UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Centre For Sports Medicine and Orthopaedics

EUROPEAN ANTERIOR HIP MEETING

Retrospective Analysis of the Efficacy of Oral Venous Thromboembolism Prophylaxis for Patients Undergoing Minimally Invasive Direct Anterior Approach in Total Hip Arthroplasty

Dyllan Brett Geldenhuys (MMed (Orth), MBBCh) **Jurek Rafal Tomasz Pietrzak** (FC Orth (SA), MMed (Orth), MBBCh) **Nabila Goga** (FC Orth (SA), MMed (Orth), MBChB) **Josip Nenad Cakic** (PhD, FCS (Orth) SA, MMed (Orth), MD)

Centre for Sports Medicine and Orthopaedics • University of the Witwatersrand, Johannesburg • South Africa

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Introduction

Total Hip Arthroplasty (THA)

Total Hip Arthroplasty (THA) is a highly successful and cost-effective surgical procedure with reported survivorship of 98% at 10 years and 90% at 20 years. Global demand continues to grow with projections exceeding 80,000 procedures annually by 2030.

⚠ VTE (DVT or PE)

VTE manifesting as DVT or PE is a devastating complication following THA. Worldwide, 10 million VTE episodes are diagnosed annually. Without prophylaxis, incidence reaches 40–60% in THA patients.

The AMIS (Direct Anterior) Approach

A minimally invasive technique with demonstrated benefits in early recovery, but optimal VTE prophylaxis duration in this specific setting remains debated.

Objective: To evaluate the efficacy and safety of **2-week versus 4-week** oral rivaroxaban (10 mg daily) prophylaxis in patients undergoing **AMIS Total Hip Arthroplasty.**

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Methods

Retrospective Study
526 AMIS THA • Single Surgeon
Jan 2017 – Dec 2022

IPCP — All Patients
Applied immediately post-op
until discharge

Twice-Daily Inpatient Physio
Day 0 post-op
until discharge

10 mg Rivaroxaban PO Daily

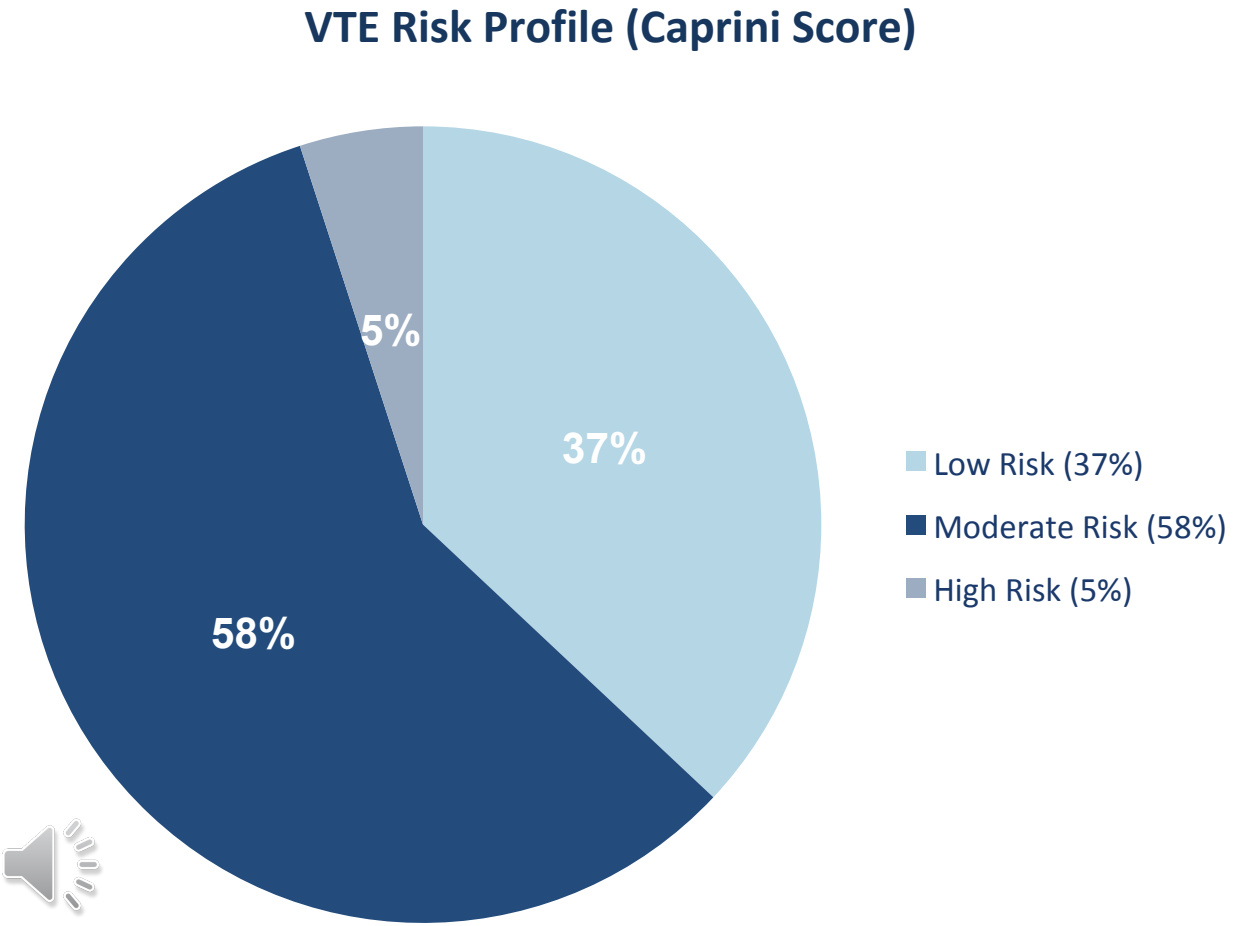
Group A — 4-Week Course
n = 356 patients

