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李氏大藥廠
Department of medicine and information
医学及信息部

医学信息速递
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传递最有价值的医学信息

【第八期】医学信息速递

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“纵观低分子肝素骨科抗凝大势”
-立迈青骨科抗凝指南解读

医学及信息部

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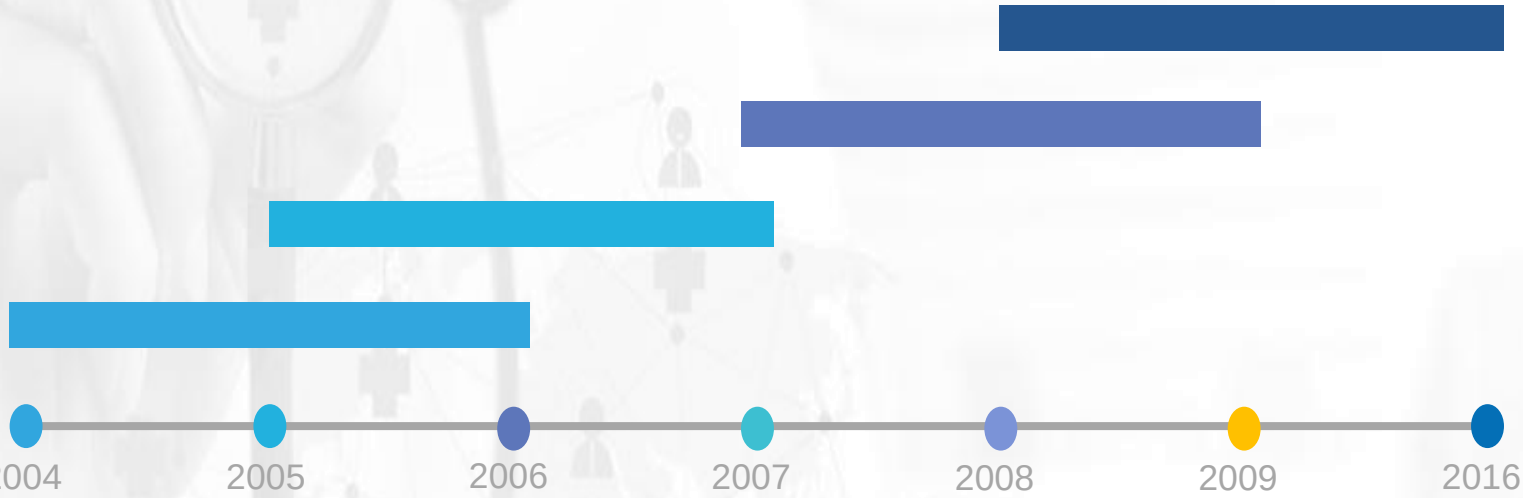
前言

静脉血栓栓塞（Venous Thromboembolism ,VTE），包括深静脉血栓形成（Deep Venous Thrombosis ,DVT）和肺栓塞（Pulmonary Thromboembolism ,PE），是骨科手术十分常见的并发症，尤其多见于下肢手术或创伤。可能导致死亡及静脉栓塞后综合征等严重后果，但由于不少病人临床表现隐匿，VTE 常被临床医生所忽视。

中国骨科抗凝历程

国外对下肢手术后进行正规的 VTE 预防已有 20 多年的历史，并取得了明确的效果。我国骨科大手术后 VTE 的发生率与西方国家相当，但目前国内对 VTE 防治工作的重视程度远低于国外。



