

Introduction

- A potentially life-threatening complication following this procedure is deep vein thrombosis (DVT).
- DVT prophylaxis can be achieved both mechanically (e.g. compression stockings) and chemically (e.g. aspirin, anticoagulants, and factor Xa inhibitors).
- Currently, there are no standardized guidelines for DVT prophylaxis following knee arthroscopy.
- This purpose of this study was to summarize how DVT prophylaxis is employed for patients who undergo knee arthroscopy and to provide a universal suggestion for DVT prophylaxis in the setting of knee arthroscopy.

Methods

- PubMed, Embase, and Cochrane Library were searched for studies published between 1998 and March 2023 according to PRISMA guidelines
- Studies were included if they evaluated DVT prophylaxis regimens in patients of any age who underwent knee arthroscopy.
- Studies not written in English, analyzed animals or cadavers, did not directly evaluate patients undergoing knee arthroscopy, or did not study DVT prophylaxis were excluded.

Results

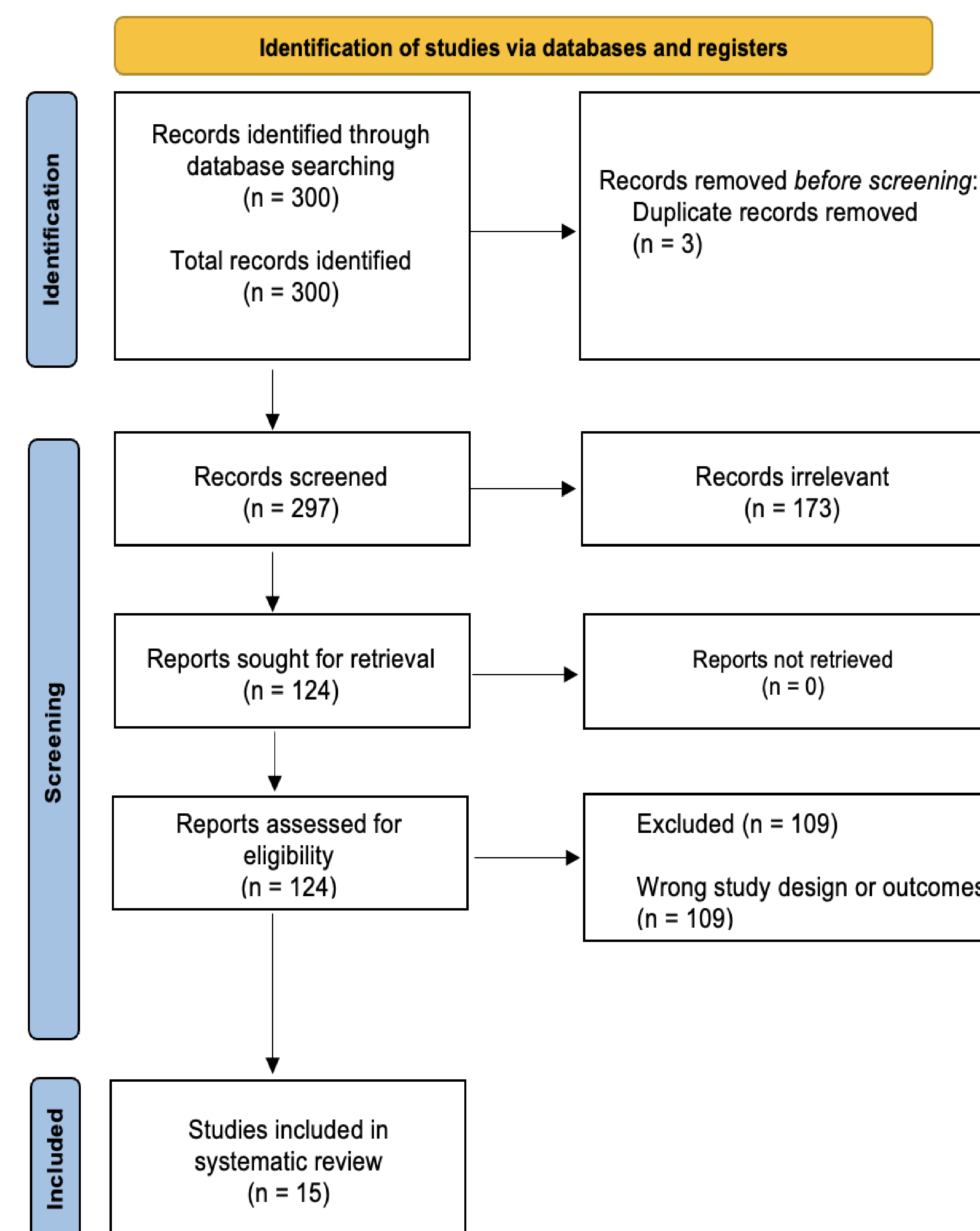
- The initial search identified 300 studies, 15 of which met inclusion criteria and were included in the study.
- These 15 studies examined methods including compression stockings (2 of 18; 11%), aspirin (1 of 18; 6%), factor Xa inhibitors (2 of 18; 11%), low molecular weight heparin (12 of 18; 67%), and neuromuscular electrical stimulation (1 of 18; 6%).