Group B — 2-Week Course
n = 170 patients

3-Week Post-op Review (all patients): Wound check • DVT clinical exam • Lower-limb duplex Doppler • Caprini Score stratification

Results: Demographics & VTE Risk

Variable	Value
Total patients	526
Mean Age (years)	59.5 ± 13.4
Gender (M / F)	223 / 303
Mean BMI	28.02 ± 5.58
Co-morbidities	
None (0)	49.1%
One (1)	41.1%
Two (2)	8.9%
≥ Three (≥3)	0.9%



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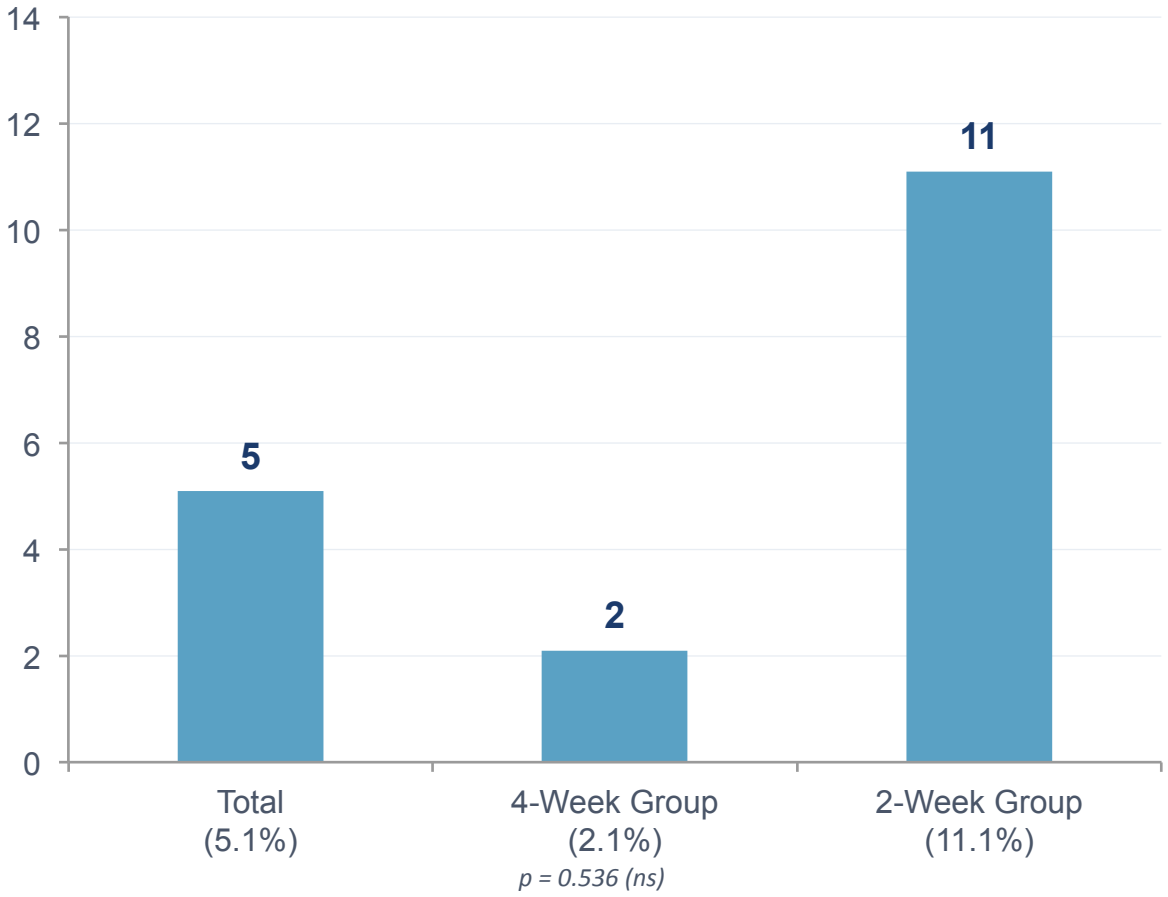
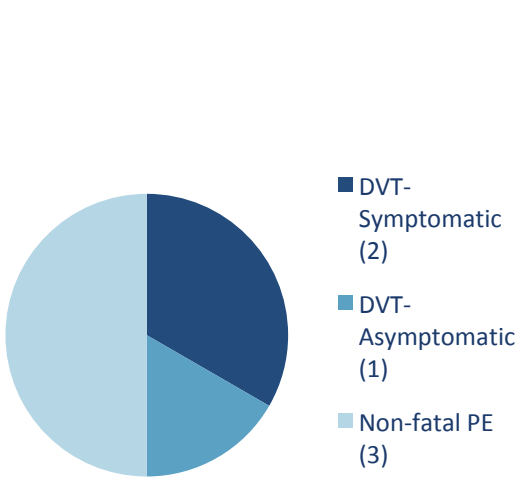
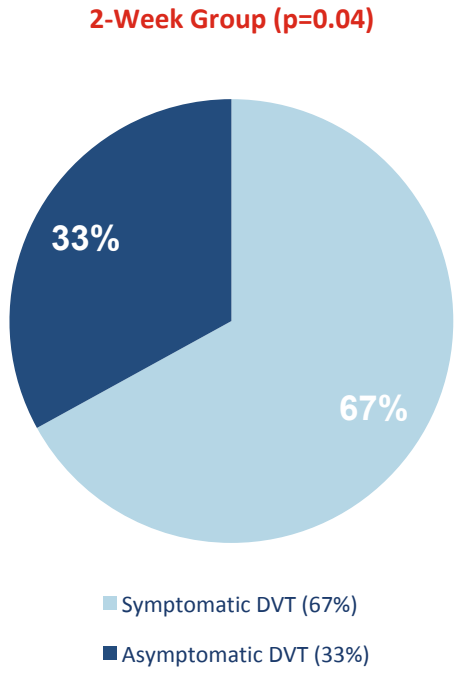
Results: Complication Rate & VTE Incidence

