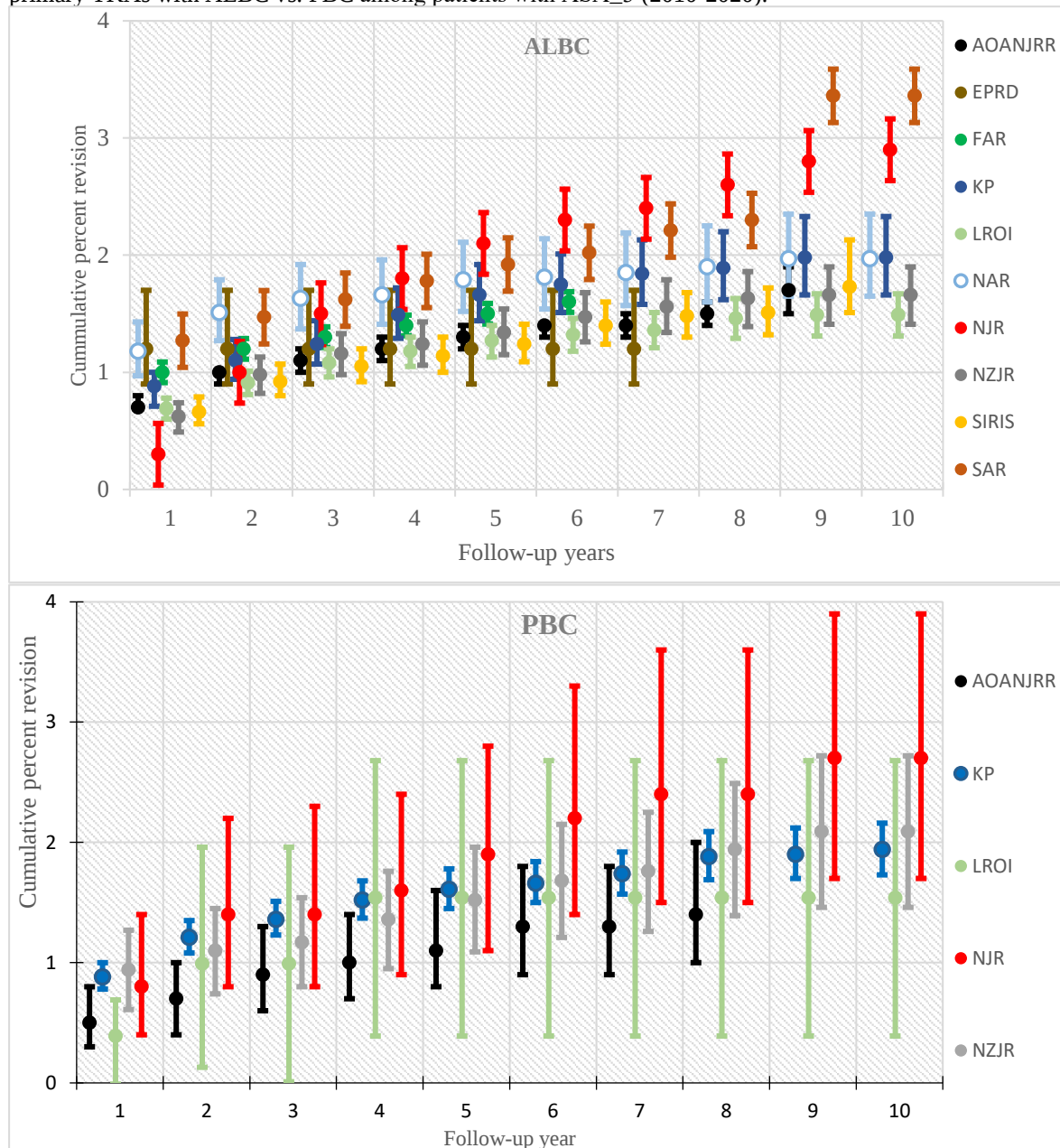


Supplement Figures

Supplement Figure 1: Cumulative percent revision (one minus -Kaplan-Meier) revision for PJI following primary TKAs with ALBC vs. PBC among patients with ASA $\geq$ 3 (2010-2020).^a



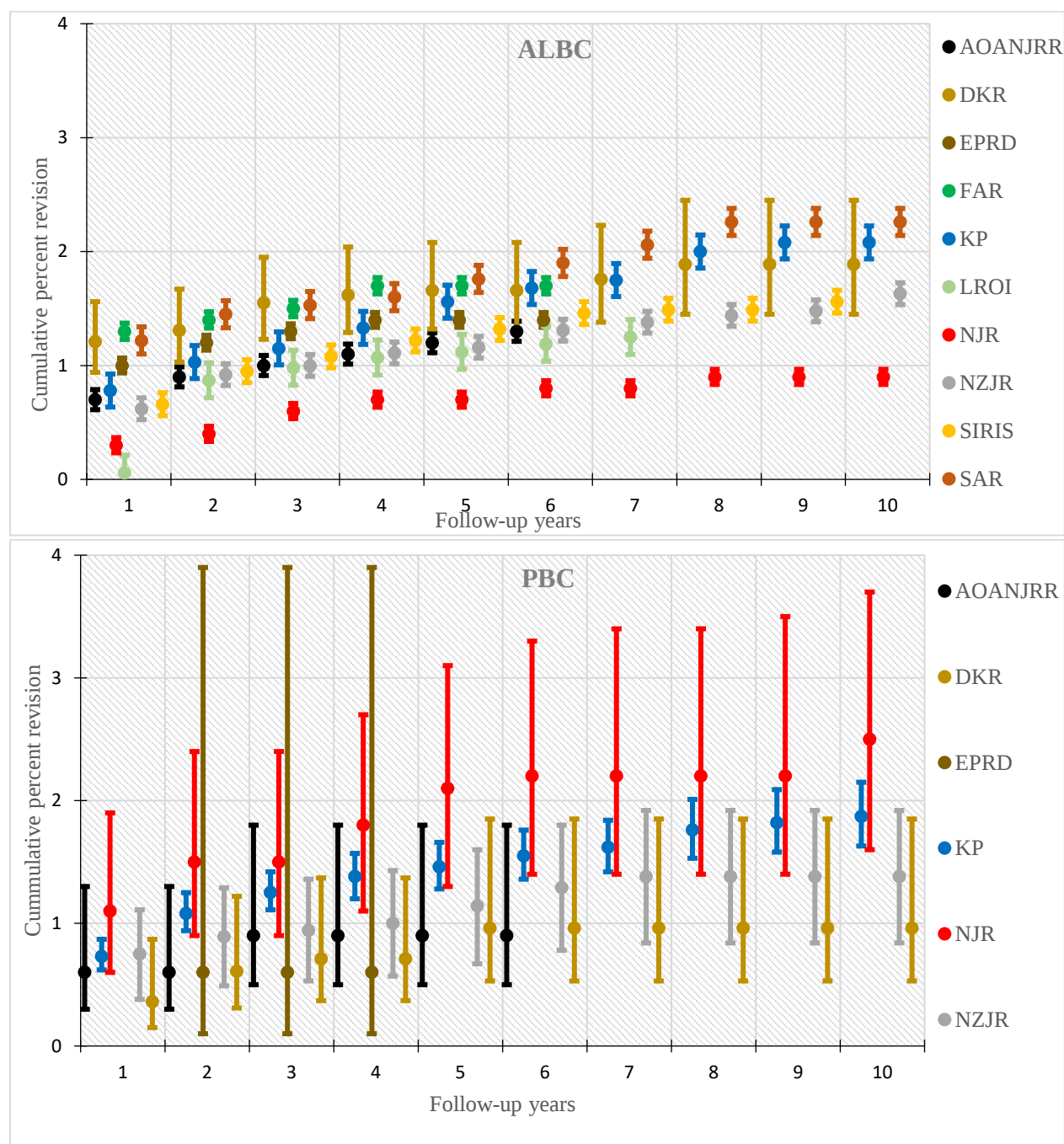
ALBC = Antibiotic loaded bone cement. PBC = plain bone cement

^a NAR= The Norwegian Arthroplasty Register include 100% ALBC.

DKR= The Danish Knee Arthroplasty Registry do not collect data on ASA.

EPRD (The German Arthroplasty Registry) and SIRIS (Swiss National Implant Register) had no revision cases for PJI in the TKA with PBC among patients with ASA $\geq$ 3.

Supplement Figure 2: Cumulative percent revision (one minus -Kaplan-Meier) revision for PJI following primary TKAs with ALBC vs. PBC among patients with BMI $\geq$ 35 (2010-2020).^a