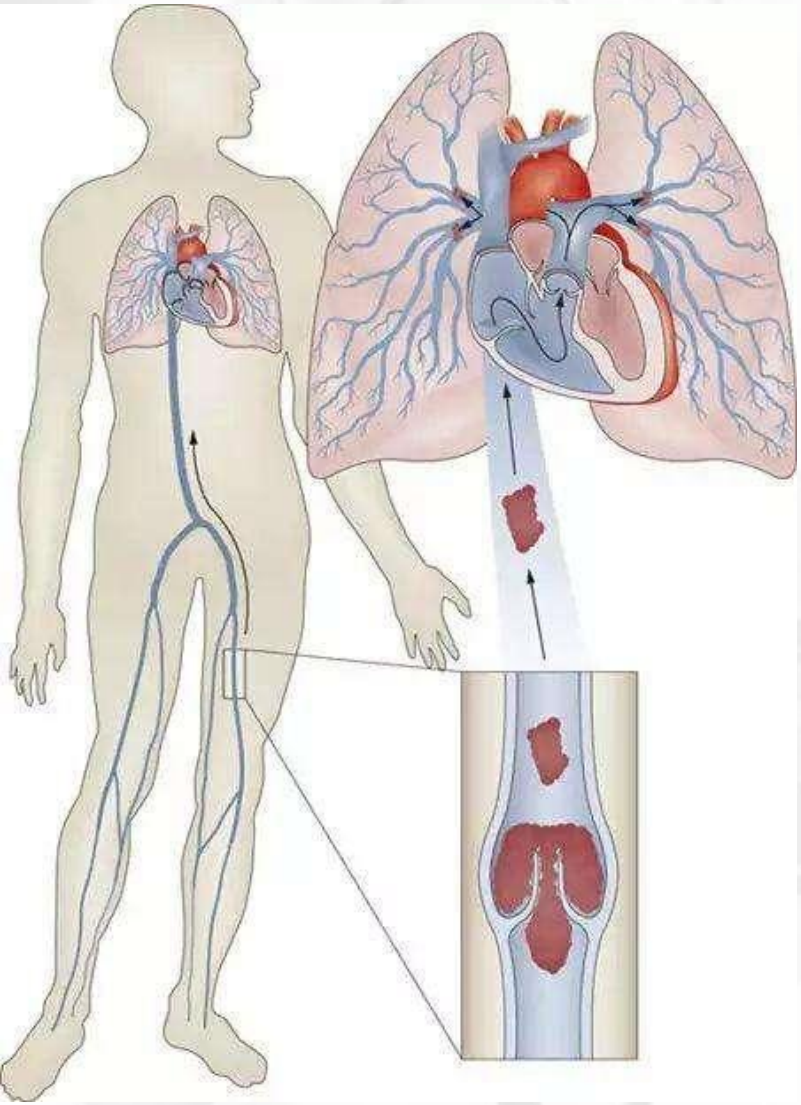
2004年 中华医学会骨科学分会组织50位骨科专家对骨科大手术后DVT发生率、危险因素、预防策略，等16个子课题进行调查研究……

