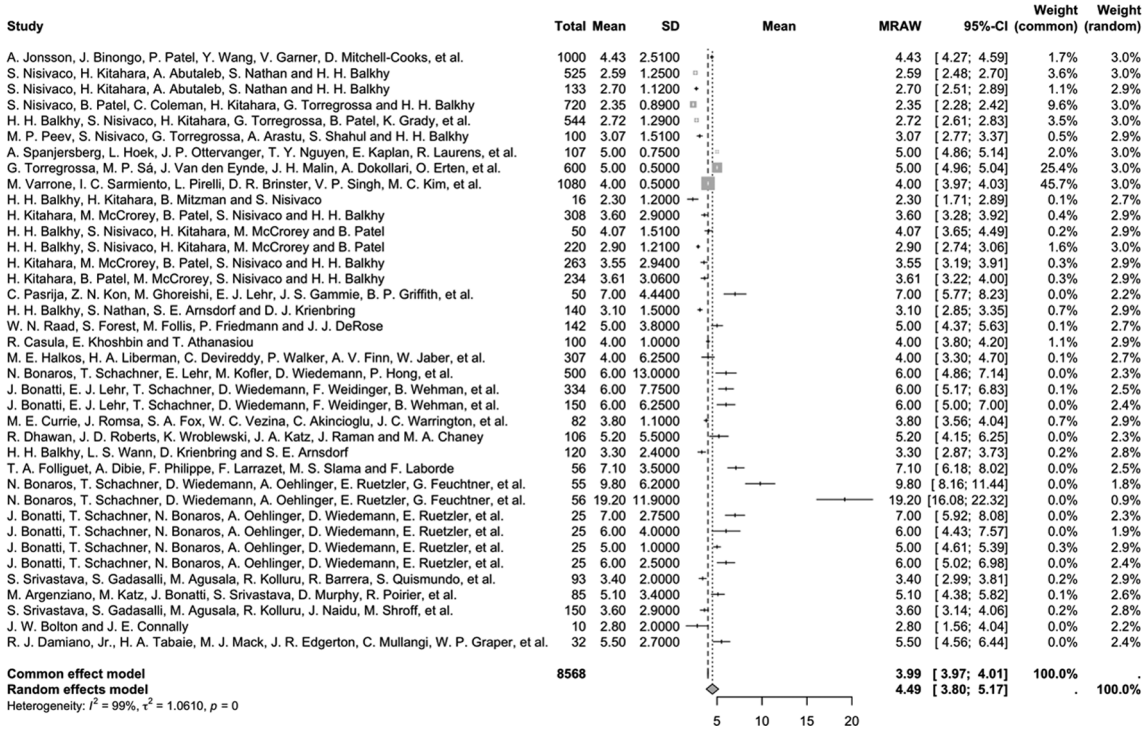

Figure S18 Forest plot for total hospital length of stay.

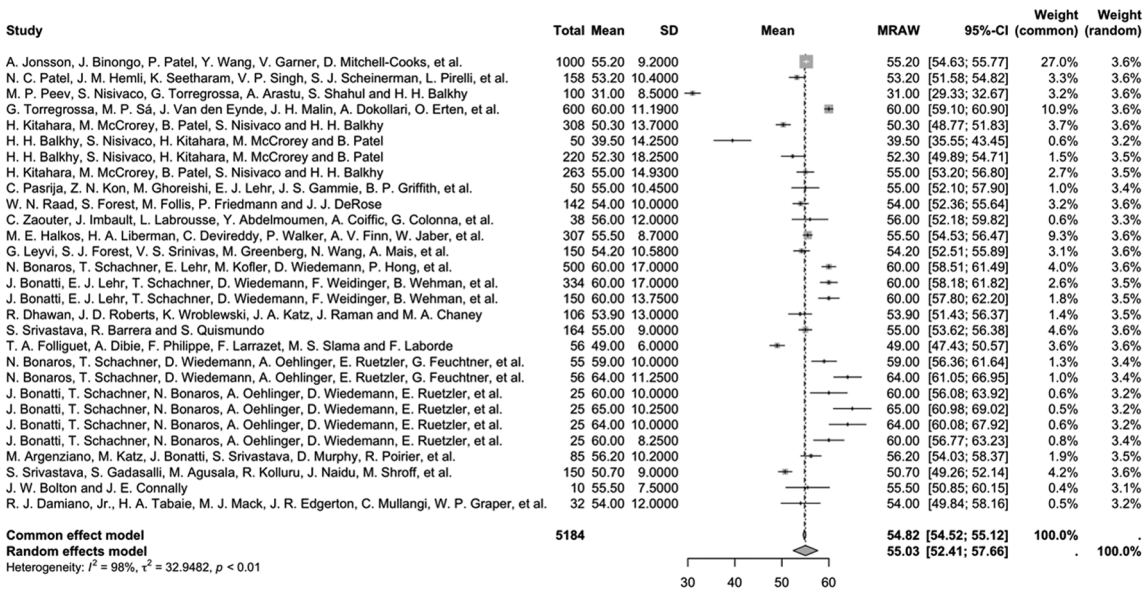

Figure S19 Forest plot for total LVEF.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

