

Reoperation strategies and outcomes for periprosthetic joint infection following primary total hip arthroplasty reported to the Norwegian Arthroplasty Register 2005-2024



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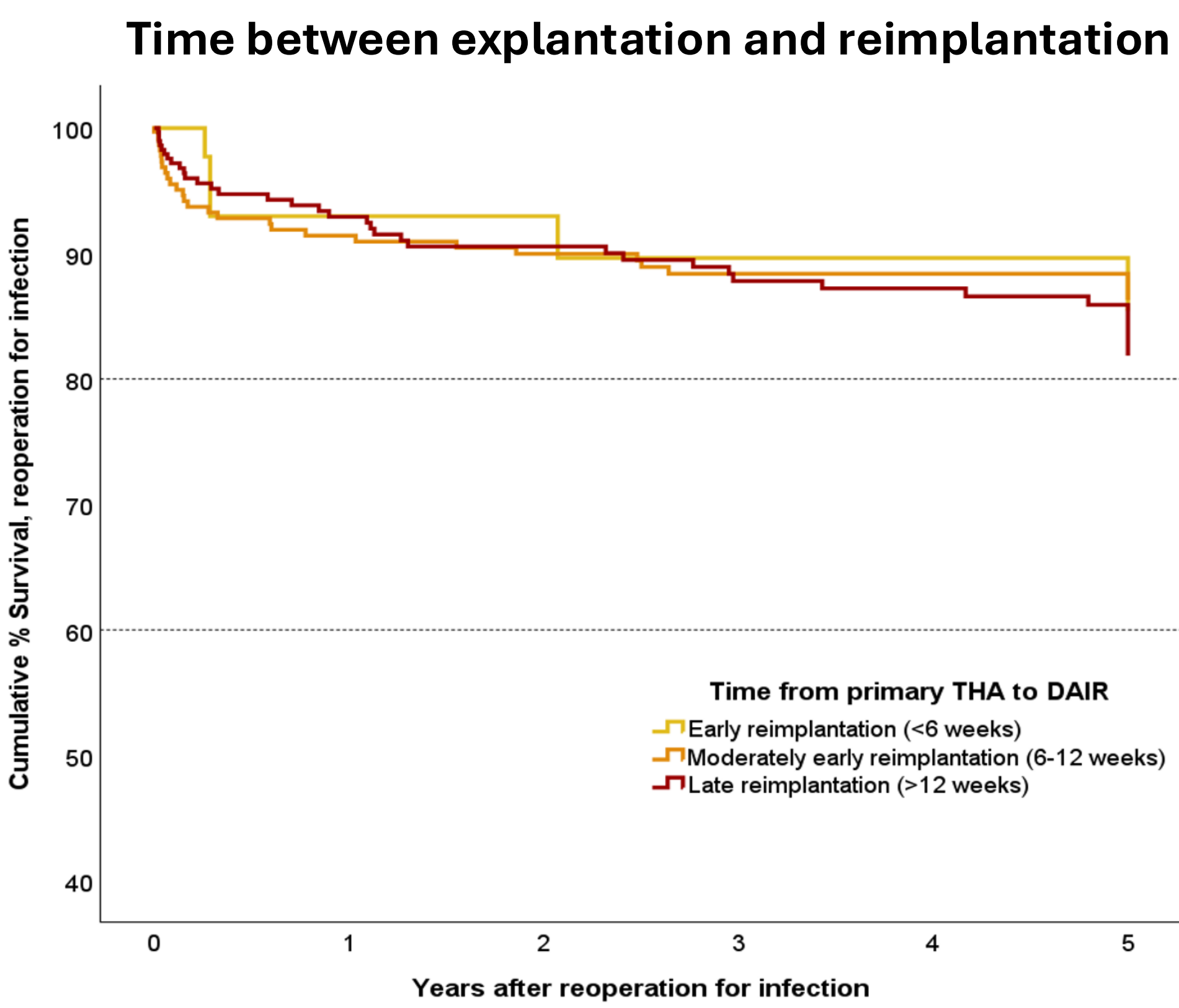
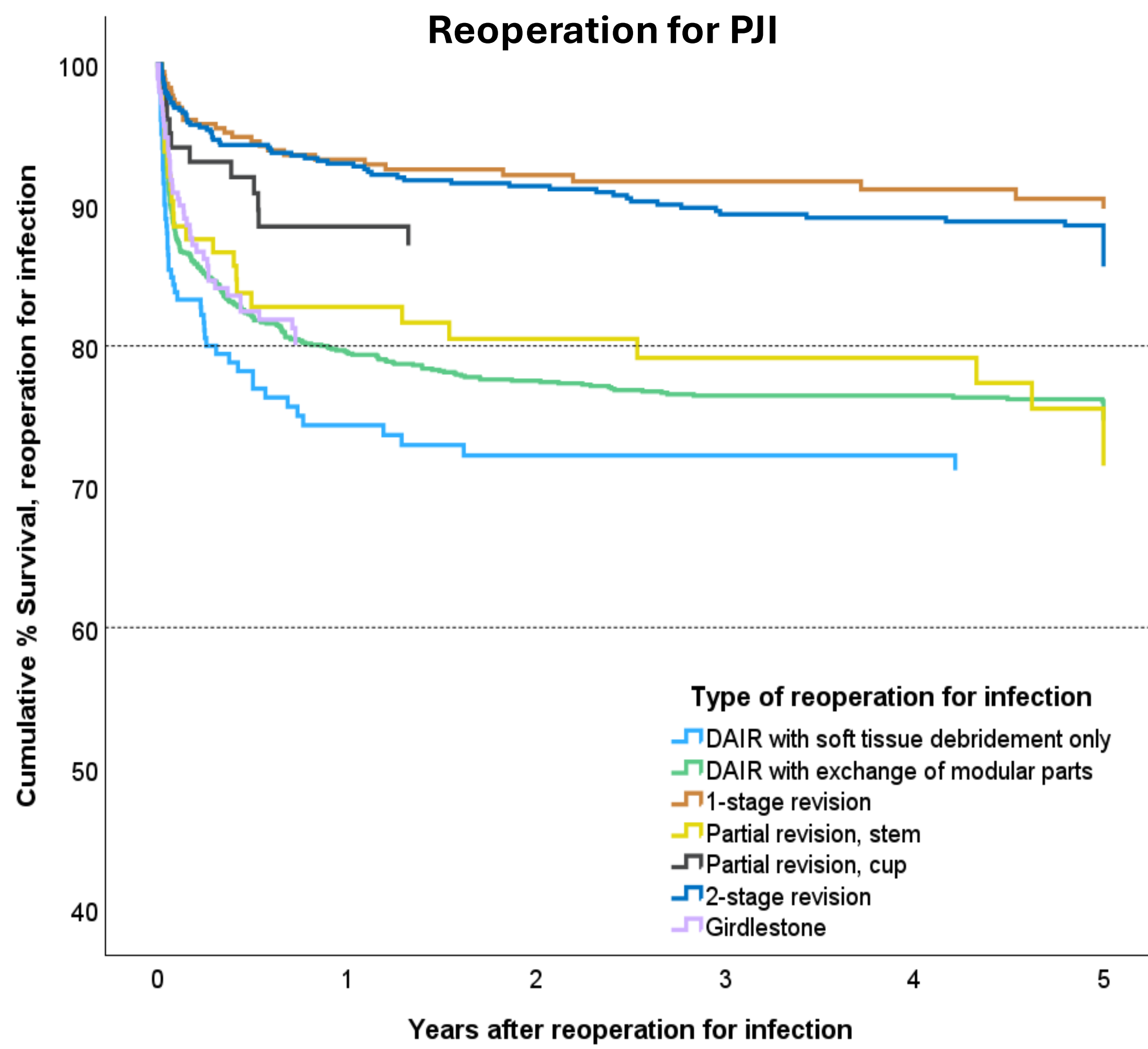
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1. Background and purpose

