

Early Revision : What Is The Real Value ?
DAIR - Indication & Limits

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Indonesia - The Netherlands

Disclosure

- Collaborators : Javad Parvizi, Thorsten Gerhke

- Professor, School of Medicine, University of Airlangga, Surabaya - Indonesia
- Associate Professor, Department of Orthopaedics, Leiden University - The Netherlands
- Senior Lecturer, University of Gadjah Mada, Yogyakarta - Indonesia

- Founding Godfather of ISAKOS Global Connection
- 2nd Vice President of Asia Pacific Orthopaedic Association (APOA) 2022 - 2023

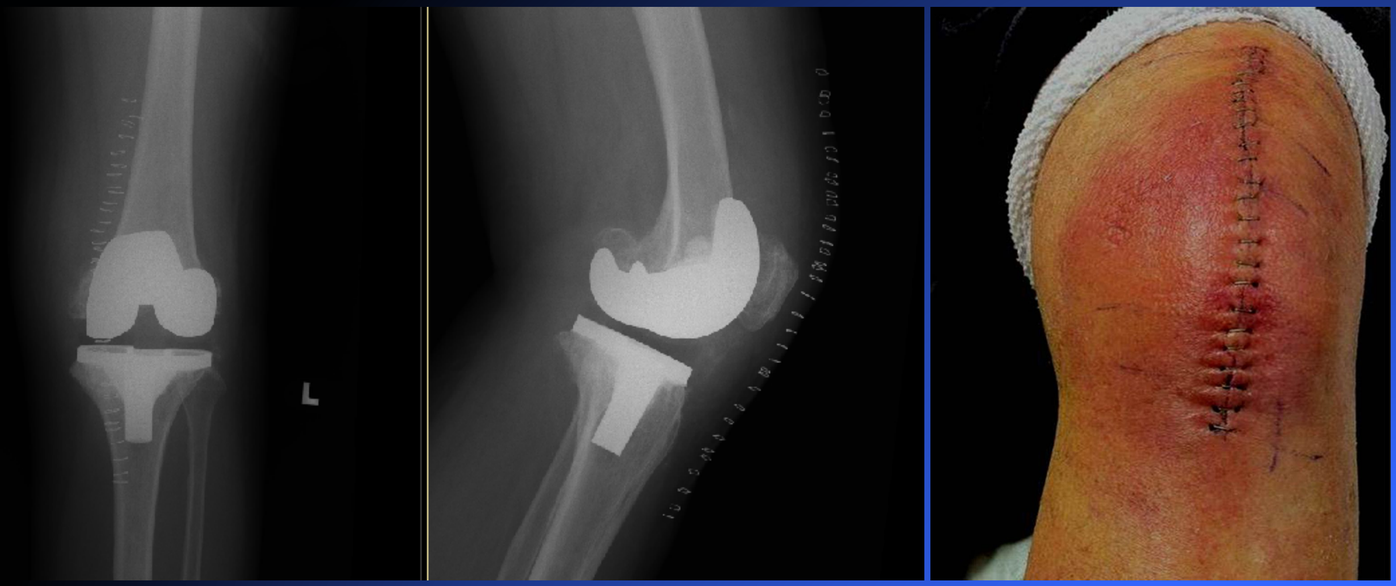
- Past President of Arthroplasty Society in Asia (ASIA) 2019 - 2022
- Past President of Asia Pacific Knee Society (APKS) 2019 - 2022
- Past President of Asia Pacific Arthroplasty Society (APAS) 2020 - 2022

- Consultant for :
  - DePuy Synthes, Zimmer Biomet, Gruppo Bioimpianti

- Editorial Board / Reviewer : CORR, Bone Joint Journal, J Arthroplasty, AJSM, VJSM, BJO, KSSTA, JISAKOS, Knee, OJSM, JOS, KSRR, The Hip & Knee Journal, JOSR

Question : What Will You Do ?

- Two Weeks Post op Primary TKR
- Female, 65 years old
- Swollen knee, redness & warmth
- CRP 106 , ESR 120
- Leukocyte 12,000



Treatment Options for PJI

- Antibiotics Suppression alone
- Debridement, Antibiotics & Implant Retention (DAIR)
- Single Stage Revision
- Two Stage Revision
- Resection Arthroplasty
- Arthrodesis
- Amputation

Treatment Options for PJI

Single Stage Revision , Two Stage Revision

or

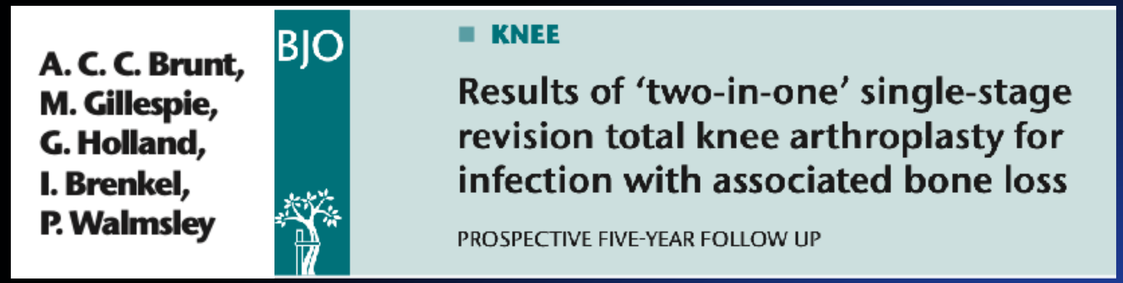
Debridement, Antibiotics & Implant Retention (DAIR) ??