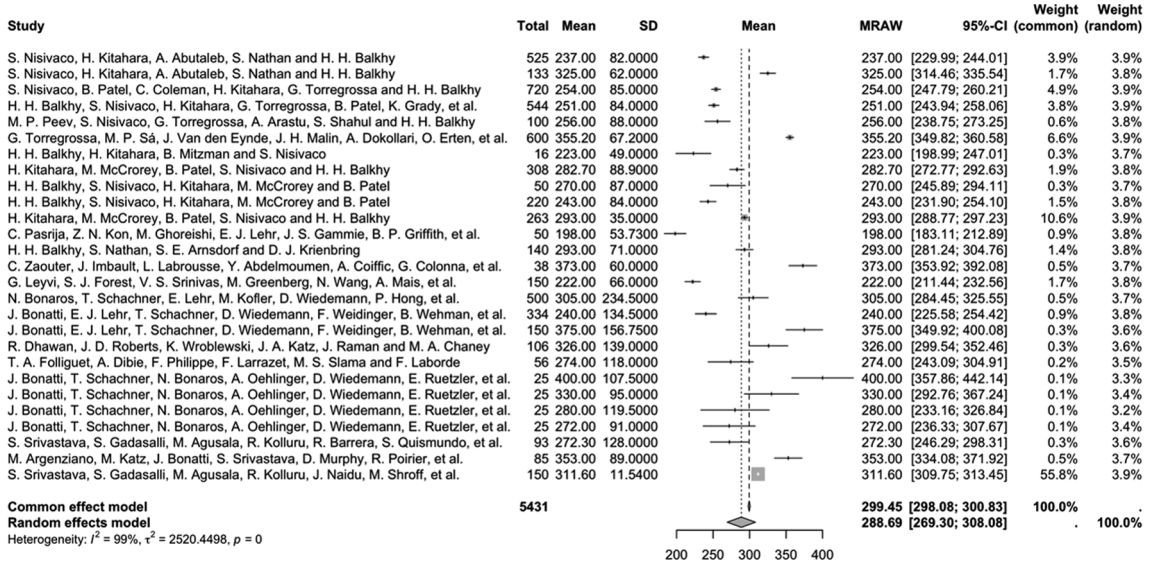

Figure S20 Forest plot for total operation time.