Results

- Overall, 7 of 15 (47%) studies recommended DVT prophylaxis in all patients, and 3 (20%) studies supported its use for high-risk patients.
- Five (33%) studies did not support DVT prophylaxis, citing a low incidence of post-operative DVT.
- DVT prophylaxis in the setting of knee arthroscopy can be accomplished with compression stockings, aspirin, factor Xa inhibitors, and low molecular weight heparin (LMWH), and DVT prophylaxis methods should be chosen based on the relative risk of each patient.

Figure 1. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) study

selection flow diagram. The numbers of screened, excluded, and included studies are shown.



Results

Table 1. Characteristics of studies included in the systematic review

Author	Year	Study Type	Number of Patients	Types of Procedures Included	DVT Prophylaxis Methods
Jetty et al. ¹¹	2016	Retrospective	120	Knee arthroscopy (not specified)	None
Camporese et al. ¹²	2008	RCT	1,317	Knee arthroscopy including ligament reconstruction	LMWH and Compression Stockings
Marlovits et al. ¹³	2007	RCT	175	Only ACL reconstruction	LMWH
van Adrichem et al. ¹⁴	2017	RCT	1,543	Knee arthroscopy without ligament reconstruction	LMWH
Hoppener et al. ¹⁵	2006	Prospective Non-Randomized	335	Knee arthroscopy without ligament reconstruction	None
Kaye et al. ¹⁶	2015	RCT	170	Knee arthroscopy including ligament reconstruction	Aspirin
Camporese et al. ¹⁷	2016	RCT	234	Knee arthroscopy including ligament reconstruction	Rivaroxaban
Yeo et al. ¹⁸	2016	Prospective Non-Randomized	1,410	Knee arthroscopy (not specified)	None
Schippinger et al. ¹⁹	1998	Prospective Non-Randomized	101	Knee arthroscopy without ligament reconstruction	LMWH
Xiong et al. ²⁰	2022	Retrospective	278	Only ACL reconstruction	Neuromuscular Electrical Stimulation (NMES)
Muñoz et al. ²¹	2014	Retrospective	467	Knee arthroscopy including ligament reconstruction	Rivaroxaban and Bemiparin
Chen et al. ²²	2017	Retrospective	128	Only PCL reconstruction	None
Adala et al. ²³	2011	Prospective Non-Randomized	112	Only ACL reconstruction	None
Dong et al. ²⁴	2015	Prospective Non-Randomized	282	Only ligament reconstruction	None
Wirth et al. ²⁵	2001	RCT	239	Knee arthroscopy including ligament reconstruction	LMWH

Abbreviations: DVT = deep vein thrombosis, RCT = randomized controlled trial, LMWH = low molecular weight heparin, ACL = anterior cruciate ligament, NMES = Neuromuscular Electrical Stimulation, PCL = posterior cruciate ligament

Conclusion

- Compression stockings, aspirin, factor Xa inhibitors, and low molecular weight heparin (LMWH) were identified as possible DVT prophylaxis methods for patients undergoing knee arthroscopy. For high-risk patients, factor Xa inhibitors and LMWH drugs are a safe and effective way to prevent the development of a DVT.