Timing is very important

Single Stage vs Two Stage - Mortality, Cost & Re-revision



BJR, 2022



BJO, 2022





Conclusions :

- Single-stage revision is effective for treating PJI following TKA with bone loss
- There is potential for increased use to reduce the burden of knee PJI for patients, and for the healthcare system

One Stage Exchange - Pitfalls

- *How radical a debridement is necessary ?*
- *Are fully cemented stems required ?*



Fully cemented stems are difficult and destructive to remove

One Stage Exchange vs DAIR

Contents lists available at ScienceDirect

Journal of ISAKOS

journal homepage: www.elsevier.com/locate/jisakos



Systematic Review

Debridement, antibiotics, and implant retention (DAIR) for the early prosthetic joint infection of total knee and hip arthroplasties: a systematic review

Umile Giuseppe Longo [a,b,*], Sergio De Salvatore [a,b], Benedetta Bandini [a,b], Alberto Lalli [a,b], Bruno Barillà [a,b], Nicolaas Cyrillus Budhiparama [c], Sebastien Lustig [d]

- There is **no information on definitive indications** for which one-stage revision surgery may be used as a primary surgical intervention instead of the DAIR procedure in acute PJI patients
- It can be easily predicted that the outcome such as **the re-infection rate of one-stage revision surgery will be worse than the DAIR procedure**

Revision Arthroplasty for PJI

- ***Significant challenge to both surgeons & patients***

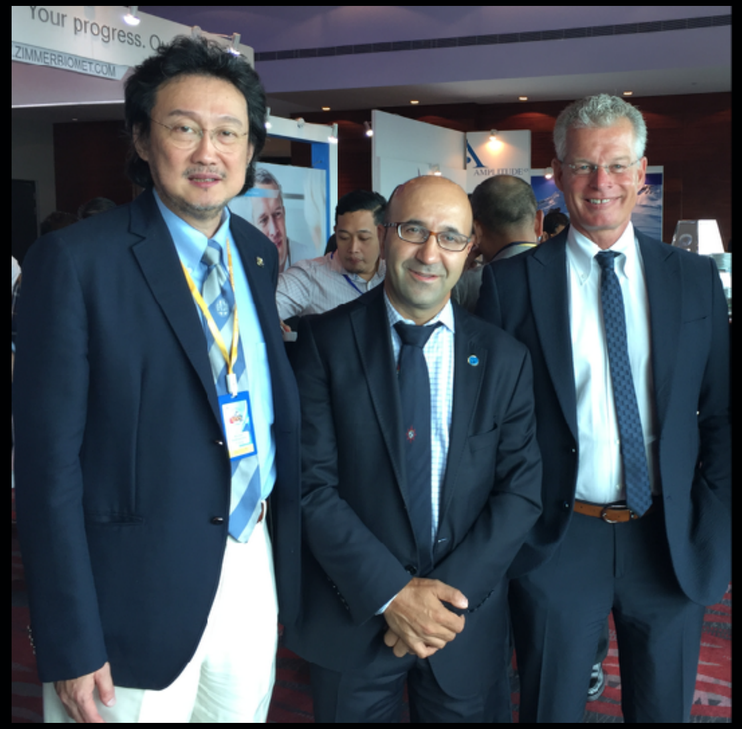
  - Reduce mobility & significant anesthetic
  - Surgical risk

- **Challenge for the surgeons :**
  - Removing a well fixed prosthesis
  - Difficult reconstruction
  - Potentially compromise soft tissue envelope
  - Increase risk of peri / postoperative complication

Implant retention without infection is the ideal end result of PJI treatment

Is DAIR The Solution ?

Why Surgeons Prefer DAIR ?



- Lower morbidity
- Bone preserving procedure
- Reduce hospital LOS
- Less technical demand than one stage / two stage
- Significant decrease in economic burden

Irrigation & Debridement (DAIR)

Must *decrease burden of biofilm* so perioperative antimicrobial therapy can eradicate all remaining infection

Crucial to *identify culprit agent* through aspiration prior to surgery

Antibiotics withheld until representative samples identified

International Consensus Meeting 2018

Proceedings of the Second International Consensus Meeting on Musculoskeletal Infection

Chairmen:
Javad Parvizi, MD, FRCS
Thorsten Gehrke, MD

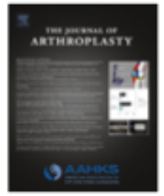


The Journal of Arthroplasty xxx (2018) 1–21

Contents lists available at ScienceDirect

The Journal of Arthroplasty

journal homepage: www.arthroplastyjournal.org



Hip and Knee Section, Treatment, Debridement and Retention of Implant: Proceedings of International Consensus on Orthopedic Infections

Jean Noël Argenson [1], Marius Arndt [12], George Babis [1], Andrew Battenberg [2], Nicolaas Budhiparama [2], Fabio Catani [3], Foster Chen [4], Brian de Beaubien [5], Ayman Ebied [6], Silvano Esposito [7], Christopher Ferry [5], Henry Flores [3], Andrea Giorgini [3], Erik Hansen [8], K.D. Hernugrahanto [2], Choe Hyonmin [6], Tae-Kyun Kim [9], In Jun Koh [9], Georgios Komnos [10], Christian Lausmann [12], Jeremy Loloi [5], Jaime Lora-Tamayo [11,12], I. Lumban-Gaol [2], F. Mahyudin [2], Mikel Mancheno-Losa [11,12], Camelia Marculescu [9], Sameh Marei [6], Kimberly E. Martin [5], Prashant Meshram [9], Wayne G. Paprosky [4], Lazaros Poultsides [3], Arjun Saxena [3], Evan Schwechter [4], Jay Shah [8], Noam Shohat [6], Rafael J. Sierra [1], Alex Soriano [13], Anna Stefánsdóttir [10], Linda I. Suleiman [4], Adrian Taylor [9], Georgios K. Triantafyllopoulos [3], Dwikora Novembri Utomo [2], David Warren [12], Leo Whiteside [5], Marjan Wouthuyzen-Bakker [6,13,14], Jean Yombi [14], Benjamin Zmistowski [11]

Debridement, Antibiotic, Implant Retention

Technique :