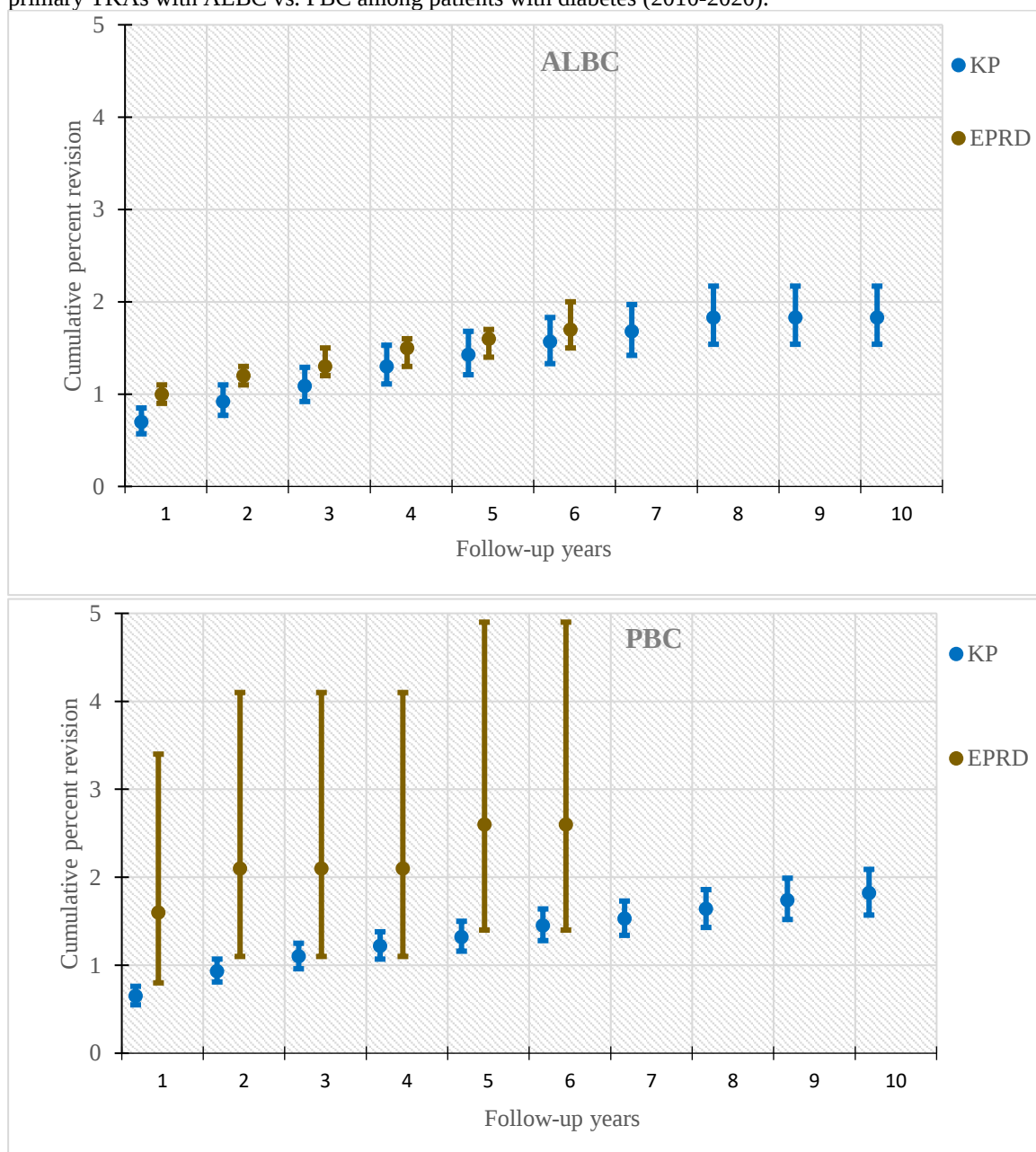


ALBC = Antibiotic loaded bone cement. PBC = plain bone cement

^a NAR= The Norwegian Arthroplasty Register do not collect data on BMI.

LROI (Dutch Arthroplasty Register) and SIRIS (Swiss National Implant Register) had no revision cases in the TKA with PBC among patients with BMI $\geq$ 35.

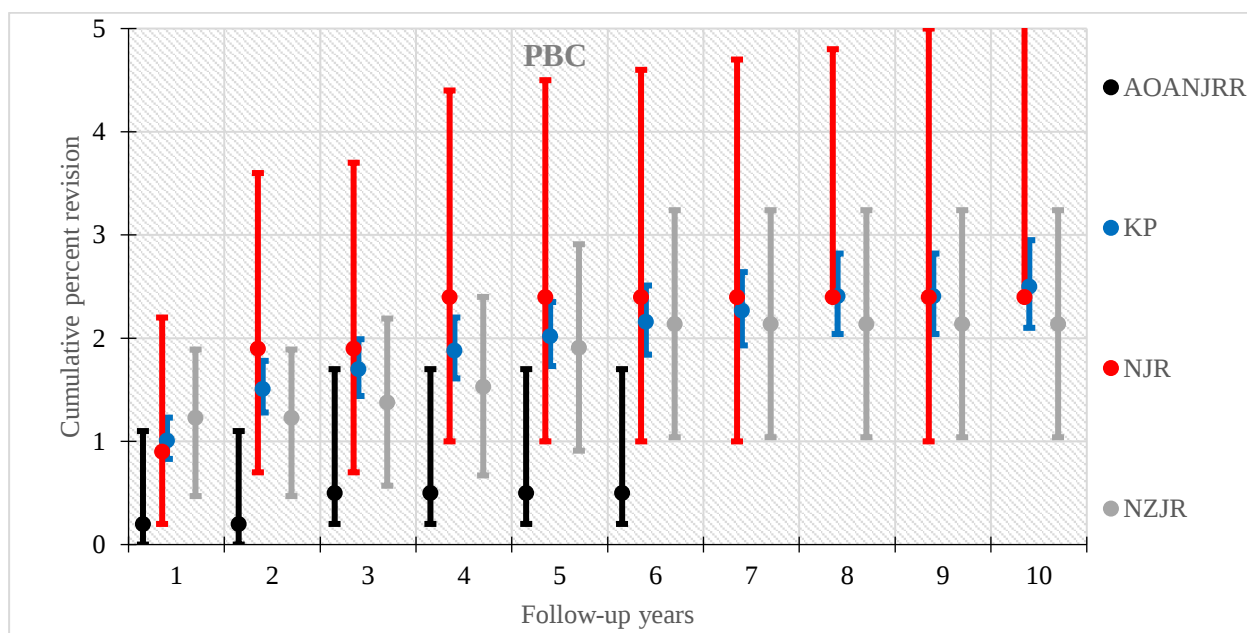
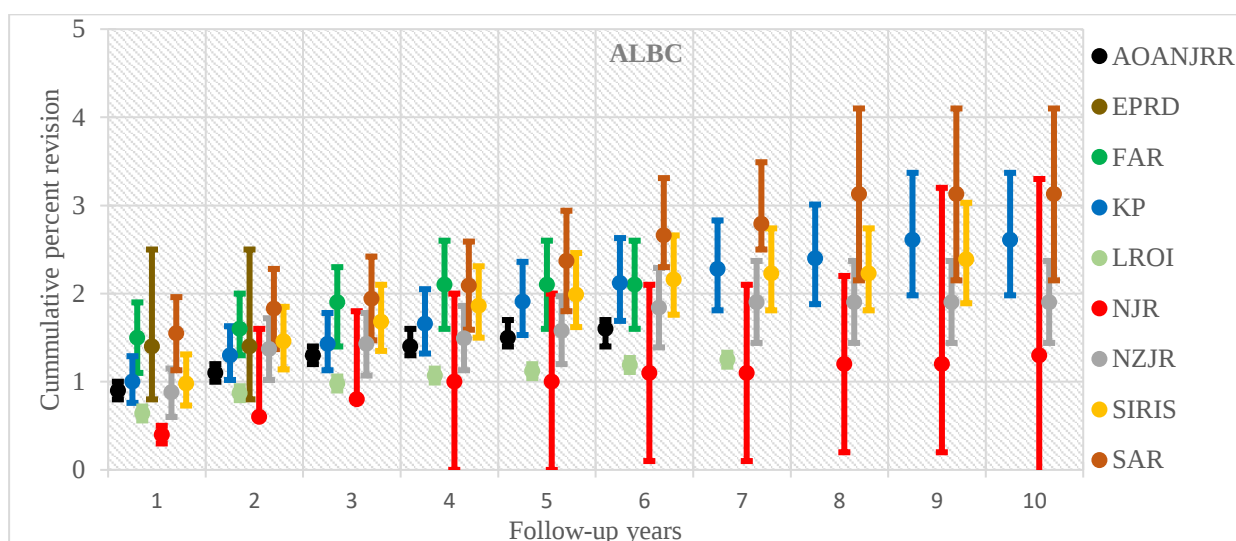
Supplement Figure 3: Cumulative percent revision (one minus -Kaplan-Meier) revision for PJI following primary TKAs with ALBC vs. PBC among patients with diabetes (2010-2020).^a



^a Only EPRD(The German Arthroplasty Registry) and KP (Kaiser Permanente Total Joint Replacement Registry) had collected data on diabetes.

EPRD (The German Arthroplasty Registry) had null revision cases for PJI following TKA with PBC among patients with diabetes.

Supplement Figure 4: Cumulative percent revision (one minus -Kaplan-Meier) revision for PJI following primary TKAs with ALBC vs. PBC among patients with both ASA $\geq$ 3 and BMI $\geq$ 35 (2010-2020).^{a, t}



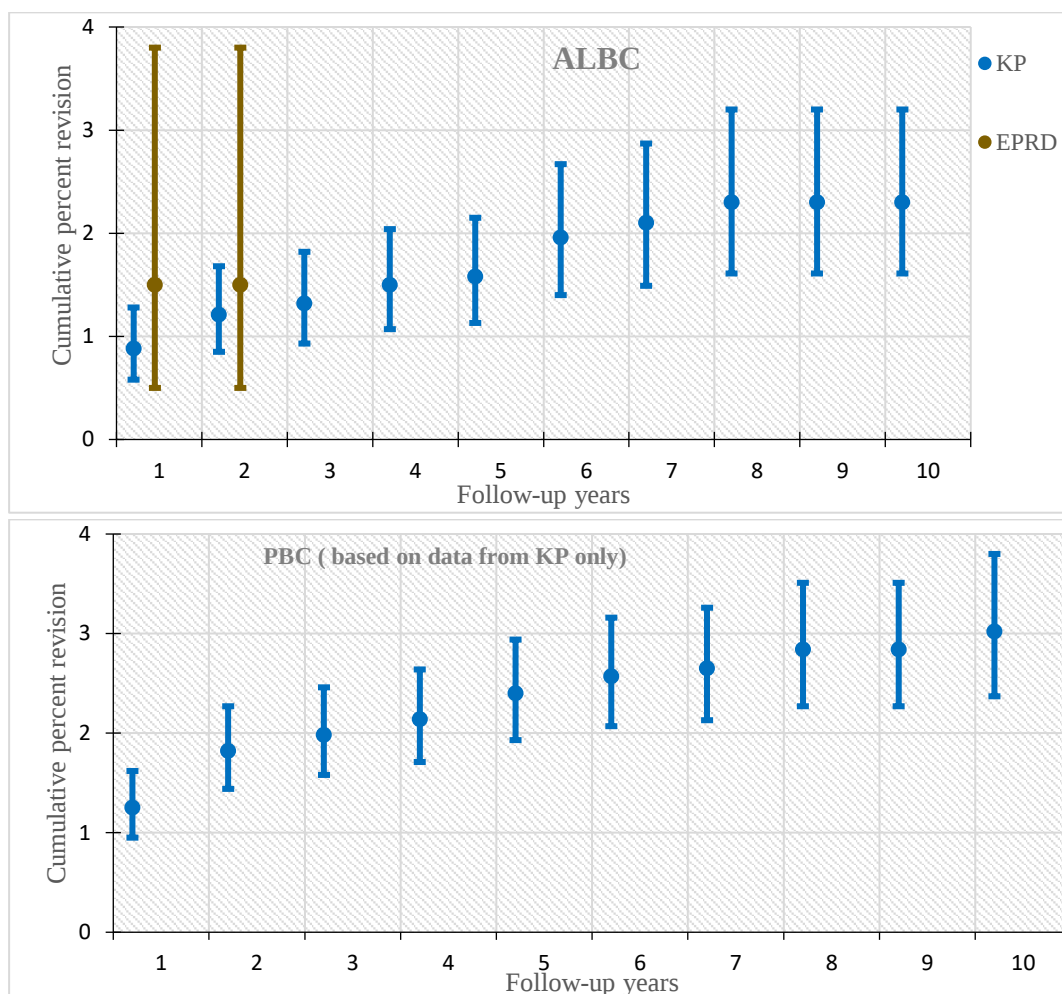
ALBC = Antibiotic loaded bone cement. PBC = plain bone cement

