ICM VTE Trauma

1 - What is the most optimal VTE prophylaxis in patients with multiple orthopaedic injuries?

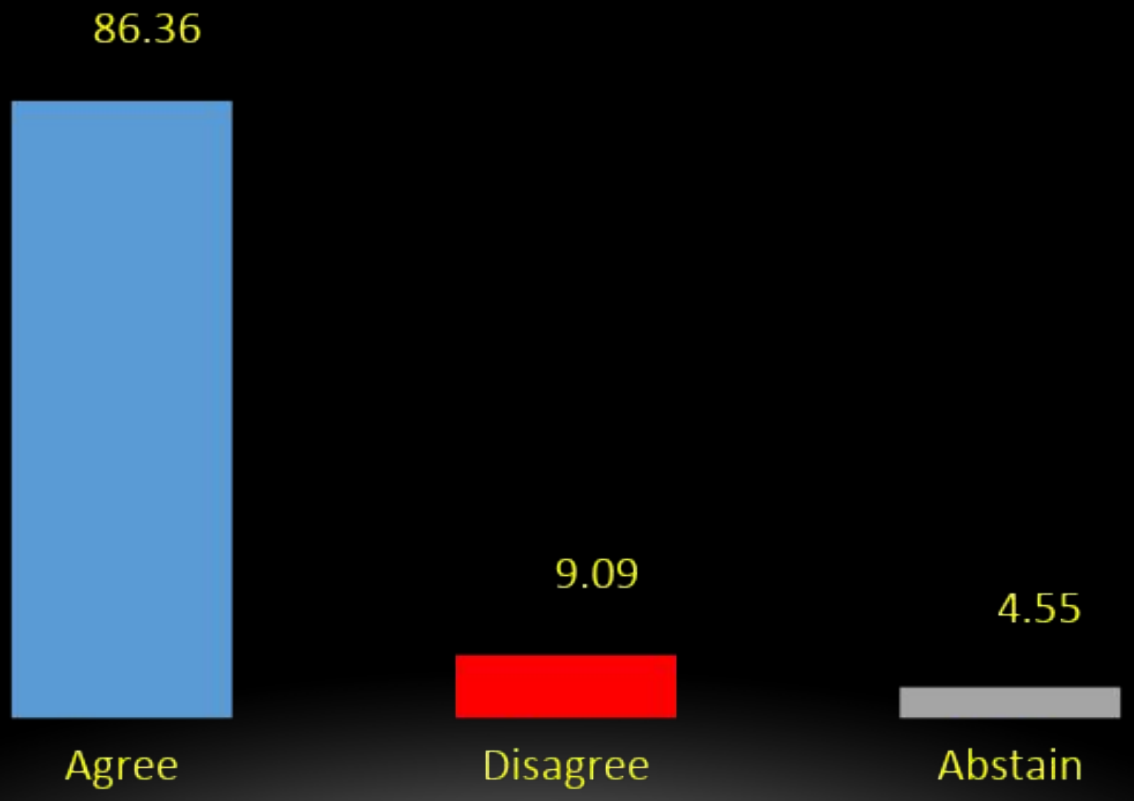
Response/Recommendation: Although multiple forms of prophylaxis against venous thromboembolism (VTE) with variable effectiveness are available for patients with multiple orthopedic injuries, low-molecular-weight heparin (LMWH) is considered the most optimal choice based on available literature.

Strength of Recommendation: Acceptable.

Abdulaziz N. Aljurayyan, Ahmed A. Alabdali, Ryan K. Harrison

ICM VTE Trauma

1 - What is the most optimal VTE prophylaxis in patients with multiple orthopaedic injuries?



(Strong Consensus)

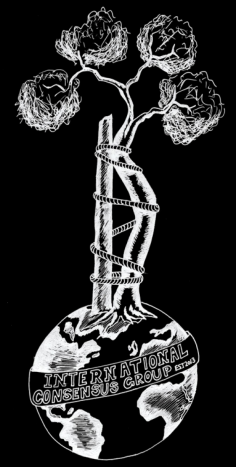
ICM VTE Trauma

2 - What is the optimal VTE prophylaxis for polytrauma patients with both fractures and visceral injuries?