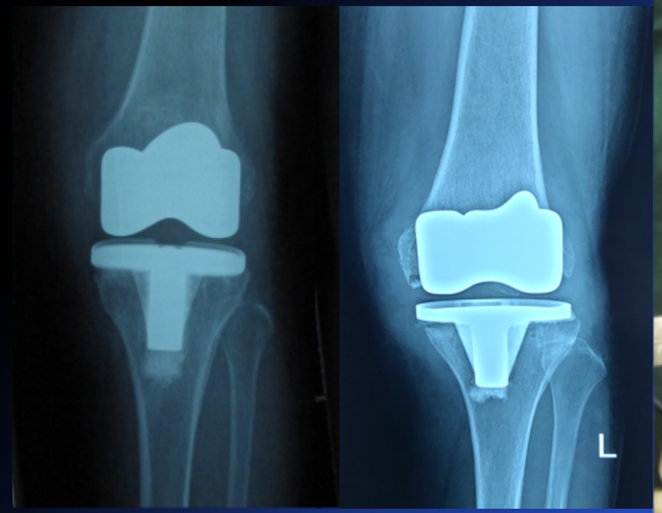
- **Aggressive debridement of all devitalized tissue**
- Obtain multiple fluid & tissue sample
- Hydrogen peroxide & betadine solutions
- Irrigate the joint with large volume of fluid
- New gowns & patients' extremity draping & set of surgical instruments
- Replace exchanged modular components
- Close wound over a drain after more irrigation



Imaging Investigation is Very Important

Rarely show evidence of infection

- Periosteal reaction
- Loose implants
- Bone resorption may indicate compromised prosthetic stability





DAIR Success Rate

- **Lower success rate than one / two stage revision**
  - DAIR : 55 - 90 %
  - One / two stage : 75 - 90 %

- **Predictors of lower DAIR success rate :**
  - Virulent organism (MRSA)
  - Symptom duration > 5 days (up to 4 weeks)

DAIR Success Rate

Highly variable due to :

- Lack of consistency for definition of acute infection
- No consecutive series
- Multiple surgeons in a single study

Author	Number of infected joints	Weeks to irrigation	Polyexchange performed	Retention rate
Brandt et al., 1999 [3]	33	23 pts > 4, 10 pts < 4		12 (36%)
Burger et al., 1991 [5]	39	14.3 (0.14–114.4)		7 (18%)
Chiu and Chen, 2007 [6]	40	73.7 (1.29–311.76)	40	12 (30%)
Deirmengian et al., 2003 [9]	31	104 (2.28–364)	10	11 (35%)
Mont et al., 1997 [19]	24	10 pts < 4, 14 pts 26–307	21	20 (83%) [10(100%) early infx, 10(71%) late infx]
Morrey et al., 1989 [21]	10			8 (80%)
Rasul et al., 1991 [22]	15 (6 superficial, 9 deep)	21.3 (1–156)		9 (60%) [6(100%) superficial, 3(33%) deep]
Segawa et al., 1999 [26]	41	30 pts < 4, 11 pts > 4	41	24 (59%) [23(77%) early, 1 (9%) late]
Tsukayama et al., 1996 [29]	41	< 4	41	28 (68%)

Decision to Retain Implant

Depends on :

- Not immunocompromised
- PJI caused by low virulent organism
- Biofilm containment



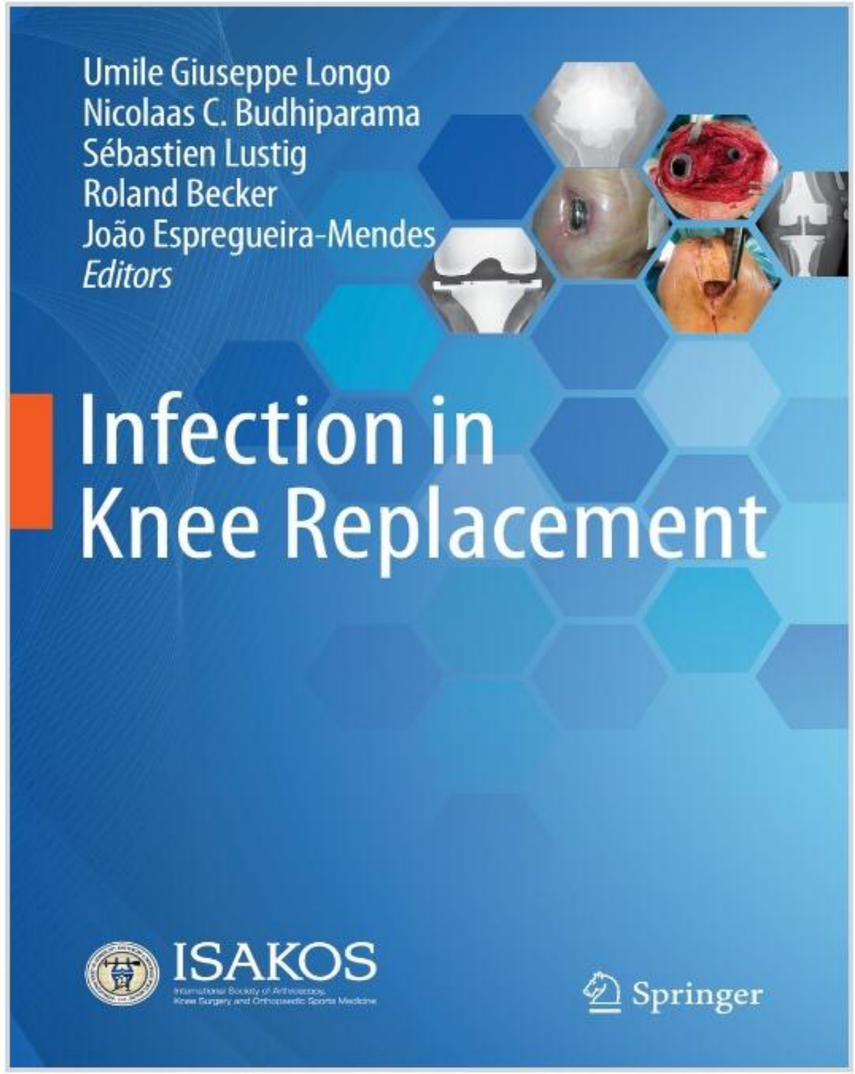
Crucial to eradicate biofilm within a short time frame before it attaches to the implant

Indications for DAIR

- Patients with an acute infection (< 3 weeks) or acute hematogenous infection of TKA < 2 weeks of onset
- Well fixed & well positioned prosthesis
- Good soft tissue envelope
- Patients with high risk of complication in more aggressive surgery