.^a NAR= The Norwegian Arthroplasty Register do not collect data on BMI.

DKR= The Danish Knee Arthroplasty Registry do not collect data on ASA.

EPRD (The German Arthroplasty Registry), LROI (Dutch Arthroplasty Register), and SIRIS (Swiss National Implant Register) had null revision cases for PJI following TKA with PBC.

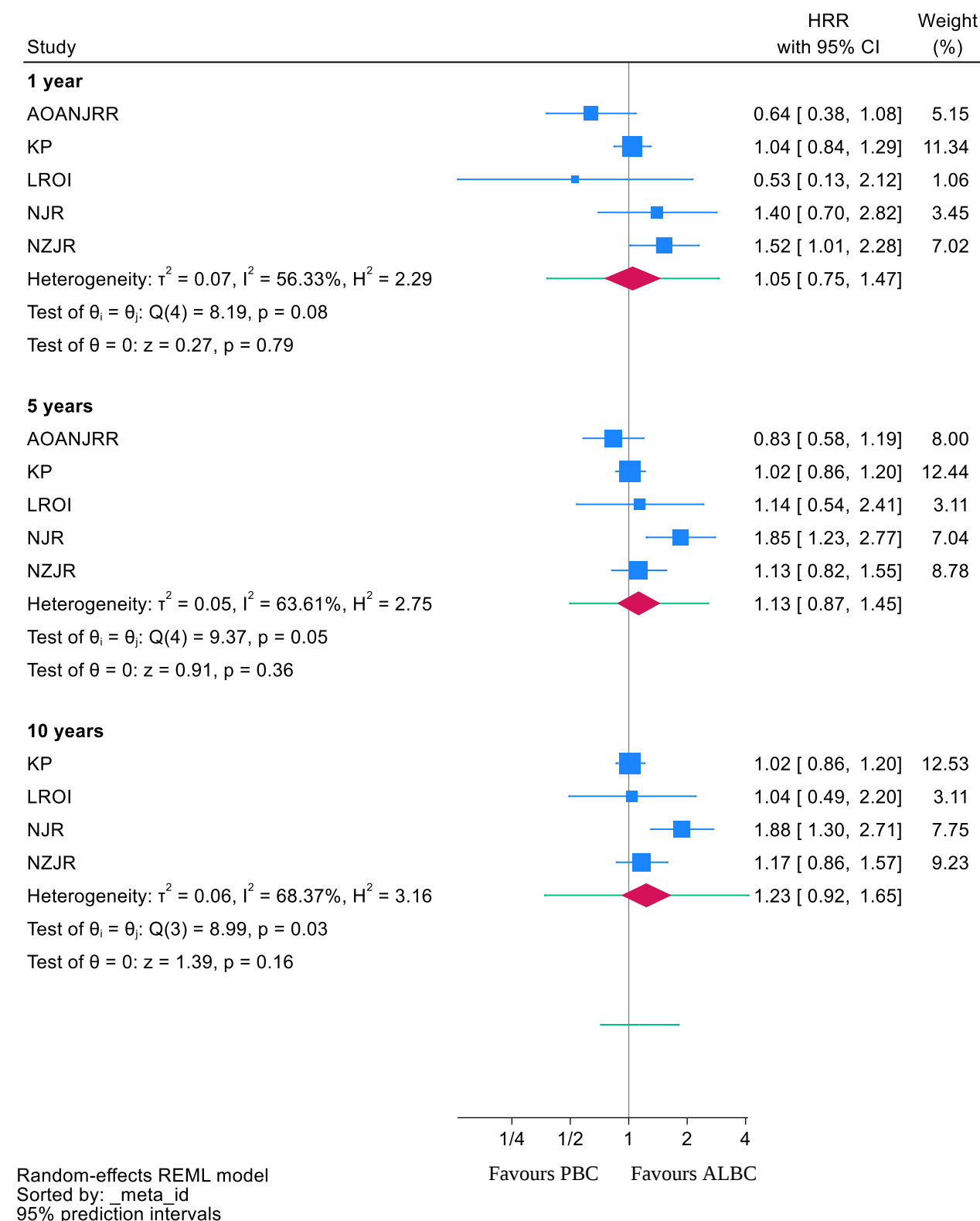
Supplement Figure 5: Cumulative percent revision (one minus -Kaplan-Meier) revision for PJI following primary TKAs with ALBC vs. PBC among patients with ASA $\geq$ 3, BMI $\geq$ 35, and diabetes (2010-2020).^{a,b}



^a Only EPRD(The German Arthroplasty Registry) and KP (Kaiser Permanente Total Joint Replacement Registry) had collected data on diabetes.

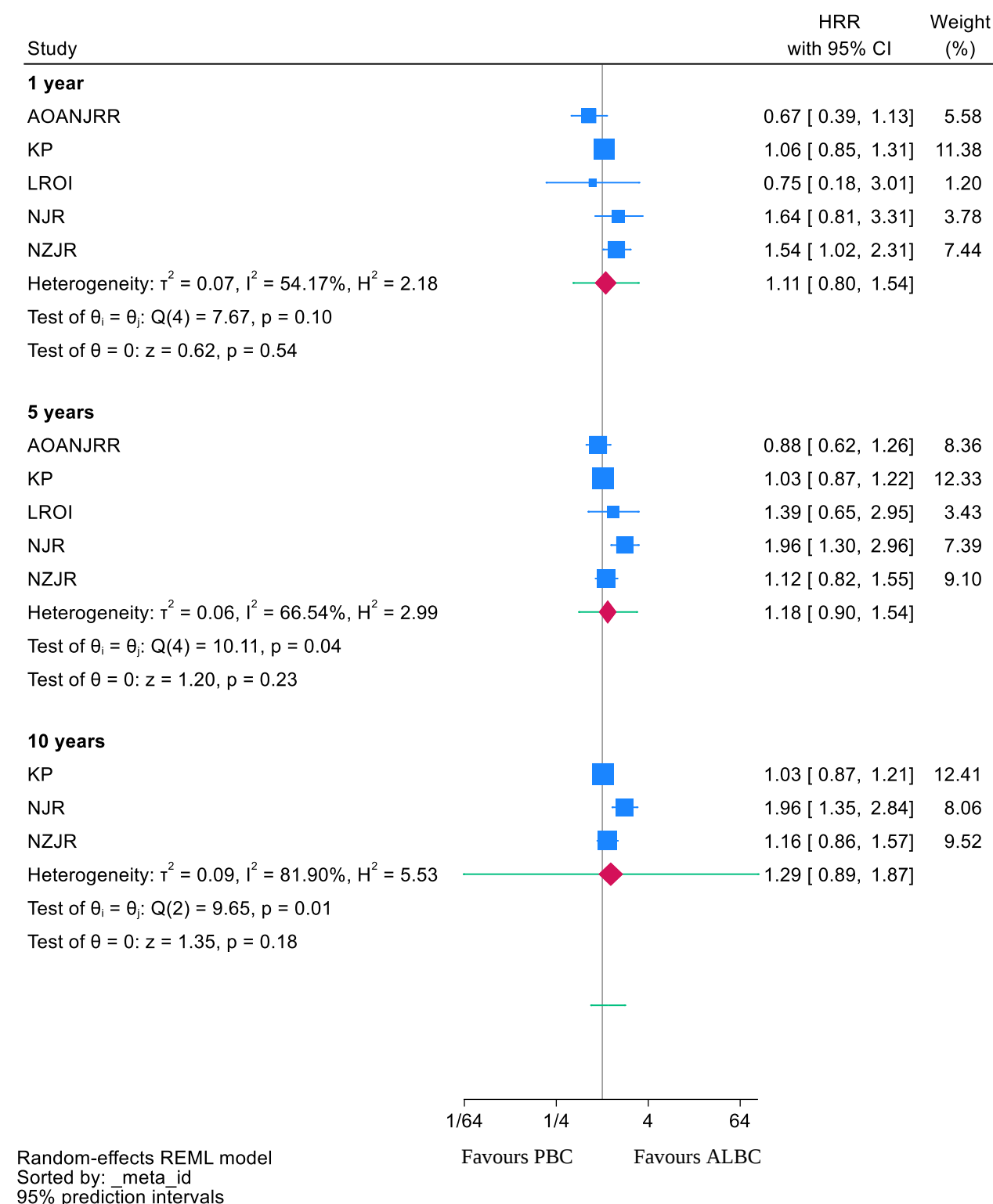
^b EPRD (The German Arthroplasty Registry) had null revision cases for PJI following TKA with PBC, thus the presented 1-KM for PBC was based only on KP data.