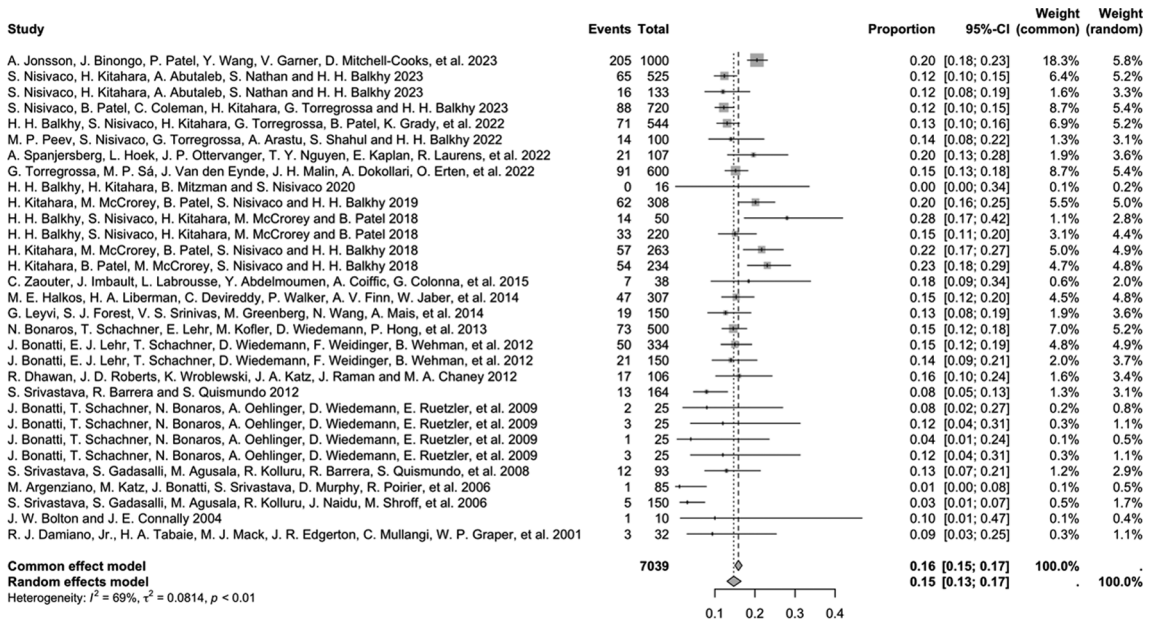

Figure S21 Forest plot for total post-operative atrial fibrillation.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

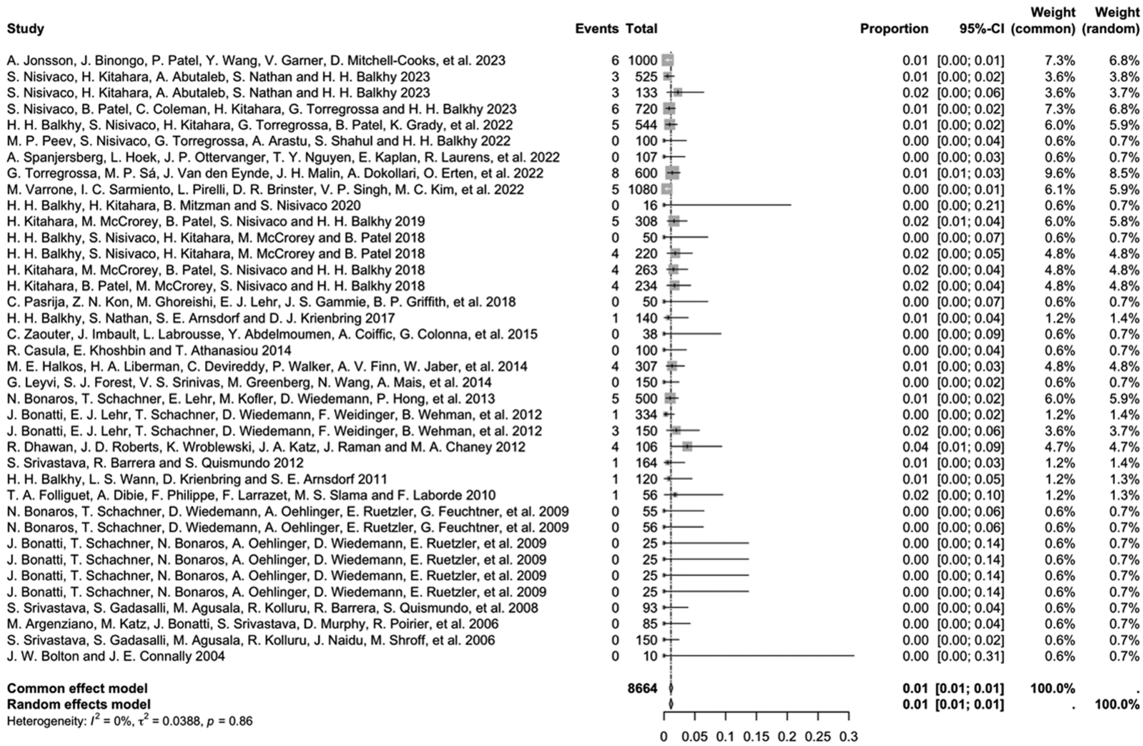

Figure S22 Forest plot for total 30-day mortality.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

Table S1 Detailed study characteristics (I)