Predictor of DAIR Success







Infection in Knee Replacement pp 159–170 | Cite as

DAIR (Debridement, Antibiotics, and Implant Retention) for the Treatment of Periprosthetic Joint Infection of Knee

Nicolaas C. Budhiparama, Asep Santoso, Hendy Hidayat & Nadia N. Ifran

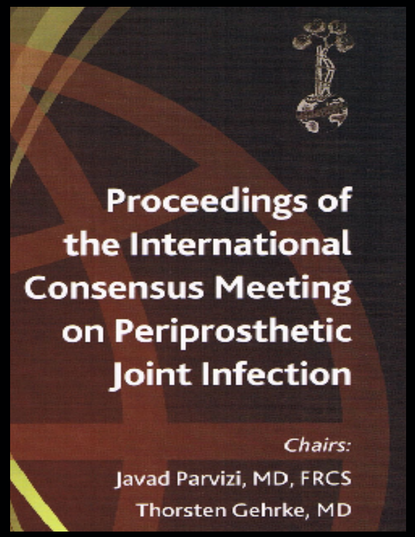
Chapter | First Online: 14 November 2021

435 Accesses

Abstract

Prosthetic joint infection (PJI) is one of the most devastating complications following joint replacement. The primary goal of treatment is eradication of the infection. Maintenance of a pain-free, functional joint is the secondary goal, which is also important. The surgical options include irrigation, debridement, antibiotics, and implant retention with or without polyethylene exchange (DAIR), one-stage or two-stage revision, resection arthroplasty, arthrodesis, and amputation. When patients are contraindicated to undergo DAIR treatment, either one stage or multiple stages revision surgery is the preferred option. The fundamental aspects for a successful DAIR are related to tissue, stability of the prosthesis, and susceptibility of the organism. Resection arthroplasty (without reimplantation), arthrodesis, and amputation remain valid options for difficult to treat and chronic PJI, and these treatment options very rarely have a role in acute PJI cases. Non-surgical medical treatment such as antibiotic suppression therapy should be reserved for patients who are unfit or contraindicated for surgery.

Predictor of DAIR Success - ICM 2018



Delegates:
Wouthuyzen-Bakker, Marjan
Ebied, Ayman
Hyonmin, Choe
Shohat, Noam

Editor:
Parvizi, Javad

Co-Authors: Sameh Marei

HK-111 - DAIR INDICATIONS

HK-111 - What are the indications and contraindications of using debridement, antibiotics, and implant retention with modular components for the management of PJI?



- Rationale / Recommendation :
  - DAIR only performed when acute PJI exists < 3 weeks
  - **KLIC and CRIME80 scores may help in stratifying risk (only for DAIR patients)**
  - Mature biofilm with “persister cells” can be cured only by removing the implant
  - Extending the antibiotic before debridement does not increase the chance for cure

Delegate Vote : Agree 80% ; Disagree 18% ; Abstain 2%
Super Majority → Strong Consensus

The Journal of Arthroplasty 33 (2018) 2582–2587

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The Journal of Arthroplasty

journal homepage: www.arthroplastyjournal.org



Complications - Infection

Predicting Failure in Early Acute Prosthetic Joint Infection Treated With Debridement, Antibiotics, and Implant Retention: External Validation of the KLIC Score

Claudia A.M. Löwik, MD [a,*], Paul C. Jutte, MD, PhD [a,1], Eduard Tornero, MD [b], Joris J.W. Ploegmakers, MD [a,1], Bas A.S. Knobben, MD, PhD [c,1], Astrid J. de Vries, PhD [c,1], Wierd P. Zijlstra, MD, PhD [d,1], Baukje Dijkstra, MSc [d,1], Alex Soriano, MD, PhD [e], Marjan Wouthuyzen-Bakker, MD, PhD [f], on behalf of the Northern Infection Network Joint Arthroplasty (NINJA)

386 patients with acute PJI between 2006 and 2016 :

Patients KLIC Score	Failure Rate
- ≤ 2	27.9 %
- 2.5 - 3.5	37.1 %
- 4 - 5	49.3 %
- 5.5 - 6.5	54.5 %
- ≥ 7	85.7 %

KLIC *(Kidney, Liver, Index Surgery, Cemented Prosthesis and CRP Value)* ***score is relatively good pre-op risk score for DAIR failure in patients with early acute PJI***

Journal of Infection 78 (2019) 40–47

Clinical outcome and risk factors for failure in late acute prosthetic joint infections treated with debridement and implant retention☆

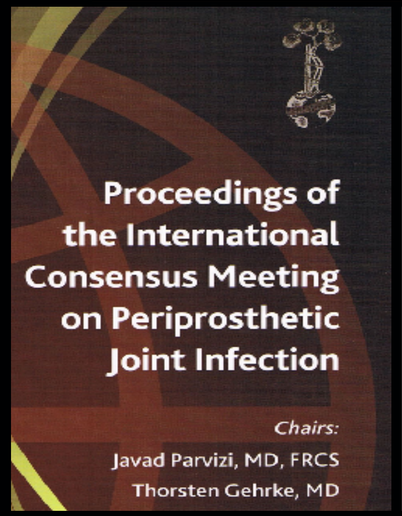
Marjan Wouthuyzen-Bakker[a,*], Marine Sebillotte[b], Jose Lomas[c], Adrian Taylor[c], Eva Benavent Palomares[d], Oscar Murillo[d], Javad Parvizi[e], Noam Shohat[e,f], Javier Cobo Reinoso[g], Rosa Escudero Sánchez[g], Marta Fernandez-Sampedro[h], Eric Senneville[i], Kaisa Huotari[j], José Maria Barbero[k], Joaquín Garcia-Cañete[l], Jaime Lora-Tamayo[m], Matteo Carlo Ferrari[n], Danguole Vaznaisiene[o], Erlangga Yusuf[p], Craig Aboltins[q,r], Rihard Trebse[s], Mauro José Salles[t], Natividad Benito[u], Andrea Vila[v], Maria Dolores Del Toro[w], Tobias Siegfried Kramer[x,y], Sabine Petersdorf[z], Vicens Diaz-Brito[aa], Zeliha Kocak Tufan[bb], Marisa Sanchez[cc], Cédric Arvieux[b,dd], Alex Soriano[ee], on behalf of the ESCMID Study Group for Implant-Associated Infections (ESGIAI)