Supplement Figure 6a: Forest plots showing unadjusted Cox-regression (Cox-Model 1) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC among patients with ASA ≥ 3 . ALBC was used as a reference. ^a



^a The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see Supplement Table 1).
ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty

Supplement Figure 6b: Forest plots showing adjusted Cox-regression (Cox-Model 2) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC among patients with ASA ≥ 3 . ALBC was used as a reference.^{a,b}

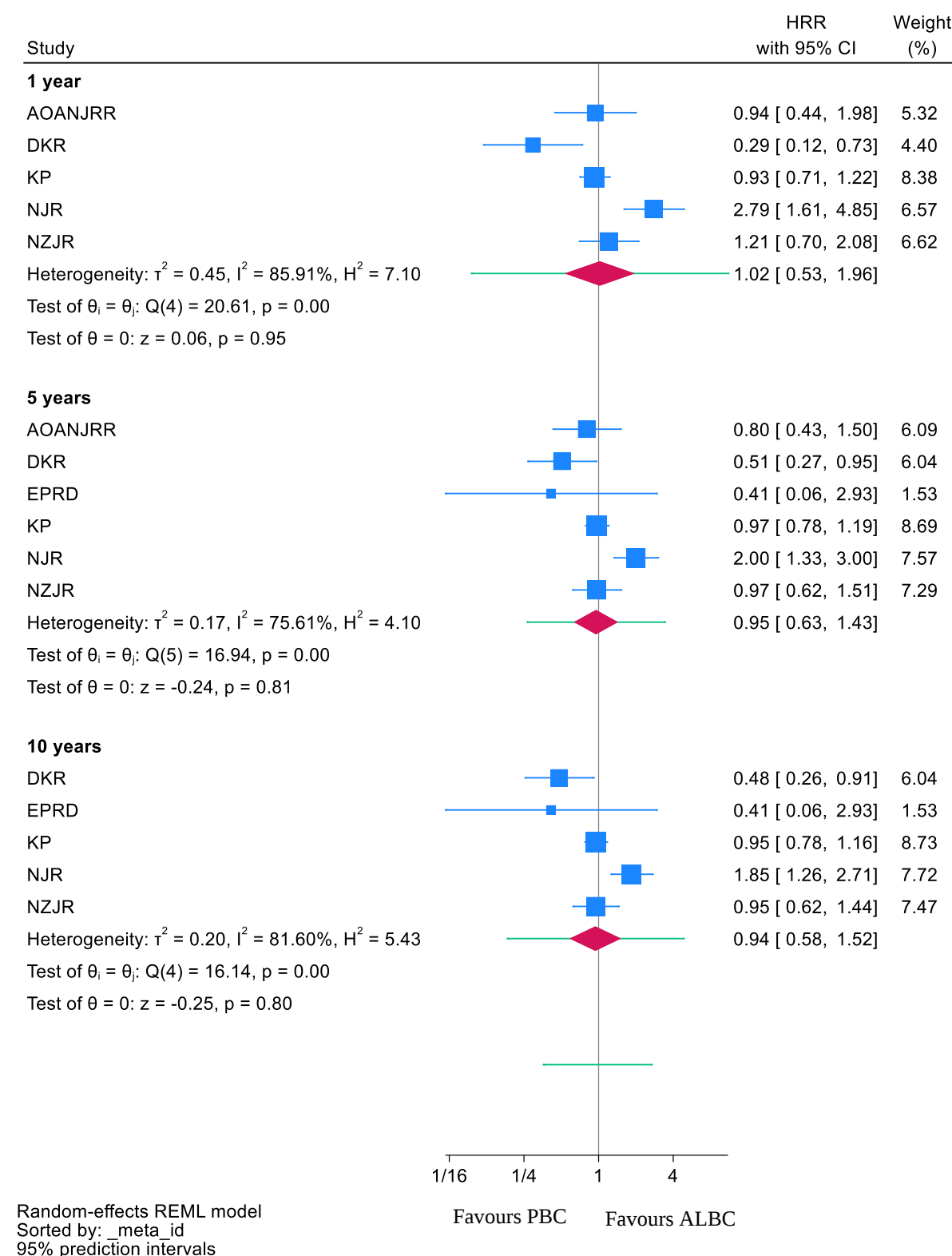


^a The meta-analysis was based on result from Cox-regression analysis adjusted for age, sex, and year of surgery [time period]).

^b The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see Supplement Table 1).

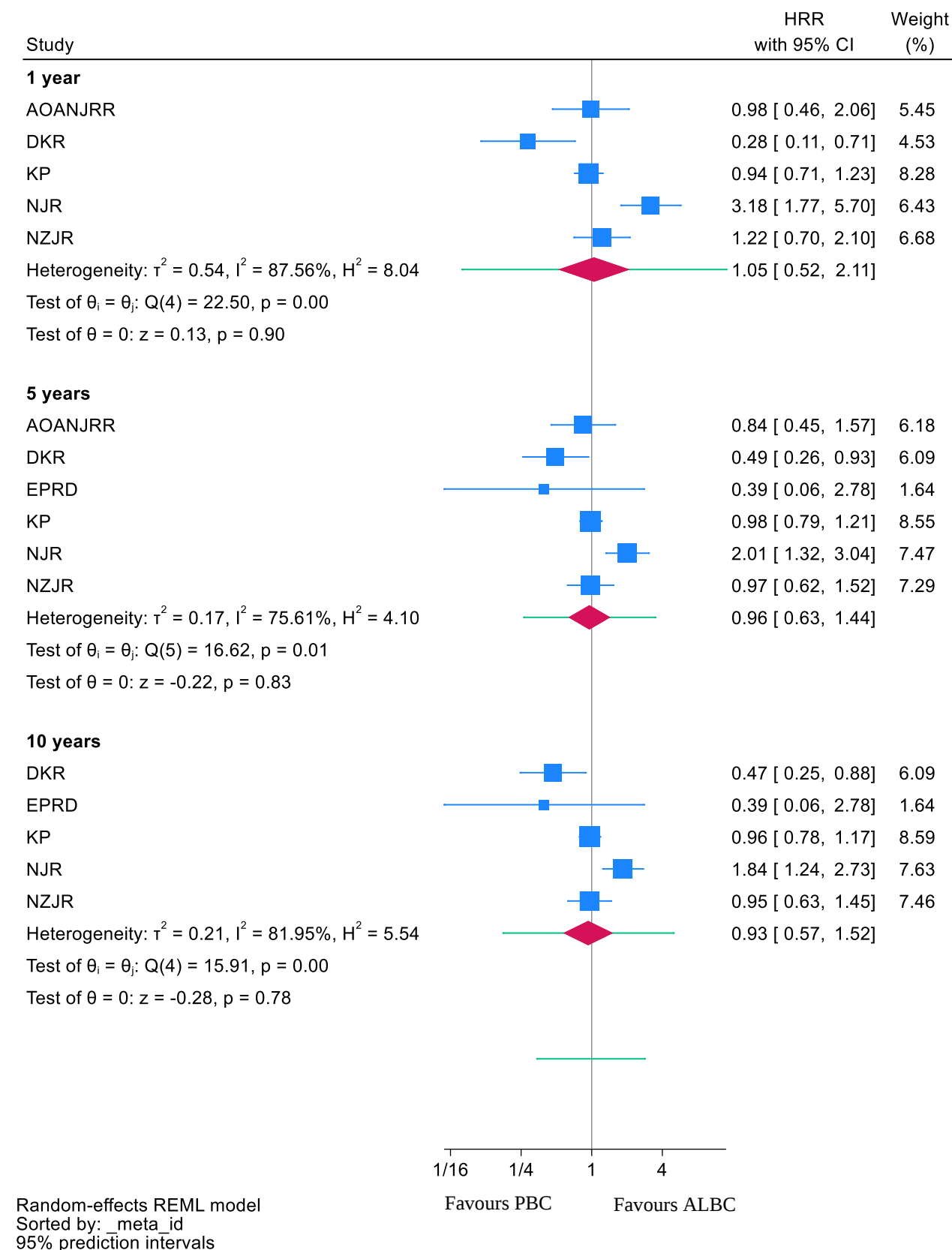
ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty.

Supplement Figure 7a: Forest plots showing unadjusted Cox-regression (Cox-Model 1) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC stratified for BMI ≥ 35 . ALBC was used as a reference.^a



^a The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see Supplement Table 1). ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty.