2006年 发表“预防骨科大手术后深静脉血栓形成的专家建议“

2009版《中国骨科大手术静脉血栓栓塞症预防指南》

2016版《中国骨科大手术静脉血栓栓塞症预防指南》

预防骨科术后 VTE 的发生仍需努力



戴尅戎院士说：

在改善我国骨科大手术后 VTE 发生率方面，我们还处有很多事情要做：

1.**骨科医生的术后抗凝意识需加强**

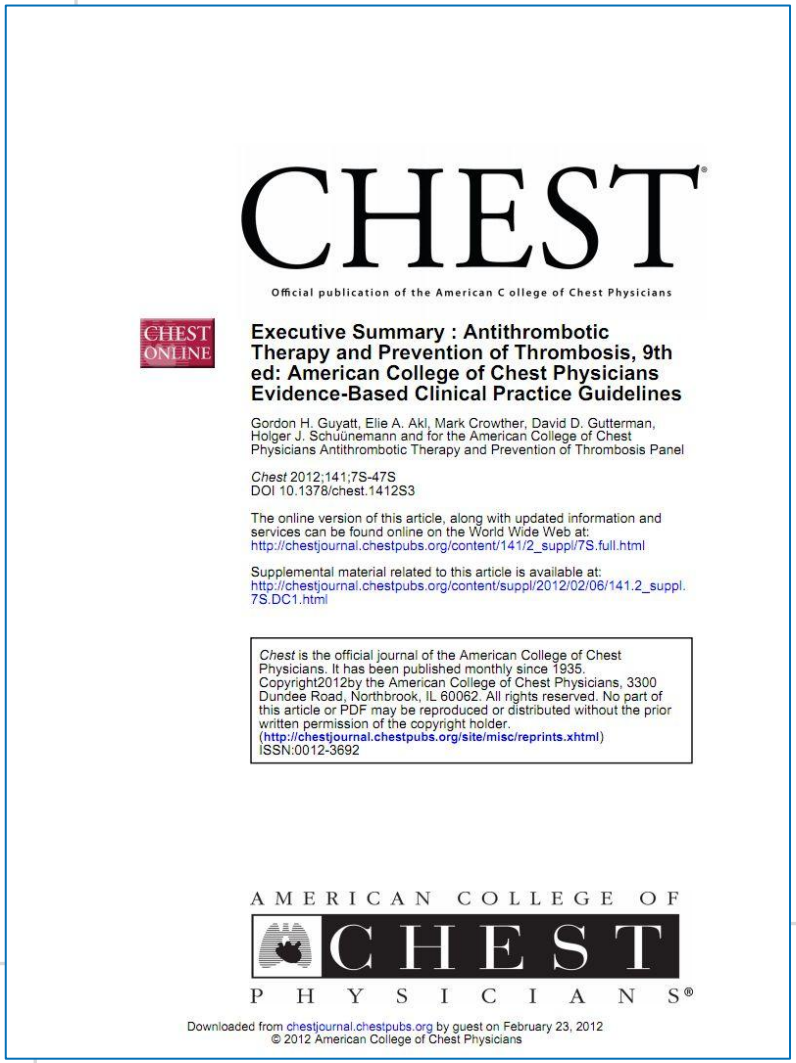
除非是有禁忌症，比如说中风等，骨科特别是下肢大术后的患者是建议 100% 使用抗凝药物的。

2.**指南推荐药物预防为主要措施**

65 岁以上的老人、手术时间长于 1 小时的病人、术后不能活动的、患恶性肿瘤的、服用过激素的、有脑血栓或下肢静脉血栓史的、放了动脉支架后停药的病人等等，VTE发生风险更高，更应重视预防 VTE。

3.**抗凝药物使用的最佳时机时**

术后首次抗凝应该在术后 12 至 24 小时之间，髋部手术的高危患者应将抗凝治疗的时间延长到术后35 天。对于这类病人，无需进行血凝监测和调整剂量的口服药物，具有更大的优越性。



CHEST

Official publication of the American College of Chest Physicians

CHEST ONLINE

Executive Summary : Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines

Gordon H. Guyatt, Elie A. Akl, Mark Crowther, David D. Gutterman, Holger J. Schuünemann and for the American College of Chest Physicians Antithrombotic Therapy and Prevention of Thrombosis Panel

Chest 2012;141;7S-47S
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Supplemental material related to this article is available at:
http://chestjournal.chestpubs.org/content/suppl/2012/02/06/141.2_suppl.7S.DC1.html

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美国胸科医师协会抗栓与血栓预防指南第9版（ACCP9）重要摘要

2.3.1. In patients undergoing THA or TKA, irrespective of the concomitant use of an IPCD or length of treatment, we suggest the use of LMWH in preference to the other agents we have recommended as alternatives: fondaparinux, apixaban, dabigatran, rivaroxaban, LDUH (all Grade 2B), **adjusted-dose VKA, or aspirin** (all Grade 2C).