- Late acute PJIs have a high failure rate with DAIR

C	COPD	**2**
	CRP > 150 mg/L	**1**
R	Rheumatoid arthritis	**3**
I	Indication prosthesis: fracture	**3**
M	Male	**1**
E	Exchange of mobile components	**-1**
80	Age > 80 years	**2**

Treatment should be personalized depending on age, comorbidity, clinical presentation & microorganism

Modular Component Exchange ? - Benefits



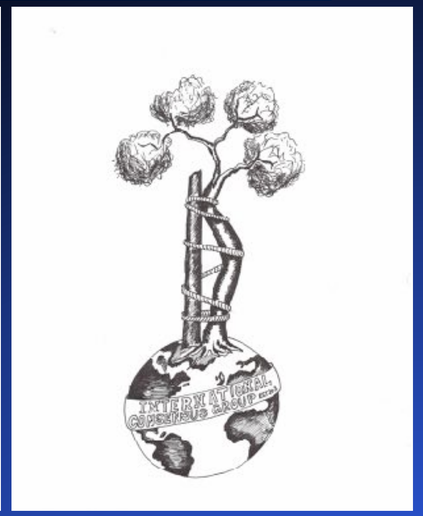
Delegates:
Koh, In Jun
Taylor, Adrian
Kim, Tae-Kyun

Editor:
Parvizi, Javad

Coauthors: Prashant Meshram

HK-23 - MODULAR EXCH & DAIR SUCCESS

HK-23 - Does exchange of all modular components during debridement, antibiotic, and implant retention (DAIR) reduce the rate of SSI/PJI recurrence?



- Rationale / Recommendation :
  - **86% success rate with modular component exchange &**

    4x increase in eradication rate
  - Better visualization in the posterior knee

- ***Strength of recommendation : Moderate***

Delegate Vote : Agree 94 % ; Disagree 4 % ; Abstain 2 %
Super Majority → Strong Consensus

Modular Component Exchange ? - No Benefits

M. Gerritsen,
A. Khawar,
H. Scheper,
R. van der Wal,
J. Schoones,
M. de Boer,
R. Nelissen,
B. Pijls

From Leiden University Medical Center, Leiden, the Netherlands

BJO

SYSTEMATIC REVIEW

Modular component exchange and outcome of DAIR for hip and knee periprosthetic joint infection

A SYSTEMATIC REVIEW AND META-REGRESSION ANALYSIS

BJO, 2021

Conclusions :

- **Study found no benefit** of modular component exchange on reduction of PJI failure
- This suggests the effect seen after 2004 may reflect a more rigorous, evidence-based, approach to the infected implant compared to the years before

Controversies of DAIR

1. **Failure in DAIR Affecting Subsequent Revision**

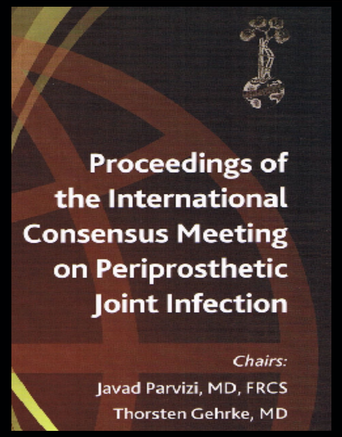
2. **Antibiotic duration**







Failure in DAIR Affecting Subsequent Revision - ICM 2018

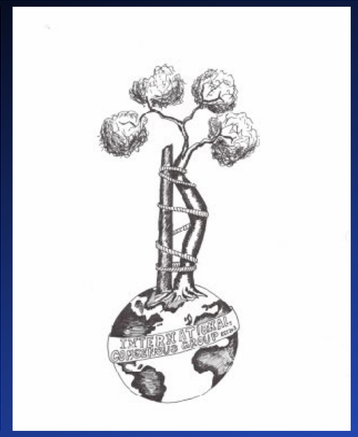


Delegates:
Hansen, Erik
Shah, Jay

Editor:
Parvizi, Javad

HK-27 - PREV DAIR & TX SUCCESS

HK-27 - Does perfoming a debridement, antibiotics, and implant retention affect the outcome of a subsequent two-stage exchange arthroplasty?



- Rationale / Recommendation :
  - ***No conclusive evidence*** that prior DAIR adversely affects the outcome of subsequent 2-stage exchange arthroplasty
  - Two previous studies found that failure of initial DAIR and modular exchange led to ***higher failure rate of 2-stage*** (range 23.86 - 42%)
  - Two more recent studies found that failure of ***prior DAIR does not increase the risk of failure for subsequent 2-stage*** (success 82.5% w/o DAIR vs 82.2% w/ DAIR)
- ***Strength of recommendation : Limited***

Delegate Vote : Agree 93% ; Disagree 6% ; Abstain 1%
Super Majority → Strong Consensus

Second DAIR Should be Considered

The Journal of Arthroplasty 35 (2020) 2204–2209

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journal homepage: www.arthroplastyjournal.org

Complications - Infection

A Second Surgical Debridement for Acute Periprosthetic Joint Infections Should Not Be Discarded