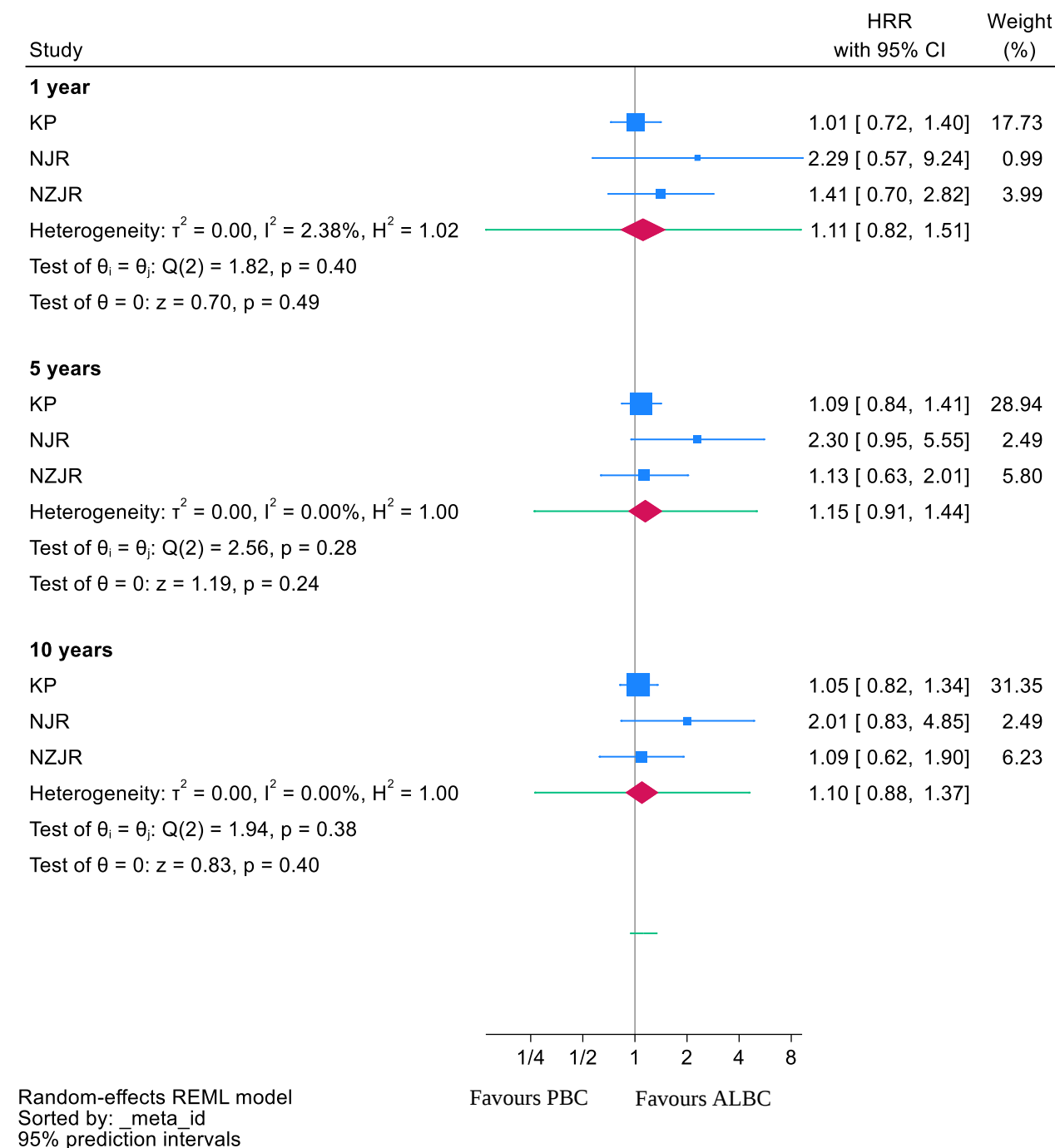
Supplement Figure 7b: Forest plots showing adjusted Cox-regression (Cox-Model 2) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC among patients with BMI ≥ 35 . ALBC was used as a reference.^{a,b}



^a The meta-analysis was based on result from Cox-regression analysis adjusted for age, sex, year of surgery [time period]), and all other variables available in each participating registry.

^b The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see [Supplement Table 1](#)).
ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty

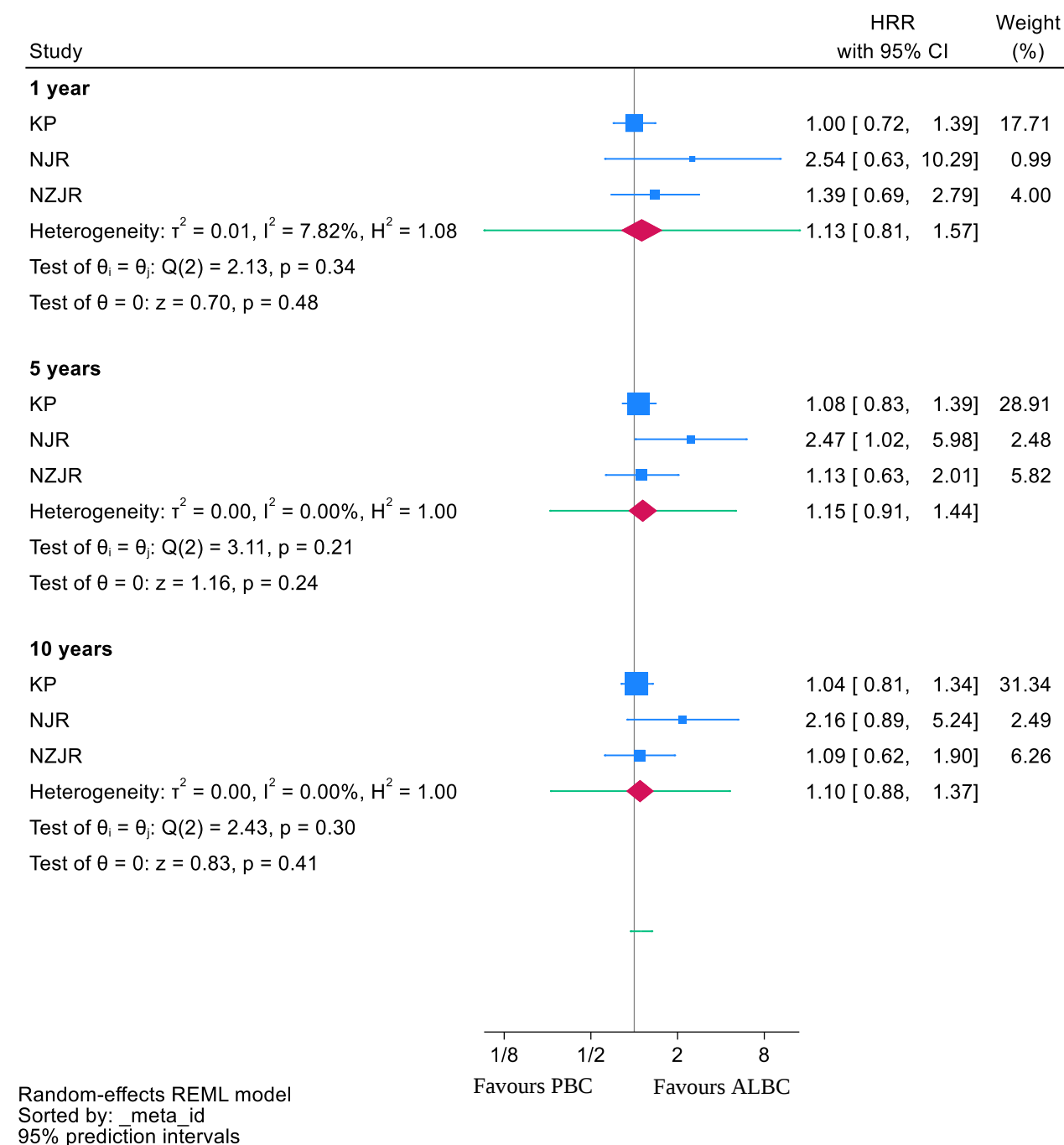
Supplement Figure 8a: Forest plots showing unadjusted Cox-regression (Cox-Model 1) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC among patients with ASA ≥ 3 and BMI ≥ 35 . ALBC was used as a reference.^{a,b}



^a The data was from the KP, NJR, and NZJR only

^b The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see [Supplement Table 1](#)).

Supplement Figure 8b: Forest plots showing adjusted Cox-regression (Cox-Model 2) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC among patients with ASA ≥ 3 and BMI ≥ 35 . ALBC was used as a reference. ^{a,b,c}



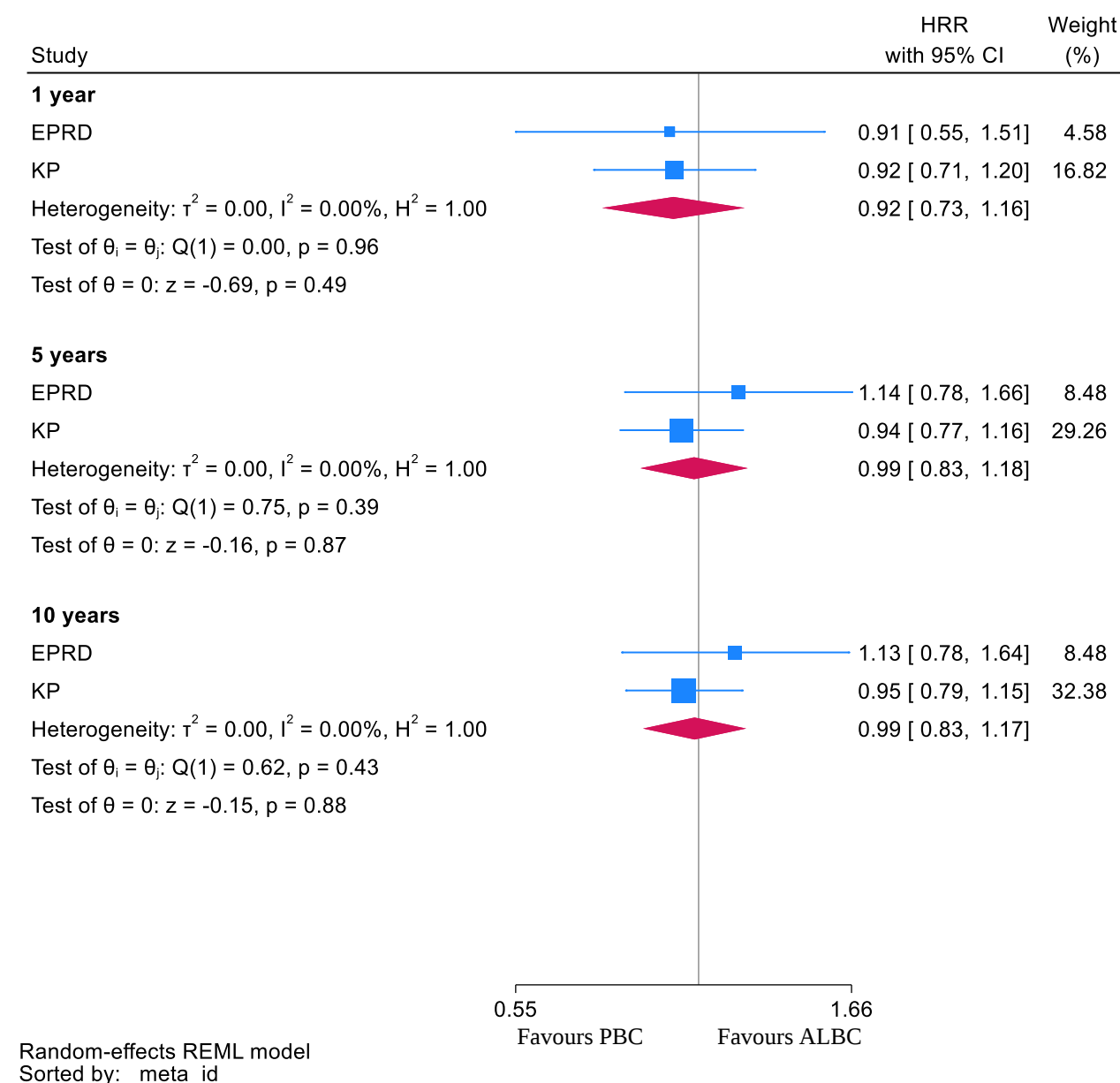
^a The data was from the KP, NJR, and NZJR only

^b The meta-analysis was based on result from Cox-regression analysis (adjusted for age, sex, and year of surgery [time period]).