Response/Recommendation: In patients with fractures and visceral injuries, anticoagulant-based thromboprophylaxis should be commenced as soon as bleeding risk allows. Bilateral mechanical thromboprophylaxis, if possible, should be administered to patients who are at high bleeding risk.

Strength of Recommendation: Strong.

William H. Geerts, Abdulaziz N. Aljurayyan, Malin S. Carling



ICM VTE Trauma

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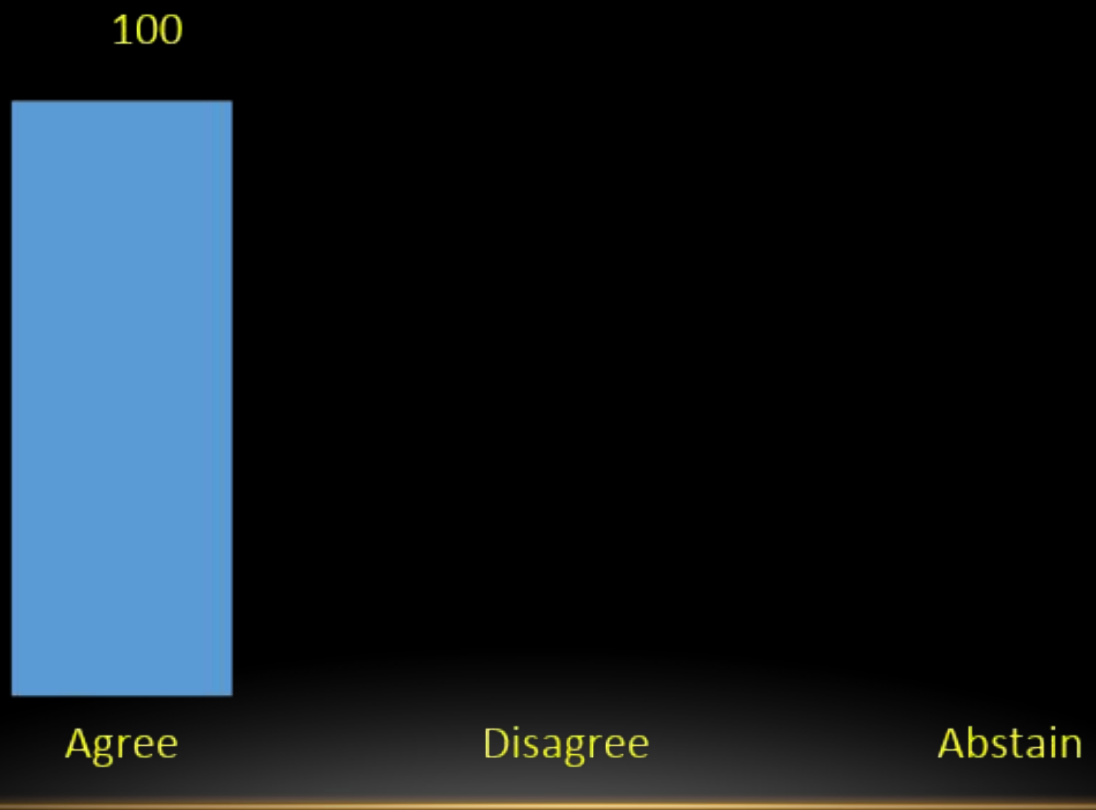


(Unanimous Strong Consensus)

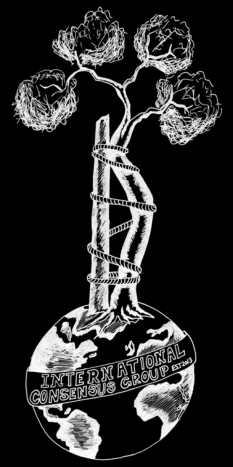
ICM VTE Trauma

3 - What is the best way to determine acute blood loss and predict operative blood loss in trauma patients with orthopaedic injuries?