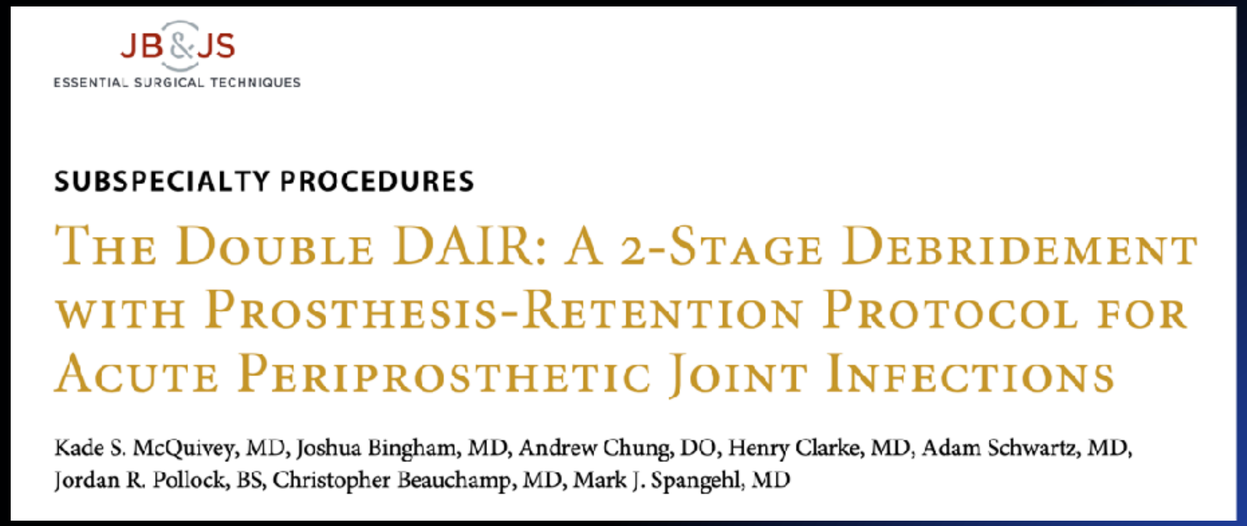
Marjan Wouthuyzen-Bakker, MD, PhD [a,*], Claudia A.M. Löwik, PhD [b], Joris J.W. Ploegmakers, MD, PhD [b], Bas A.S. Knobben, MD [c], Baukje Dijkstra [d], Astrid J. de Vries [c], Glen Mithoe, MD [e], Greetje Kampinga, MD, PhD [a], Wierd P. Zijlstra, MD, PhD [d], Paul C. Jutte, MD, PhD [b], on behalf of the Northern Infection Network Joint Arthroplasty (NINJA)



Conclusions :

- 455 DAIR, 144 underwent 2nd debridement, 37/144 (25.7%) failed
- **A second DAIR had a low failure rate,** therefore a second DAIR **should not be discarded** in acute PJIs

Second DAIR Should be Considered



JB&JS
ESSENTIAL SURGICAL TECHNIQUES

SUBSPECIALTY PROCEDURES

THE DOUBLE DAIR: A 2-STAGE DEBRIDEMENT WITH PROSTHESIS-RETENTION PROTOCOL FOR ACUTE PERIPROSTHETIC JOINT INFECTIONS

Kade S. McQuivey, MD, Joshua Bingham, MD, Andrew Chung, DO, Henry Clarke, MD, Adam Schwartz, MD, Jordan R. Pollock, BS, Christopher Beauchamp, MD, Mark J. Spangehl, MD

Conclusion :

- **Second debridement is performed (approximately 5 to 6 days later),** and the new modular, sterile components are implanted for **a successful DAIR**
- Extended oral antibiotics following debridement with component retention can increase infection-free survivorship

Second DAIR Should be Considered

Complications - Infection

The Journal of Arthroplasty 34 (2019) 1214–1220

Failed Debridement and Implant Retention Does Not Compromise the Success of Subsequent Staged Revision in Infected Total Knee Arthroplasty

Katy Kim, BSc [a], Mark Zhu, MBChB [b], Alana Cavadino, PhD [c], Jacob T. Munro, FRACS, PhD, MBChB [b], Simon W. Young, FRACS, MD, MBChB [a, *]

[a] *Department of Orthopaedics, North Shore Hospital, Auckland, New Zealand*
[b] *Department of Orthopaedics, Auckland Hospital, Auckland, New Zealand*
[c] *Section of Epidemiology and Biostatistics, The University of Auckland, Auckland, New Zealand*

- 75 patients with 2 stage rTKA, 228 with a prior I&D
- After 6.2 years, success rate 72% for I&D group vs 81% w/o I&D group

Conclusion :

Study suggested that a previously failed DAIR does not compromise the success rate of subsequent staged revision

DAIR vs Two Stage Revision in PJI less the 12 weeks

A comparsion study between debridement, antibiotics, and implant retention and two-stage revision total knee arthroplasty for the management of periprosthetic joint infection occurring within 12 weeks from index total knee arthroplasty

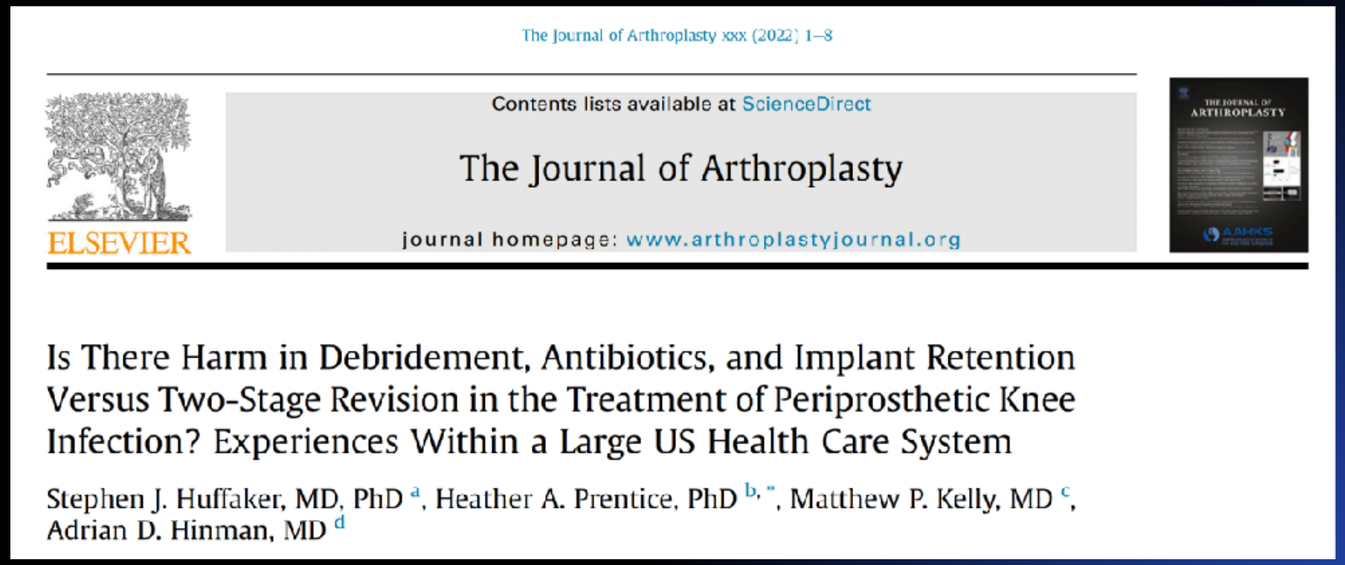
Yanchao Zhang[1,2,3†], Zhisen Gao[2,3†], Ti Zhang[2,3,4], Yu Dong[2,3,4], Zhuoqi Sheng[1,2,3], Fei Zhang[1,2,3], Yonggang Zhou[2,3*] and Lingfei Guo[2,5*]