^c The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see Supplement Table 1).

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty

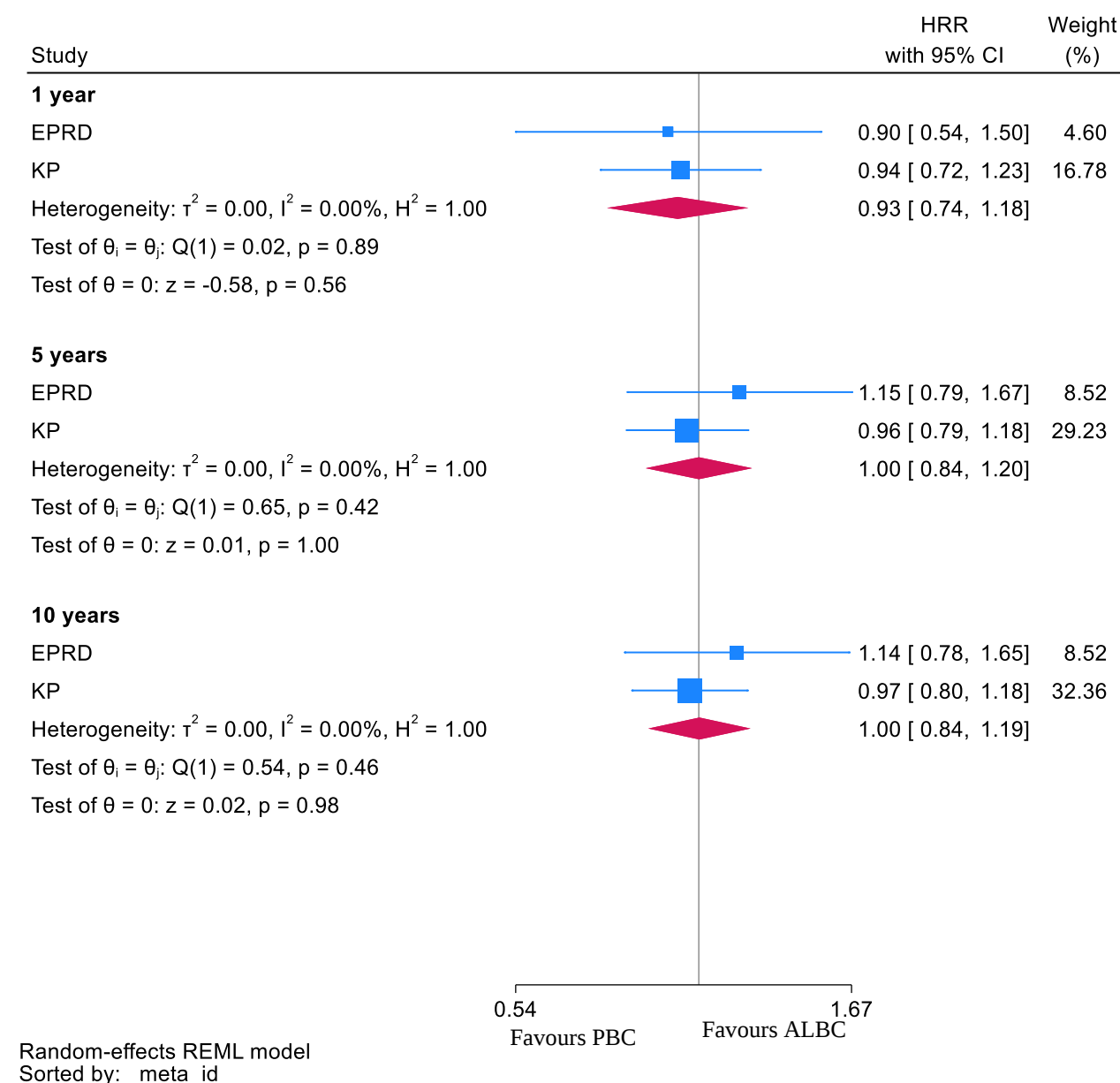
Supplement Figure 9a: Forest plots showing unadjusted Cox-regression (Cox-Model 1) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC among patients with diabetes. ALBC was used as a reference.^{a,b}



^a The data was from the EPRD and KP only

^b The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see Supplement Table 1).
ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty

Supplement Figure 9b: Forest plots showing adjusted Cox-regression (Cox-Model 2) meta-analysis on risk of revision for PJI following primary TKAs with ALBC vs. PBC stratified for diabetes. ALBC was used as a reference.^{a,b,c}



^a The data was from the EPRD and KP only

^b The meta-analysis was based on result from Cox-regression analysis adjusted for age, sex, and year of surgery [time period]).

^c The size of the square in the forest plot corresponds to each registry weighted based on the number of TKA with plain bone cement in the registry (see [Supplement Table 1](#)).

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty

Supplement Tables

Supplement Table 1: Number (%) of primary TKA with the ALBC and PBC among patients with ASA ≥ 3 , BMI ≥ 35 , and/or diabetes and 1st revisions due to PJI during the study period 2010-2020 reported per registry.

Register (country)	ALBC		PBC		Total	
	Primary	Revision	Primary	Revision	Primary	Revision
	n	n (% of primary)	n	n (% of primary)	n	n (% of primary)
AOANJRR (Australia)	143,140	1568(1.1)	3,575	42(1.2)	146,715	1,610(1.1)
ASA ≥ 3	118,822	1407(1.2)	3,097	35(1.1)	121,919	1,442(1.2)
BMI ≥ 35	63,122	679(1.1)	1,108	10(1.0)	64,230	689(1.1)
ASA ≥ 3 and BMI ≥ 35	38,804	518(1.3)	630	3(0.5)	39,434	521(1.3)
DKR (Denmark)	5,109	77(1.3)	1,425	11(0.8)	6,534	88(1.3)
BMI ≥ 35	5,109	77(1.5)	1,425	11(0.8)	6,534	88(1.3)
EPRD (Germany) ^c	40,800	479(1.2)	589	11(1.9)	41,389	490(1.2)
ASA ≥ 3	4,542	34(0.7)	31	0	4,573	34(0.7)
BMI ≥ 35	20,101	232(1.2)	197	1(0.5)	20,298	233(1.1)
Diabetes	24,926	320(1.3)	445	10(2.2)	25,371	330(1.3)
ASA ≥ 3 and BMI ≥ 35	1,286	11(0.9)	14	0	1,300	11(0.8)
ASA ≥ 3 , BMI ≥ 35 , and diabetes	440	4(0.9)	3	0	443	4(0.9)
FAR (Finland)	23,864	294(1.2)	9	0	23,873	294(1.2)
ASA ≥ 3	20,230	256(1.3)	9	0	20,239	256(1.3)
BMI ≥ 35	7,974	116(1.5)	0	0	7,974	116(1.5)
ASA ≥ 3 and BMI ≥ 35	4,340	78(1.8)	0	0	4,340	78(1.8)
KP (USA)	26,016	320(1.2)	45,638	558(1.2)	71,654	878(1.2)
ASA ≥ 3	15,863	215(1.4)	28,163	412(1.5)	44,026	627(1.4)
BMI ≥ 35	11,226	152(1.4)	18,764	253(1.3)	29,990	405(1.4)
Diabetes	13,415	170(1.3)	21,393	273(1.3)	34,808	443(1.3)
ASA ≥ 3 and BMI ≥ 35	5,781	96(1.7)	9,654	178(1.8)	15,435	274(1.8)
ASA ≥ 3 , BMI ≥ 35 , and diabetes	2,907	45(1.5)	4,258	95(2.2)	7,165	140(2.0)
LROI (the Netherlands)	47,547	485(1.0)	761	7(0.9)	48,308	492(1.0)
ASA ≥ 3	34,756	382(1.1)	541	7(1.3)	35,297	389(1.1)
BMI ≥ 35	20,882	208(1.0)	296	0	21,178	208(1.0)
ASA ≥ 3 and BMI ≥ 35	8,091	105(1.3)	76	0	8,167	105(1.3)
NAR (Norway)	8,610	147(1.7)	0	0	8,610	147(1.7)
ASA ≥ 3	8,610	147(1.7)	0	0	8,610	147(1.7)
NJR (England/Wales)	253,041	1,903(0.8)	1,435	34(2.4)	254,476	1,937(0.8)
ASA ≥ 3	146,514	1,171(0.8)	857	19(2.2)	147,371	1,190(0.8)
BMI ≥ 35	147,618	1,164(0.8)	798	18(2.3)	148,416	1,182(0.8)
ASA ≥ 3 and BMI ≥ 35	41,091	432(1.1)	220	3(1.4)	41,311	435(1.1)
NZJR (New Zealand)	21,630	267(1.2)	4,644	65(1.4)	26,274	492(1.8)
ASA ≥ 3	15,115	204(1.3)	3,308	54(1.6)	18,423	418(2.2)
BMI ≥ 35	10,869	134(1.2)	2,149	26(1.2)	13,018	160(1.2)
ASA ≥ 3 and BMI ≥ 35	4,354	71(1.6)	813	15(1.8)	5,167	86(1.7)
SAR (Sweden)	32,796	534(1.6)	8	0	32,804	534(1.6)
ASA ≥ 3	24,115	416(1.7)	8	0	24,123	416(1.7)
BMI ≥ 35	14,102	235(1.7)	2	0	14,104	235(1.7)
ASA ≥ 3 and BMI ≥ 35	5,421	117 (2.2)	2	0	5,423	117(2.2)
SIRIS (Switzerland) ^b	24,790	301(1.2)	391	0	25,181	301(1.2)
ASA ≥ 3	19,842	261(1.3)	245	0	20,087	261(1.3)
BMI ≥ 35	9,558	133(1.4)	213	0	9,771	133(1.4)
ASA ≥ 3 and BMI ≥ 35	4,610	93(2.0)	67	0	4,677	93 (2.0)
Grand Total^a	627,343	6,375(1.0)	58,475	728(1.2)	685,818	7,103(1.0)
ASA $\geq 3^a$	408,409	4,493(1.1)	36,259	527(1.5)	444,668	5,020(1.1)
BMI $\geq 35^b$	310,561	3,130(1.0)	24,952	319(1.3)	335,513	3,449(1.0)
Diabetes ^c	38,341	490(1.3)	,	283(1.3)	60,179	773(1.3)
ASA ≥ 3 and BMI ≥ 35	113,778	1,521(1.3)	11,476	199(1.7)	125,254	1,720(1.4)
ASA ≥ 3 , BMI ≥ 35 , and diabetes ^c	3,347	49(1.5)	4,261	95(2.2)	7,608	144(1.9)