Primary author	Year	Country	Study design	Males	Age ± SD (years)	HTN	T2DM	Dyslipidemia	MI history (all)	PVD	30-D Mort
A. Jonsson	2023	USA	SC; RCS	758	64±11	915	356	–	479	–	6
S. Nisivaco	2023	USA	SC; RCS	117	66	447	209	402	128	50	3
S. Nisivaco	2023	USA	SC; RCS	29	67	117	64	110	33	18	3
S. Nisivaco	2023	USA	SC; RCS	557	66	615	294	564	187	74	6
H. H. Balkhy	2022	USA	SC; RCS	411	66±10.5	451	219	410	149	62	5
N. C. Patel	2022	USA	SC; RCS	113	62.6	–	73	–	51	14	–
M. P. Peev	2022	USA	SC; RCS	76	66	91	48	80	38	17	0
A. Spanjersberg	2022	Netherlands	SC; PCS	77	65.3	56	16	–	20	–	0
G. Torregrossa	2022	USA	SC; RCS	0	74	532	266	548	336	88	8
M. Varrone	2022	USA	SC; RCS	809	66.3±10.9	–	556	–	374	109	5
H. H. Balkhy	2020	USA	SC; RCS	12	60.6±13.5	9	2	–	7	–	0
H. Kitahara	2019	USA	SC; RCS	83	65.6	254	123	230	–	41	5
H. H. Balkhy	2018	USA	SC; RCS	27	72.8±10.2	48	33	36	–	19	0
H. H. Balkhy	2018	USA	SC; RCS	168	63.8±10.0	173	76	166	–	15	4
H. Kitahara	2018	USA	SC; RCS	192	65.4±10.6	219	106	199	81	35	4
H. Kitahara	2018	USA	SC; RCS	62	66	193	94	177	74	–	4
C. Pasrija	2018	USA	SC; RCS	36	62	36	17	33	–	5	0
H. H. Balkhy	2017	USA	SC; RCS	106	63.4±11.2	–	–	–	–	–	1
W. N. Raad	2016	USA	SC; RCS	96	64.2	128	73	–		22	–
C. Zaouter	2015	France	SC; RCS	33	64	28	14	36	–	5	0
R. Casula	2014	UK	SC; RCS	95	62±11	–	17	–	18	–	0
M. E. Halkos	2014	USA	SC; PCS	219	62.7±11.6	282	109	296	161	38	4

SD, standard deviation; HTN, hypertension; T2DM, type 2 diabetes; MI, myocardial infarction; PVD, peripheral vascular disease; 30-D Mort, thirty-day mortality; SC, single-center; RCS, retrospective cohort study; PCS, prospective cohort study.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

Table S2 Detailed study characteristics (II)

Primary author	Year	COPD	CKD	Operation time (min)	Post-op AF	ICU stay (days)	Hospital stay (days)	Cohort N	Graft number
A. Jonsson	2023	–	20	–	–	1.6±1.8	4.43±2.51	1000	–
S. Nisivaco	2023	45	108	237±82	205	1.27±0.65	2.59±1.25	525	836
S. Nisivaco	2023	8	39	325±62	65	1.23±0.6	2.70±1.12	133	272
S. Nisivaco	2023	61	159	254±85	16	1.25±0.64	2.35±0.89	720	–
H. H. Balkhy	2022	52	112	251±84	88	1.30±0.69	2.72±1.29	544	892
N. C. Patel	2022	–	–	–	71	–	–	158	158
M. P. Peev	2022	16	33	256±88	–	1.54±0.89	3.07±1.51	100	162
A. Spanjersberg	2022	15	–	–	14	–	5 (4–7)	107	107
G. Torregrossa	2022	115	–	355.2 [315–405]	21	1.7 [1–2.9]	5.00 [4.00; 6.00]	600	689
M. Varrone	2022	–	46	–	91	–	4 (3–5)	1080	–
H. H. Balkhy	2020	0	1	223±49	–	1.2±0.4	2.3±1.2	16	16
H. Kitahara	2019	31	62	282.7±88.9	0	1.7±2.6	3.6±2.9	308	513
H. H. Balkhy	2018	13	28	270±87	62	1.76±0.96	4.07±1.51	50	80
H. H. Balkhy	2018	14	27	243±84	14	1.21±0.49	2.90±1.21	220	375
H. Kitahara	2018	26	54	293 (210–350)	33	1.73±2.67	3.55±2.94	263	–
H. Kitahara	2018	23	49	295	57	1.81±2.82	3.61±3.06	234	399
C. Pasrija	2018	–	–	198	54	1.8 (IQR 1–2.7)	7 (IQR 6–12)	50	50
H. H. Balkhy	2017	–	50	293±71	–	–	3.1±1.5	140	288
W. N. Raad	2016	22	–	–	–	–	5 (3.8)	142	–
C. Zaouter	2015	7	–	373±60	–	0.88	8	38	38
R. Casula	2014	7	–	–	7	–	4±1	100	100
M. E. Halkos	2014	–	10	–	–	1.0 (0–19)	4 (2–27)	307	307

COPD, chronic obstructive pulmonary disease; CKD, chronic kidney disease; AF, atrial fibrillation; ICU, intensive care unit.

https://dx.doi.org/10.21037/acs-2024-rcabg-15

Table S3 Detailed study characteristics (III)