JOSR, 2022

- DAIR as a choice for patients with current infection within 12 weeks after primary TKA
- For methicillin-resistant staphylococcal infections and fungal infections, two-stage rTKA might be preferred

DAIR demonstrated comparable effectiveness with two-stage rTKA

Experience in a Large US Health Care System



The Journal of Arthroplasty xxx (2022) 1–8

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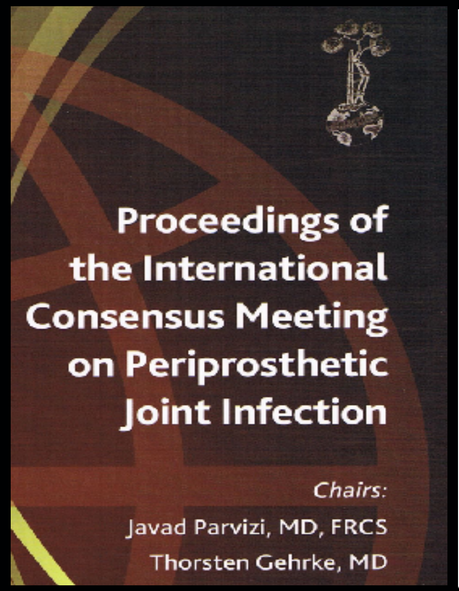
Is There Harm in Debridement, Antibiotics, and Implant Retention Versus Two-Stage Revision in the Treatment of Periprosthetic Knee Infection? Experiences Within a Large US Health Care System

Stephen J. Huffaker, MD, PhD [a], Heather A. Prentice, PhD [b,*], Matthew P. Kelly, MD [c], Adrian D. Hinman, MD [d]

- Although DAIR had a higher risk of septic re-revision, there is **no difference in the risk following DAIR-F compared to who initially underwent 2-stage revision**
- DAIR is not merely a simple “washout” but a major irrigation, debridement, and debulking of the soft tissues and scar, with replacement of the modular implants

Do it for the right reason - NOT because it is easier

Antibiotic Management Post DAIR



Delegates:
Lora-Tamayo, Jaime
Warren, David

Editor:
Citak, Mustafa
Frommelt, Lars

Co-Authors: Mikel Mancheno-Losa, Marius Arndt, Christian Lausmann

HK-138 - ABX AFTER DAIR

HK-138 - What is the optimal length of antibiotic treatment following debridement, antibiotics, and implant retention (DAIR) for acute PJI?



- Rationale / Recommendation :
  - **6 - 8 weeks of antibiotic therapy** seems to be sufficient in most PJI cases treated by DAIR
  - 300 - 450mg oral rifampicin twice daily + initial IV antibiotic
- ***Strength of recommendation : Moderate***

Delegate Vote : Agree 91% ; Disagree 9% ; Abstain 1%
Super Majority → Strong Consensus

Antibiotic Management Post DAIR

Truth in DAIR: Duration of Therapy and the Use of Quinolone/Rifampin-Based Regimens After Debridement and Implant Retention for Periprosthetic Joint Infections

Don Bambino Geno Tai,[1] Elie F. Berbari,[1] Gina A. Suh,[1] Brian D. Lahr,[2] Matthew P. Abdel,[3] and Aaron J. Tande[1]

Open Forum Infectious Diseases, 2022

Conclusions :

- **The duration of initial IV antibiotic therapy did not correlate with treatment failure in this cohort of patients**
- Rifampin use is recommended for staphylococcal knee PJI
- There was no apparent benefit of FQ use in staphylococcal PJI

Why We Still Have Culture-Negative PJI : Common Causes



The Journal of Arthroplasty 37 (2022) 1488–1493

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2021 AAHKS Annual Meeting Symposium

Diagnosis and Treatment of Culture-Negative Periprosthetic Joint Infection

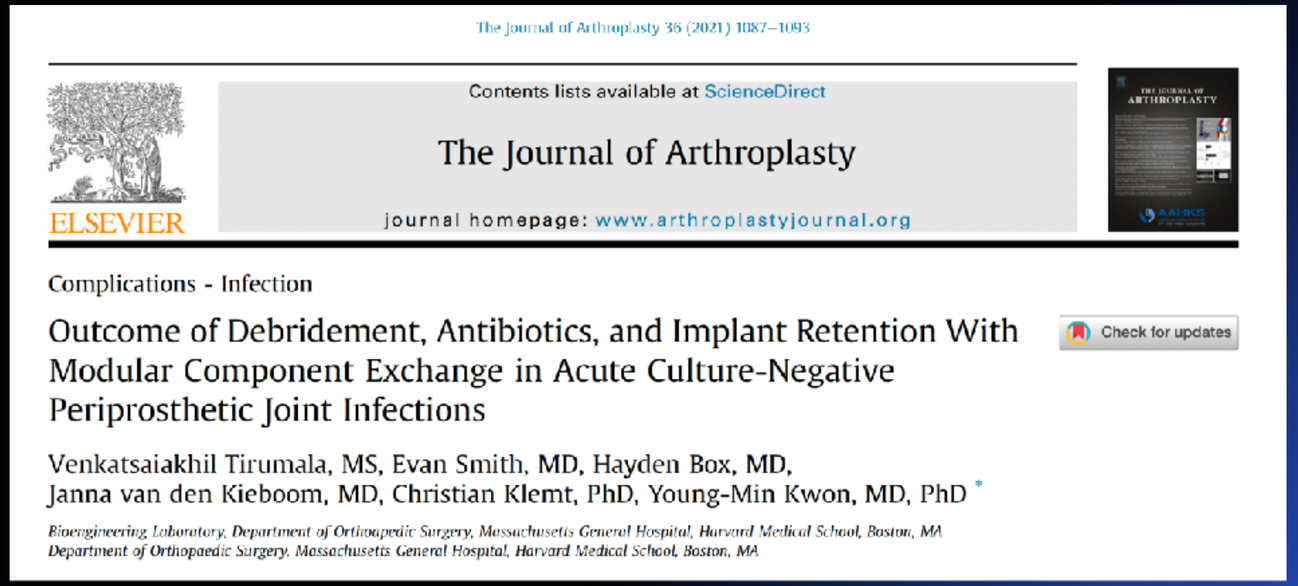
Graham S. Goh, MD, Javad Parvizi, MD, FRCS *