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; TKA = total knee arthroplasty; ASA=American Society of Anesthesiologist's. BMI=body mass index; PJI = periprosthetic joint infection

AOANJRR = The Australian Orthopaedic Association National Joint Replacement Registry; DKR = The Danish Knee Arthroplasty Registry; EPRD = The German Arthroplasty Registry; FAR = The Finnish Arthroplasty Register; KP = Kaiser Permanente Total Joint Replacement Registry; LROI = Dutch Arthroplasty Register; NAR = The Norwegian Arthroplasty Register; NJR= The National Joint Registry; NZJR = The New Zealand Joint Registry; SAR = The Swedish Arthroplasty Register; SIRIS = Swiss National Implant Register

*Number of TKAs included in the Cumulative percent revision (1-KM).

^a 10 of the 11 participating registries recorded information on ASA; DKR do not collect this information. AOANJRR and SIRIS started recording information on ASA class in 2015 and LROI in 2014.

^b 10 of the 11 participating registries recorded information on BMI; NAR do not collect information on BMI and NAR use 100% ALBC in primary TKAs. LROI started recording information on BMI in 2014, whereas AOANJRR and SIRIS started recording information on BMI in 2015.

^c Only EPRD and KP record information on diabetes, thus number TKA among patients with ASA $\geq$, BMI $\geq$ and diabetes was based on EPRD and KP data only.

Supplement Table 2: The Cox regression results from individual registries of revision for PJI following primary TKAs for ALBC vs. PBC stratified for ASA ≥ 3 (2010-2020). ALBC was used as a reference.

Register (country)	HRR (95% CI) ^a		
	1-year	5-years	10-years
AOANJRR			
Number of revisions	855	1,385	
Cox-Model 1 ^c	0.64 (0.38-1.08)	0.83 (0.58-1.19)	
Cox-Model 2 ^d	0.67 (0.39-1.13)	0.88 (0.62-1.26)	
Cox-Model 3 ^e	0.51 (0.23-1.14)	0.82 (0.50-1.35)	
KP			
Number of revisions	370	596	627
Cox-Model 1 ^c	1.04 (0.84-1.29)	1.02 (0.86-1.20)	1.02 (0.86-1.20)
Cox-Model 2 ^d	1.06 (0.85-1.31)	1.03 (0.87-1.22)	1.03 (0.87-1.21)
Cox-Model 3 ^e	1.08 (0.87-1.34)	1.01 (0.85-1.20)	1.01 (0.85-1.20)
LROI			
Number of revisions	243	373	
Cox-Model 1 ^c	0.53 (0.13-2.12)	1.14 (0.54-2.41)	
Cox-Model 2 ^d	0.75 (0.18-3.01)	1.39 (0.65-2.95)	
Cox-Model 3 ^e	0.79 (0.20-3.19)	1.46 (0.69-3.11)	
NJR			
Number of revisions	475	1,065	1,183
Cox-Model 1 ^c	1.40 (0.70-2.82)	1.85 (1.23-2.77)	1.88 (1.30-2.71)
Cox-Model 2 ^d	1.64 (0.81-3.31)	1.96 (1.30-2.96)	1.96 (1.35-2.85)
Cox-Model 3 ^e	1.93 (0.89-4.18)	2.09 (1.30-3.36)	1.93 (1.23-3.04)
NZJR			
Number of revisions	124	233	258
Cox-Model 1 ^c	1.52 (1.01-2.28)	1.13 (0.82-1.55)	1.17 (0.86-1.57)
Cox-Model 2 ^d	1.54 (1.02-2.31)	1.12 (0.82-1.55)	1.16 (0.86-1.57)
Cox-Model 3 ^e	1.25 (0.76-2.08)	1.10 (0.74-1.63)	1.14 (0.78-1.66)

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty
CI=confidence interval. HRR=hazard rate ratio.

^a ALCB was the reference group. Bold HR (95% CI) indicates significance with P-value <0.05.

^c Cox-model 1 refers to unadjusted model.

^d Cox-model 2 refers to model adjusted for age (<55, 55-64, **65-74**, >74), sex (**male**, female), and time period (**2010-2014**, 2015-2020).

^e Cox-model 3 refers to fully adjusted model for age (<55, 55-64, **65-74**, >74), sex (**male**, female), time period (**2010-2014**, 2015-2020), ASA (**1**, 2, 3, ≥ 4), BMI (<18.5, **18.5-24.9**, 25.0-29.9, 30.0-34.9, 35.0-39.9, ≥ 40), patella resurfacing (**yes/no**), fixation (**fully cemented**, hybrid [cemented tibia], inverse hybrid [cemented femur]), systemic antibiotic prophylactic administered (**yes**, no, unknown), bearing mobility (**fixed**, mobile), and stability (**minimally stabilized**, posterior stabilized). Bold text indicates reference for covariates in the models.

AOANJRR = The Australian Orthopaedic Association National Joint Replacement Registry; DKR = The Danish Knee Arthroplasty Registry; EPRD = The German Arthroplasty Registry; KP = Kaiser Permanente Total Joint Replacement Registry; LROI = Dutch Arthroplasty Register; NJR = The National Joint Registry; NZJR = The New Zealand Joint Registry; SIRIS = Swiss National Implant Register

*EPRD had null revision case due to PJI following primary TKA with the plain bone cement.

**SIRIS had null revision case due to PJI following primary TKA with the plain bone cement.

Supplement Table 3: The Cox regression results from individual registries of revision for PJI following primary TKAs ALBC vs. PBC stratified for BMI ≥ 35 (2010-2020). ALBC was used as a reference.

Register (country)	HRR (95% CI)		
	1-year	5-years	10-years
AOANJRR			
Number of revisions	433	681	
Cox-Model 1 ^c	0.94 (0.44-1.98)	0.80 (0.43-1.50)	
Cox-Model 2 ^d	0.98 (0.46-2.06)	0.84 (0.45-1.57)	
Cox-Model 3 ^e	1.00 (0.47-2.11)	0.87 (0.47-1.64)	
DKR			
Number of revisions	65	86	88
Cox-Model 1 ^a	0.29 (0.12-0.73)	0.51 (0.27-0.95)	0.48 (0.26-0.91)
Cox-Model 2 ^b	0.28 (0.11-0.71)	0.49 (0.26-0.93)	0.47 (0.25-0.88)
Cox-Model 3 ^c	0.31 (0.12-0.77)	0.53 (0.28-1.00)	0.50 (0.26-0.95)
EPRD			
Number of revisions	0	233	233
Cox-Model 1 ^c	00	0.41 (0.06-2.95)	0.41 (0.06-2.95)
Cox-Model 2 ^d	00	0.39 (0.05-2.79)	0.39 (0.05-2.79)
Cox-Model 3 ^e	00	0.39 (0.05-2.78)	0.39 (0.05-2.78)
KP			
Number of revisions	218	372	405
Cox-Model 1 ^c	0.93 (0.71-1.22)	0.97 (0.78-1.19)	0.95 (0.78-1.16)
Cox-Model 2 ^d	0.94 (0.71-1.23)	0.98 (0.79-1.21)	0.96 (0.78-1.17)
Cox-Model 3 ^e	0.93 (0.70-1.23)	0.95 (0.77-1.18)	0.94 (0.77-1.16)
NJR			
Number of revisions	417	1,047	1,174
Cox-Model 1 ^c	2.79 (1.61-4.85)	2.00 (1.33-3.00)	1.85 (1.26-2.71)
Cox-Model 2 ^d	3.18 (1.77-5.70)	2.01 (1.32-3.04)	1.84 (1.24-2.73)
Cox-Model 3 ^e	3.28 (1.81-5.94)	1.92 (1.26-2.93)	1.76 (1.18-2.62)
NZJR			
Number of revisions	83	141	160
Cox-Model 1 ^c	1.21 (0.70-2.08)	0.97 (0.62-1.51)	0.95 (0.62-1.44)
Cox-Model 2 ^d	1.22 (0.70-2.10)	0.97 (0.62-1.52)	0.95 (0.63-1.45)
Cox-Model 3 ^e	1.19 (0.69-2.06)	0.95 (0.61-1.49)	0.94 (0.62-1.44)

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty
CI=confidence interval. HRR=hazard rate ratio.

^a Cox-model 1 refers to unadjusted model.

^b Cox-model 2 refers to model adjusted for age (<55, 55-64, **65-74**, >74), sex (**male**, female), and time period (**2010-2014**, 2015-2020).

^c Cox-model 3 refers to fully adjusted model for age (<55, 55-64, **65-74**, >74), sex (**male**, female), time period (**2010-2014**, 2015-2020), ASA (**1**, 2, 3, ≥ 4), patella resurfacing (**yes/no**), fixation (**fully cemented**, hybrid [cemented tibia], inverse hybrid [cemented femur]), systemic antibiotic prophylactic administered (**yes**, no, unknown), bearing mobility (**fixed**, mobile), and stability (**minimally stabilized**, posterior stabilized). Bold text indicates reference for covariates in the models.