It is debated which surgical procedure yields the best result in the treatment of periprosthetic joint infection (PJI). We assessed the risk of re-revision for PJI, for seven different surgical strategies of treatment for PJI reported to the Norwegian Arthroplasty Register (NAR): 1- or 2-stage exchange, DAIR with or without exchange of modular parts, partial revision of either stem or cup, and Girdlestone procedure.

2. Patients and methods

We included primary THAs reported to the NAR 1987-2024 and reoperated for PJI 2005-2024. We identified 267,749 primary THAs. Cox regression analyses adjusted for sex, age, ASA-classification and year of reoperation were performed to assess risk (aHRR). In addition, we investigated influence of time between the steps in 2-stage revision (< 6weeks, 6-12 weeks, >12 weeks) for PJI and time from primary THA to DAIR (<4 weeks, 4-12 weeks, >12 weeks).



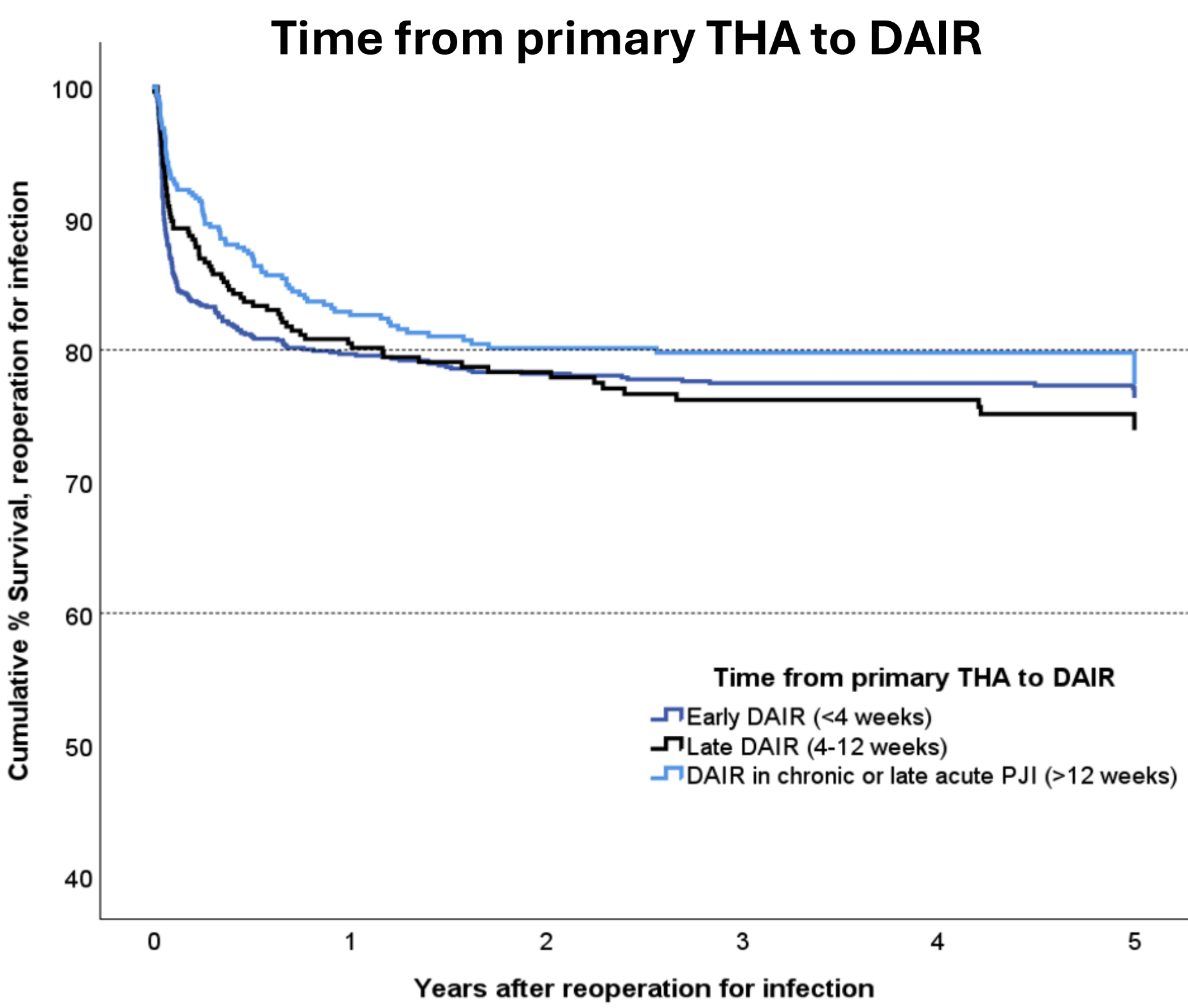
	Reoperation for PJI	Re-revision for PJI	aHRR (95%CI)	5-year survival
DAIR- soft tissue only	185	53	2.7(1.9-3.9)	72%
DAIR-exchange modular parts	1,557	358	2.2(1.7-2.9)	75%
1-stage revision	339	36	0.7(0.5-1.1)	90%
Partial revision, stem	117	28	2.2(1.4-3.5)	71%
Partial revision, cup	84	13	1.1(0.6-2.0)	87%
2-stage revision	481	75	1	86%
Girdlestone	248	44	1.9(1.3-2.8)	80%

2-stage interval	aHRR (95% CI)
Early <6 weeks	0.9(0.4-2.5)
Moderate early 6-12 weeks	1
Late >12 weeks	1.2(0.7-2.0)

3. Results

3,011 (1.2%) primary THAs were reoperated for PJI, 607 (20,2%) THAs were re-revised for PJI. The risk of re-revision for PJI were similar for 1- and 2-stage revision, with 90% and 86% 5-year survival respectively. DAIR with soft tissue debridement only has an almost 3 –times increased risk for re-revision for PJI and had a 5-year survival of 72%.

We found similar results regardless of time interval between explantation and reimplantation for 2-stage procedure. Similar results were found also regardless of time from primary THA to DAIR.



DAIR	aHRR (95% CI)
Early <4 weeks	1
Late 4-12 weeks	0.5(0.6-1.0)
Chronic/late acute >12 weeks	0.9(0.7-1.1)

4. Interpretation

1- and 2-stage revision, regardless of implant-free period, yielded similar and good results. DAIR appear to be an acceptable and less invasive strategy for early and late haematogenous PJI with a well-fixed implant. Choice of strategy should be dependent on the patient’s clinical situation.