

Does The Use Of Perioperative Oral Medications Reduce The Risk Of Developing Post-Operative Arthrofibrosis In Patients Having Surgery To The Knee? A Systematic Review.

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Disclosures

- Mr Jimmy Ng is an educational consultant for Smith and Nephew.
- The other authors have nothing to declare.



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Background

- Incidence of arthrofibrosis 1-17% after TKR [1-4], 4-38% after ACLR [5].
- Occurs due to dysregulated extracellular matrix deposition within the joint capsule [6].
- Oral medications which down-regulate inflammatory response may reduce risk of arthrofibrosis.
- The aim of our study was to report whether any oral medication taken peri-operatively may reduce the risk of arthrofibrosis after knee surgery.

Methods

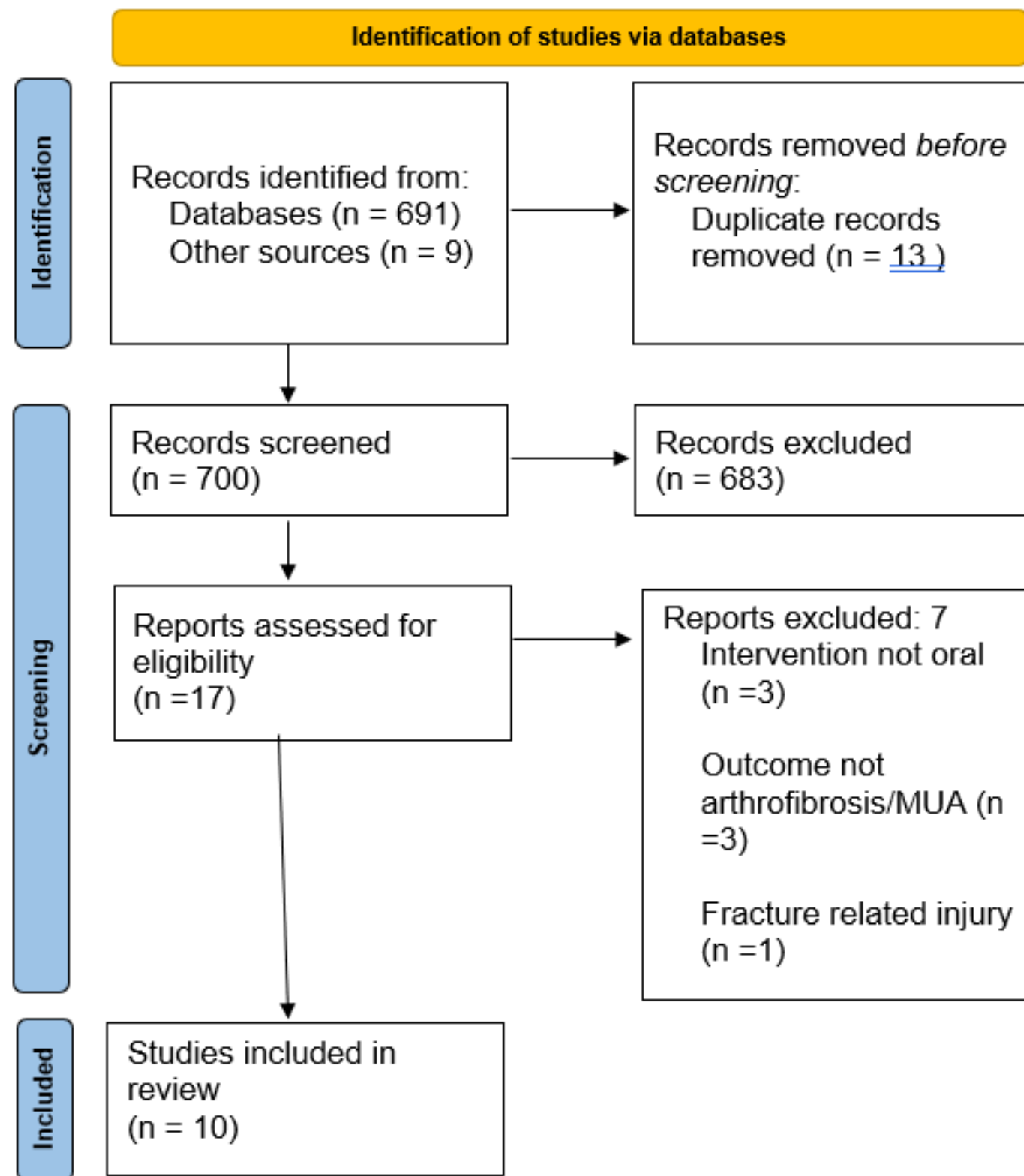
- Search of MEDLINE (OVID), EMBASE, CENTRAL performed (24/6/2024).
- Two reviewers independently screen
- Inclusion criteria: Any peer-reviewed published article where patients had any form of knee surgery and taking oral medications during this period, and which reported post-operative stiffness/arthrofibrosis/manipulation under anaesthetic.
- Exclusion criteria: Fracture related surgery, review articles, abstracts, conference reports, letters to the editor, single case reports, animal studies, cadaveric studies.



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Study	Study type	Population	Sample Size	Interventions	Outcome measure
Albright et al [7]	Retrospective	TKR	82,065	ARBs	MUA rate, rate of arthroscopic lysis of adhesions (ALA)
Arraut et al [8]	Retrospective	TKR	170	ARBs	MUA rate
Walton et al [9]	Retrospective	TKR	874	Anticoagulants	MUA rate
Gu et al [10]	Retrospective	ACLR	216,147	Anticoagulants	MUA rate
Kahlenberg et al [11]	Retrospective	TKR	32,320	Anticoagulants	MUA rate within 6 months
Premkumar et al [12]	Retrospective	TKR	101,366	ARBs, NSAIDs, HMG-COA Reductase inhibitors, COX-2 Inhibitors	MUA rate within 3 months
Rana et al [13]	Retrospective	TKR	51,572	ARBs	MUA rate within 1 year
Salmons et al [14]	Retrospective	TKR	9,771	ARBs, ACEi, Steroids, HMG-COA Reductase inhibitors	ROM<90 degrees persisting for >12 weeks
Shohat et al [15]	Retrospective	TKR	15,903	Anticoagulants	MUA within 6 months
Behrend et al [16]	RCT	TKR	95	Vitamin C	Rate of arthrofibrosis (either MUA or ALA)

Results

- 10 studies in final review
- 9 studies retrospective. 1 RCT
- 9 studies report on TKR cohort, 1 on ACLR
- Outcomes defining arthrofibrosis included need for MUA post surgery, rate of arthroscopic lysis of adhesion, and reduced ROM persisting >12 weeks.

Reduced Arthrofibrosis Rates	Increased Arthrofibrosis rates
Losartan OR 0.80 (P=0.007), OR 0.94 (P<0.023) and OR 0.86 (P<0.009) [12, 7, 13]	Warfarin OR 4.20 (P<0.001), OR 1.53 (P<0.001) and OR 1.17 (P=0.03) [9-11]
NSAIDs OR 0.67 (P=0.045) [14]	Factor Xa Inhibitors OR 1.96 (P<0.001) and OR 1.42 (P<0.001) [10-11]
Aspirin OR 0.64 (P<0.001) [15]	
COX-2 Inhibitors OR 0.88 (P=0.002) [12]	

Conclusion

Reduced Arthrofibrosis	Increased Arthrofibrosis
Losartan	Warfarin
NSAIDs	Factor Xa Inhibitors
Aspirin	
COX-2 Inhibitors	

- Lack of evidence on soft tissue knee cohort
- Lack of prospective studies

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