Primary author	Year	Country	Study design	Males	Age ± SD (years)	HTN	T2DM	Dyslipidemia	MI history (all)	PVD	30-D Mort
G. Leyvi	2014	USA	PCS	103	64.76	–	76	–	59	–	0
N. Bonaros	2013	USA; Austria	MC; RCS	364	62±9	406	133	419	162	32	5
J. Bonatti	2012	Austria; USA	MC; RCS	233	60 (31–90)	–	–	–	91	22	1
J. Bonatti	2012	Austria; USA	MC; RCS	117	61 (38–83)	–	–	–	61	9	3
M. E. Currie	2012	Canada	SC; RCS	77	55.5±9.8	–	10	–	7	2	–
R. Dhawan	2012	USA	SC; RCS	79	63.6±11.5	98	36	78	30	5	4
S. Srivastava	2012	USA	SC; RCS	128	63	91	9	0	26	2	1
H. H. Balkhy	2011	USA	SC; RCS	86	66.3±10.4	73	23	67	–	7	1
T. A. Folliguet	2010	France	SC; PCS	46	66±11	32	14	–	37		1
N. Bonaros	2009	USA	SC; RCS	43	60.2±6.0	49	7	44	–	0	0
N. Bonaros	2009	USA	SC; RCS	49	64.2±7.3	41	9	50	–	2	0
J. Bonatti	2009	USA	SC; RCS	17	59 (46–70)	22	3	21	10	0	0
J. Bonatti	2009	USA	SC; RCS	21	54 (38–67)	19	1	20	8	1	0
J. Bonatti	2009	USA	SC; RCS	25	58 (38–76)	20	4	22	5	0	0
J. Bonatti	2009	USA	SC; RCS	18	58 (40–74)	22	1	22	5	1	0
S. Srivastava	2008	USA	SC; PSC	47	67.4	73	38	31	26	–	0
M. Argenziano	2006	USA; Austria	MC; RCS	69	58±10	47	18	68	32	2	0
S. Srivastava	2006	USA	SC; RCS	99	67.2	117	69	–	42	21	0
J. W. Bolton	2004	USA	SC; PCS	6	61±11.4	–	2	–	3	–	0
R. J. Damiano	2001	USA	MC; PCS	24	63±9	–	–	–	–	–	–

SD, standard deviation; HTN, hypertension; T2DM, type 2 diabetes; MI, myocardial infarction; PVD, peripheral vascular disease; 30-D Mort, thirty-day mortality; PCS, prospective cohort study; MC, multi-center; SC, single-center; RCS, retrospective cohort study.

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Table S4 Detailed study characteristics (IV)

Primary Author	Year	COPD	CKD	Operation time (min)	Post-op AF	ICU stay (h)	Hospital stay (days)	Cohort N	Graft number
G. Leyvi	2014	103	–	222±66	19	–	6	150	–
N. Bonaros	2013	364	8	305 (112–1050)	73	23 (11–1,048)	9 (0–704)	500	683
J. Bonatti	2012	233	1	240 (112–650)	50	21 (11–389)	6 (2–33)	334	334
J. Bonatti	2012	117	0	375 (168–795)	21	39 (12–480)	6 (2–27)	150	300
M. E. Currie	2012	77	–	–	–	–	3.8±1.1	82	–
R. Dhawan	2012	79	–	326±139	17	2.3 (0–22)	5.2 (2–24)	106	192
S. Srivastava	2012	128	2	–	13	–	–	164	243
H. H. Balkhy	2011	86	3	–	–	–	3.3±2.4	120	167
T. A. Folliguet	2010	46	2	274±118		52±23	7.1±3.5	56	59
N. Bonaros	2009	43	–	–	–	30.6±19.5	9.8±6.2	55	55
N. Bonaros	2009	8	–	–	–	46±21.1	–	9	123
N. Bonaros	2009	49	–	–	–	34.7±16.8	–	56	25
J. Bonatti	2009	17	0	400 (260–690)	2	23 (11–282)	7 (4–15)	25	25
J. Bonatti	2009	21	0	330 (240–620)	3	20 (18–389)	6 (5–21)	25	25
J. Bonatti	2009	25	0	280 (205–683)	1	20 (14–61)	5 (4–8)	25	25
J. Bonatti	2009	18	0	272 (178–542)	3	19 (17–230)	6 (4–14)	25	136
S. Srivastava	2008	47	3	272.3±128	12	–	3.4±2.0	93	85
M. Argenziano	2006	69	1	353±89	1	35±37	5.1±3.4	85	390
S. Srivastava	2006	99	7	311.6±11.54	4.7	–	3.6±2.9	150	12
J. W. Bolton	2004	6	0	200	1	–	2.8 (1–9)	10	90
R. J. Damiano	2001	24	–	–	3	31±24	5.5±2.7	32	–

COPD, chronic obstructive pulmonary disease; CKD, chronic kidney disease; AF, atrial fibrillation; ICU, intensive care unit.

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