Complication Rate by Group



Total VTE Incidence: 1.2% (n=6)





All 6 VTE events occurred in the 2-week group • Wound dehiscence: 12 cases • PJI: 3 cases • Overall surgical complication rate: 3.8% (p=0.48)

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Results: VTE Cases Detail

All 6 VTE events occurred exclusively in the 2-week prophylaxis group

Case	Gender	Age	BMI	Caprini Score	Prosthesis	VTE Duration	Complication
1	Female	82	30.71	High risk	Cemented	2-weeks	**Symptomatic DVT**
2	Male	66	28.31	High risk	Uncemented	2-weeks	**Asymptomatic DVT**
3	Female	75	32.16	Moderate risk	Cemented	2-weeks	**Symptomatic DVT**
4	Male	74	36.05	High risk	Cemented	2-weeks	**PE Non-fatal**
5	Male	54	31.42	High risk	Uncemented	2-weeks	**PE Non-fatal**
6	Female	60	30.35	High risk	Cemented	2-weeks	**PE Non-fatal**

All patients > 50 yrs

All moderate/high Caprini risk

83% BMI > 30

66% cemented prosthesis

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Conclusion

✓ Oral rivaroxaban (10 mg daily) is an effective VTE prophylaxis in AMIS THA.

✓ Total VTE incidence was low at 1.2% (n=6 of 526).

★ **All 6 VTE events occurred exclusively in the 2-week group (p=0.04) — shorter duration is associated with significantly higher VTE risk.**

✓ Extended 4-week prophylaxis is NOT associated with increased wound complications or bleeding risk.

→ Extended prophylaxis should be considered, especially in obese and high-risk patients (elevated Caprini score) undergoing AMIS THA.

Limitations

- Retrospective single-centre design
- Single surgeon series
- No fatal PE events recorded
- Future prospective RCTs required

Clinical Relevance

In AMIS THA, 4-week rivaroxaban prophylaxis significantly reduces VTE risk compared to 2-week regimens , particularly in high-risk patients without increasing surgical complications.

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Contact Details

Presenter: Dr. Josip N Cakic (MBChB, PhD (Wits),FCS (Ortho) (MMed (Orth) / Dr. Dyllan Brett Geldenhuys (MMed (Orth), MBBCh)

Institution: Centre for Sports Medicine and Orthopaedics
University of the Witwatersrand, Johannesburg, South Africa

Co-authors: J.R.T. Pietrzak (FC Orth (SA)), N. Goga (FC Orth (SA)), J.N. Cakic (PhD, FCS (Orth))

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