^d LROI started collecting data on BMI since 2014. Both Model 2 and Model 3 were not adjusted for period for the LROI data. Besides, there are no PJI revisions in the plain bone cement group. Therefore, these results are all null.

AOANJRR = The Australian Orthopaedic Association National Joint Replacement Registry; DKR = The Danish Knee Arthroplasty Registry; EPRD = The German Arthroplasty Registry; KP = Kaiser Permanente Total Joint Replacement Registry; LROI = Dutch Arthroplasty Register; NJR = The National Joint Registry; NZJR = The New Zealand Joint Registry; SIRIS = Swiss National Implant Register

*EPRD (Germany) had null revision case due to PJI within 1-year follow-up period

**SIRIS (Switzerland) had null revision case due to PJI following primary TKA with the plain bone cement.

Supplement Table 4: The Cox regression results from individual registries of revision for PJI following primary TKAs with ALBC vs. PBC stratified for ASA ≥ 3 and BMI ≥ 35 (2010-2020). ALBC was used as a reference.

Register (country)	HRR (95% CI)		
	1-year	5-years	10-years
KP			
Number of revisions	151	254	274
Cox-Model 1 ^a	1.01 (0.72-1.40)	1.09 (0.84-1.41)	1.05 (0.82-1.34)
Cox-Model 2 ^b	1.00 (0.72-1.39)	1.08 (0.83-1.39)	1.04 (0.81-1.34)
Cox-Model 3 ^c	1.02 (0.72-1.42)	1.04 (0.80-1.36)	1.03 (0.80-1.32)
NJR			
Number of revisions	165	403	435
Cox-Model 1 ^a	2.29 (0.57-9.24)	2.30 (0.95-5.55)	2.01 (0.83-4.85)
Cox-Model 2 ^b	2.54 (0.63-10.29)	2.47 (1.02-5.98)	2.16 (0.89-5.24)
Cox-Model 3 ^c	2.74 (0.61-12.35)	2.91 (1.13-7.52)	2.47 (0.95-6.38)
NZJR			
Number of revisions	48	79	86
Cox-Model 1 ^a	1.41 (0.70-2.82)	1.13 (0.63-2.01)	1.09 (0.62-1.90)
Cox-Model 2 ^b	1.39 (0.69-2.79)	1.13 (0.63-2.01)	1.09 (0.62-1.90)
Cox-Model 3 ^c	1.38 (0.68-2.77)	1.12 (0.62-1.99)	1.09 (0.62-1.91)

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty

CI=confidence interval. HRR=hazard rate ratio.

^a Cox-model 1 refers to unadjusted model.

^b Cox-model 2 refers to model adjusted for age (<55, 55-64, **65-74**, >74), sex (**male**, female), and time period (**2010-2014**, 2015-2020).

^c Cox-model 3 refers to fully adjusted model for age (<55, 55-64, **65-74**, >74), sex (**male**, female), time period (**2010-2014**, 2015-2020), ASA (1, 2, 3, ≥ 4), BMI (<18.5, **18.5-24.9**, 25.0-29.9, 30.0-34.9, 35.0-39.9, ≥ 40), patella resurfacing (**yes/no**), fixation (**fully cemented**, hybrid [cemented tibia], inverse hybrid [cemented femur]), systemic antibiotic prophylactic administered (**yes**, no, unknown), bearing mobility (**fixed**, mobile), and stability (**minimally stabilized**, posterior stabilized). Bold text indicates reference for covariates in the models.

KP = Kaiser Permanente Total Joint Replacement Registry

NZJR = The New Zealand Joint Registry

Supplement Table 5: The Cox regression results from individual registries of revision for PJI following primary TKAs with ALBC vs. PBC stratified for diabetes (2010-2020). ALBC was used as a reference.

Register (country)	HRR (95% CI)		
	1-year	5-years	10-years
EPRD			
Number of revisions	991	1,395	1,407
Cox-Model 1 ^a	0.91 (0.55-1.51)	1.14 (0.78-1.66)	1.13 (0.78-1.64)
Cox-Model 2 ^b	0.90 (0.54-1.50)	1.15 (0.79-1.67)	1.14 (0.78-1.65)
Cox-Model 3 ^c	0.87 (0.52-1.46)	1.08 (0.74-1.58)	1.07 (0.73-1.57)
KP			
Number of revisions	226	398	443
Cox-Model 1 ^a	0.92 (0.71-1.20)	0.94 (0.77-1.16)	0.95 (0.79-1.15)
Cox-Model 2 ^b	0.94 (0.72-1.23)	0.96 (0.79-1.18)	0.97 (0.80-1.18)
Cox-Model 3 ^c	0.97 (0.74-1.27)	0.98 (0.80-1.21)	1.00 (0.82-1.22)

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty

CI=confidence interval. HRR=hazard rate ratio.

^a Cox-model 1 refers to unadjusted model.

^b Cox-model 2 refers to model adjusted for age (<55, 55-64, **65-74**, >74), sex (**male**, female), and time period (**2010-2014**, 2015-2020).

^c Cox-model 3 refers to fully adjusted model for age (<55, 55-64, **65-74**, >74), sex (**male**, female), time period (**2010-2014**, 2015-2020), ASA (1, 2, 3, ≥ 4), BMI (<18.5, **18.5-24.9**, 25.0-29.9, 30.0-34.9, 35.0-39.9, ≥ 40), patella resurfacing (**yes/no**), fixation (**fully cemented**, hybrid [cemented tibia], inverse hybrid [cemented femur]), systemic antibiotic prophylactic administered (**yes**, no, unknown), bearing mobility (**fixed**, mobile), and stability (**minimally stabilized**, posterior stabilized). Bold text indicates reference for covariates in the models.

EPRD = The German Arthroplasty Registry

KP = Kaiser Permanente Total Joint Replacement Registry

Supplement Table 6: The Cox regression results from individual registries of revision for PJI following primary TKAs with ALBC vs. PBC stratified for ASA ≥ 3 , BMI ≥ 35 , and diabetes (2010-2020) based on data from KP only. ALBC was used as a reference.

Register (country)	HRR (95% CI)		
	1-year	5-years	10-years
KP			
Number of revisions	77	127	140
Cox-Model 1 ^a	1.41 (0.88-2.27)	1.50 (1.03-2.18)	1.38 (0.97-1.96)
Cox-Model 2 ^b	1.41 (0.88-2.28)	1.51 (1.03-2.20)	1.39 (0.98-1.99)
Cox-Model 3 ^c	1.40 (0.86-2.29)	1.48 (1.00-2.17)	1.38 (0.96-1.98)

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty
CI=confidence interval. HRR=hazard rate ratio.

^a Cox-model 1 refers to unadjusted model.

^b Cox-model 2 refers to model adjusted for age (<55, 55-64, **65-74**, >74), sex (**male**, female), and time period (**2010-2014**, 2015-2020).

^c Cox-model 3 refers to fully adjusted model for age (<55, 55-64, **65-74**, >74), sex (**male**, female), time period (**2010-2014**, 2015-2020), ASA (1, 2, 3, ≥ 4), BMI (<18.5, **18.5-24.9**, 25.0-29.9, 30.0-34.9, 35.0-39.9, ≥ 40), patella resurfacing (**yes/no**), fixation (**fully cemented**, hybrid [cemented tibia], inverse hybrid [cemented femur]), systemic antibiotic prophylactic administered (**yes**, no, unknown), bearing mobility (**fixed**, mobile), and stability (**minimally stabilized**, posterior stabilized). Bold text indicates reference for covariates in the models.

KP = Kaiser Permanente Total Joint Replacement Registry

Supplement Table 7. Sensitivity analysis of Cox-regression meta-analyses (Cox-model 3) of revision for PJI following primary TKAs with ALBC vs. PBC stratified for ASA ≥ 3 or BMI ≥ 35 to assess how sensitive the meta-analyses results was vs. individual registry's results. ALBC was used as reference.

	HRR (95% CI)		
	1-year	5-years	10-years
Registries excluded ^a	for ASA ≥ 3		
AOANJRR	1.14 (0.94-1.38)	1.28 (0.91-1.82)	
KP	1.05 (0.59-1.89)	1.27 (0.84-1.92)	1.24 (0.85-1.80)
LROI	1.09 (0.90-1.32)	1.16 (0.81-1.64)	
NJR	1.05 (0.86-1.27)	1.02 (0.88-1.18)	1.02 (0.88-1.18)
NZJR	1.01 (0.61-1.67)	1.22 (0.81-1.84)	1.17 (0.81-1.71)
Registries excluded ^a	for BMI ≥ 35		
AOANJRR	1.07 (0.44-2.61)	0.97 (0.61-1.54)	
DKR	1.36 (0.77-2.40)	1.08 (0.76-1.54)	1.06 (0.77-1.45)
EPRD	1.06 (0.54-2.12)	0.99 (0.68-1.45)	0.96 (0.67-1.39)
KP	1.09 (0.43-2.75)	0.94 (0.57-1.57)	0.91 (0.56-1.49)
NJR	0.86 (0.58-1.28)	0.90 (0.75-1.07)	0.89 (0.75-1.05)
NZJR	1.02 (0.41-2.54)	0.95 (0.58-1.54)	0.92 (0.57-1.47)
Registries excluded ^a	ASA ≥ 3 and BMI ≥ 35		
KP	1.56 (0.82-2.93)	1.67 (0.66-4.22)	1.49 (0.69-3.25)
NJR	1.08 (0.79-1.462)	1.06 (0.83-1.34)	1.04 (0.82-1.31)
NZJR	1.26 (0.56-2.81)	1.57 (0.59-4.19)	1.40 (0.62-3.21)

ALBC = antibiotic loaded bone cement; PBC = plain bone cement; PJI = periprosthetic joint infection; TKA = total knee arthroplasty CI=confidence interval. HRR=hazard rate ratio.

^a One at a time, one registry was excluded from the meta-analysis to see if it changes in the statistical significance.