Rothman Orthopaedic Institute at Thomas Jefferson University, Philadelphia, PA

- **A paradigm shift from culture-based to molecular-based methods**
- These novel techniques hold much promise in the demystification of culture-negative PJI and revolutionization of the microbiology laboratory

However, it is still unknown whether these recommendations should be applied universally in all cases of PJI, as organism factors are also important to consider

DAIR in Acute Culture-Negative



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Complications - Infection

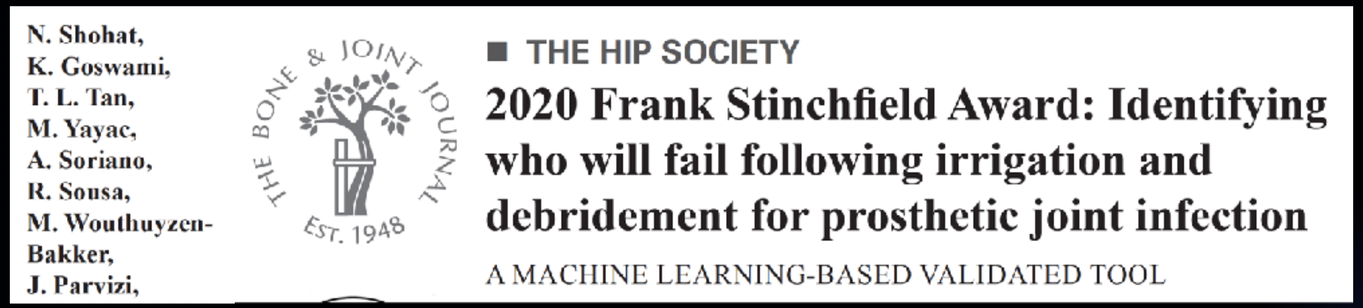
Outcome of Debridement, Antibiotics, and Implant Retention With Modular Component Exchange in Acute Culture-Negative Periprosthetic Joint Infections

Venkatsaiakhil Tirumala, MS, Evan Smith, MD, Hayden Box, MD, Janna van den Kieboom, MD, Christian Klemt, PhD, Young-Min Kwon, MD, PhD *

Bioengineering Laboratory, Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA
Department of Orthopaedic Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA

- **7% - 23% of PJIs have been reported to yield negative culture results**
- DAIR for acute culture-negative PJI was associated with similar reinfection rates compared to acute culture-positive PJI, **suggesting that culture negativity may not be a contraindication to DAIR in patients with acute PJI**

Machine Learning as Predictor of DAIR Success Rate


N. Shohat,
K. Goswami,
T. L. Tan,
M. Yayac,
A. Soriano,
R. Sousa,
M. Wouthuyzen-Bakker,
J. Parvizi,

THE BONE & JOINT JOURNAL EST. 1948

■ THE HIP SOCIETY

2020 Frank Stinchfield Award: Identifying who will fail following irrigation and debridement for prosthetic joint infection

A MACHINE LEARNING-BASED VALIDATED TOOL


Risk Scores and Machine Learning to Identify Patients With Acute Periprosthetic Joints Infections That Will Likely Fail Classical Irrigation and Debridement

Marjan Wouthuyzen-Bakker[1*], Noam Shohat[2,3], Javad Parvizi[4] and Alex Soriano[5]

Frontiers, 2021

- The developed algorithm provides the medical profession with a tool that can be employed in clinical decision-making and improve patient care
- **The use of machine learning as a tool for predicting outcomes following I&D surgery is beneficial**

Latest Update on Periprosthetic Joint Infection

Complications - Infection The Journal of Arthroplasty 35 (2020) 1696–1702

Is Treatment of Periprosthetic Joint Infection Improving Over Time?

Chi Xu, MD [a, b], Karan Goswami, MD, MRCS [a], William T. Li [a], Timothy L. Tan, MD [a], Michael Yayac, MD [a], Sheng-Hao Wang, MD [a, c], Javad Parvizi, MD, FRCS [a, *]

[a] Rothman Orthopaedic Institute at Thomas Jefferson University, Philadelphia, PA
[b] Department of Orthopaedic Surgery, General Hospital of People's Liberation Army, Beijing, China
[c] Department of Orthopaedics, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan



Conclusions :

They were **unable to detect any substantial improvement in the treatment success rates of PJI** at our institution over the **17 years examined** in this study

Novel treatments and techniques are certainly needed as current and prior strategies remain far from optimal

Lack of International Consensus for DAIR

However, there is a lack of studies, in particular randomized control trials (RCTs), **comparing DAIR with one-stage and two-stage revision protocols** in the setting of early PJIs, reflecting the necessity to conduct further high-quality studies to face the burden of early PJI



No international consensus has been reached regarding the best approach for early prosthetic knee and hip infections

Conclusions

- We recommend a DAIR procedure in an acute post operative period < 3 weeks of surgery or acute hematogenous infection of TKA < 2 weeks of onset. Otherwise, single stage revision is a good option
- Post operative antibiotic IV for 6 weeks & oral antibiotics for 3 - 6 months; progress monitored by clinical exams and inflammatory markers
- Immunocompromised, MRSA infection, poor condition of local soft tissue should prompt revision arthroplasty





Thank You For Your Attention