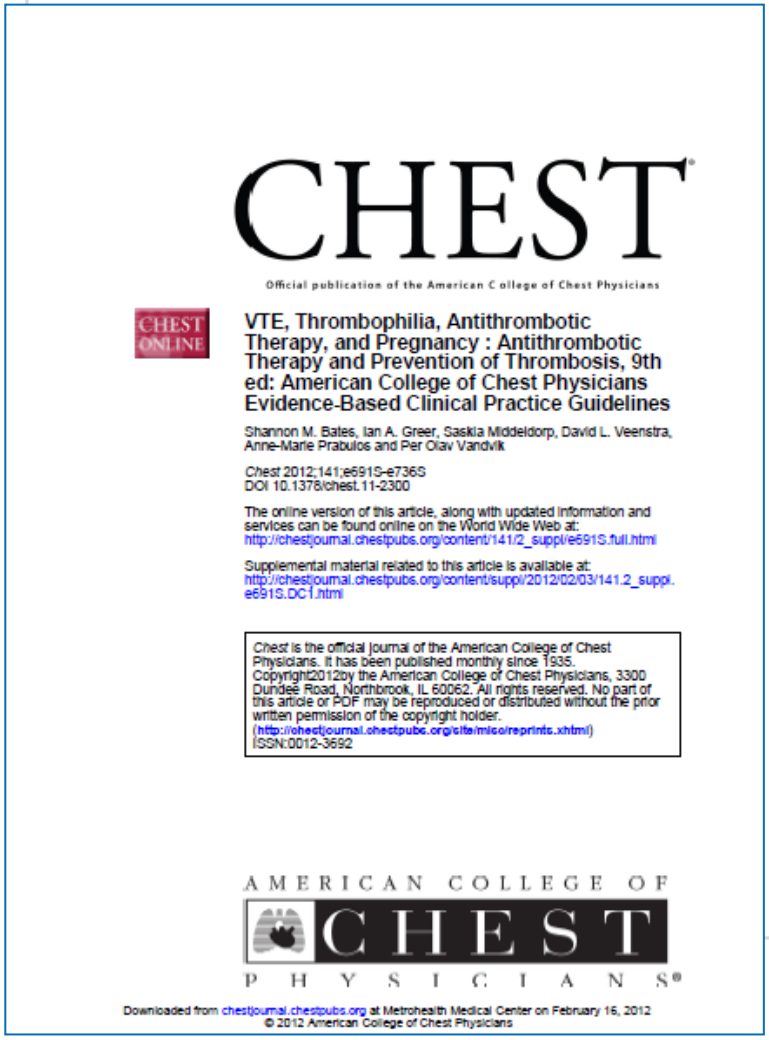
Remarks: If started preoperatively, we suggest administering LMWH ≥ 12 h before surgery. Patients who place a high value on avoiding the inconvenience of daily injections with LMWH and a low value on the limitations of alternative agents are likely to choose an alternative agent. Limitations of alternative agents include the possibility of increased bleeding (which may occur with fondaparinux, rivaroxaban, and VKA), possible decreased efficacy (LDUH, VKA, aspirin, and IPCD alone), and lack of long-term safety data (apixaban, dabigatran, and rivaroxaban). Furthermore, patients who place a high value on avoiding bleeding complications and a low value on its inconvenience are likely to choose an IPCD over the drug options.

2.3.2. In patients undergoing HFS, irrespective of the concomitant use of an IPCD or length of treatment, we suggest the use of LMWH in preference to the other agents we have recommended as alternatives: fondaparinux, LDUH (Grade 2B), **adjusted-dose VKA, or aspirin** (all Grade 2C).

2.4. For patients undergoing major orthopedic surgery, we suggest extending thromboprophylaxis in the outpatient period for up to 35 days from the day of surgery rather than for only 10 to 14 days (Grade 2B).

•对于骨科大手术推荐的预防性抗栓药物，推荐使用低分子量肝素(Grade 2C/2B)。

•人工髋关节置换THA或人工全膝关节置换TKA和髋部骨折手术HFS患者推荐低分子量肝素优于其他替代药物。建议延长血栓预防时间至到术后35天(Grade 2B) 。



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Official publication of the American College of Chest Physicians

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VTE, Thrombophilia, Antithrombotic Therapy, and Pregnancy : Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines

Shannon M. Bates, Ian A. Greer, Saskia Middeldorp, David L. Veenstra, Anne-Marie Prabulos and Per Olav Vandvik

Chest 2012;141;e691S-e736S
DOI 10.1378/chest.11-2300

The online version of this article, along with updated information and services can be found online on the World Wide Web at:
http://chestjournal.chestpubs.org/content/141/2_suppl/e691S.full.html

Supplemental material related to this article is available at:
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Results: We recommend low-molecular-weight heparin for the prevention and treatment of VTE in pregnant women instead of unfractionated heparin (Grade 1B). For pregnant women with acute VTE, we suggest that anticoagulants be continued for at least 6 weeks postpartum (for a minimum duration of therapy of 3 months) compared with shorter durations of treatment (Grade 2C). For women who fulfill the laboratory criteria for antiphospholipid antibody (APLA) syndrome and meet the clinical APLA criteria based on a history of three or more pregnancy losses, we recommend antepartum administration of prophylactic or intermediate-dose unfractionated heparin or prophylactic low-molecular-weight heparin combined with low-dose aspirin (75-100 mg/d) over no treatment (Grade 1B). For women with inherited thrombophilia and a history of pregnancy complications, we suggest not to use antithrombotic prophylaxis (Grade 2C). For women with two or more miscarriages but without APLA or thrombophilia, we recommend against antithrombotic prophylaxis (Grade 1B).

Conclusions: Most recommendations in this guideline are based on observational studies and extrapolation from other populations. There is an urgent need for appropriately designed studies in this population.

CHEST 2012; 141(2)(Suppl):e691S–e736S

ACCP9为妊娠期血栓性疾病预防、治疗和长期管理提供最新、最全面综合的建议：推荐低分子量肝素替代普通肝素用于妊娠期的VTE预防和治疗(Grade 1B) 。

低分子肝素LMWH-骨科抗凝指南首推药物

疾病	抗凝指南/共识	LMWH预防DVT/PE推荐方案	LMWH预防DVT/PE疗程	推荐级别
人工全髋关节置换术	中国骨科大手术静脉血栓栓塞症预防指南（2016年）	术后12h皮下注射预防剂量的LMWH	最少10-14d，建议延长至35d	无推荐级别
人工全膝关节置换术	中国骨科大手术静脉血栓栓塞症预防指南（2016年）	术后12h皮下注射预防剂量的LMWH	最少10-14d	无推荐级别
髋部骨折术	中国骨科大手术静脉血栓栓塞症预防指南（2016年）	伤后12h内手术患者：术后12h皮下注射预防剂量的LMWH	最少10-14d	无推荐级别
		延迟手术患者：自入院之日开始综合预防，术后12h皮下注射预防剂量的LMWH	最少10-14d	
髋、膝关节置换术患者合并心血管疾病	中国髋、膝关节置换术加速康复-合并心血管疾病患者围术期血栓管理专家共识（2016年）	桥接抗凝：术前5d停用华法林或抗血小板药物，给予治疗剂量的LMWH皮下注射，术前12-24h停止LMWH	术后继续应用治疗剂量的LMWH1-2天	首选推荐
骨肿瘤	肺血栓栓塞症诊治与预防指南（2018年）	原发性骨肿瘤手术患者是VTE的极高危人群（Caprini血栓风险因素评估），伴有肿瘤的下肢DVT/PTE的治疗推荐LMWH优于其他替代药物。	3-6个月	2B
脊柱骨科	中国脊柱手术加速康复-围术期管理策略专家共识（2017年）	高危患者在无出血风险情况下应联合药物预防措施（主要为LMWH），于术后24-36h开始应用	截瘫患者预防时间持续到伤后3个月	首选推荐
创伤骨科	创伤骨科患者深静脉血栓形成筛查与治疗的专家共识（2013年）	术前确诊DVT的治疗：如无需急诊或限期手术，对于无抗凝禁忌者给予抗凝治疗4-6周后手术。		无推荐级别
		术后确诊DVT的治疗：抗凝治疗3个月。		

低分子肝素在骨科大手术的高效抗凝作用

不采取预防措施的人工髋关节置换THA患者术后下肢DVT发生率是45-70%，人工全膝关节置换TKA术后下肢DVT发生率高达84%。

附表1：文献报道VTE预防后，中国THA和TKA的DVT、PTE的发生率

无预防措施的髋部骨折患者静脉造影近端DVT的检出率高达27%采取正确的预防措施后DVT的发生率可减少60%。

附表2：文献报道VTE预防后，中国HFS的DVT、PTE的发生率。

中华医学会骨科学分会.中国骨科大手术静脉血栓栓塞症预防指南.中华骨科杂志，2016,36（2）：65-71.


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