Response/Recommendation: Multiple factors have been studied to assess blood loss in acute trauma patients, and to predict the need for transfusion. Adequate risk stratification involves consideration of the patient's vital signs, laboratory data, injuries, and medical history.

Strength of Recommendation: Low.

Justin E. Kleiner, Paul Tornetta III



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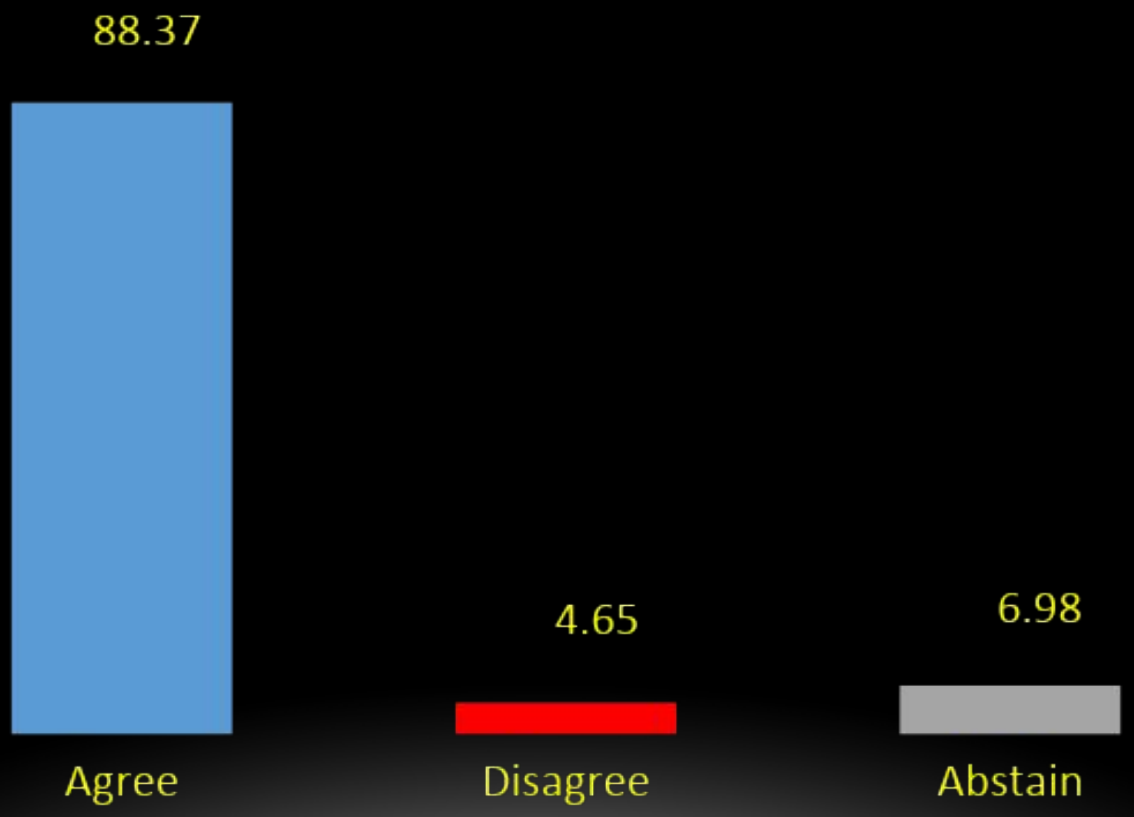


(Strong Consensus)

ICM VTE Trauma

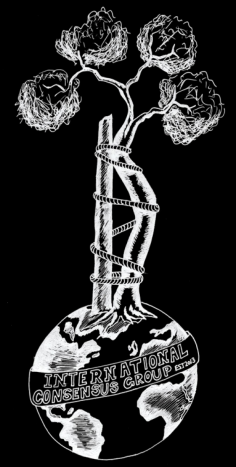
4 - What is the optimal management of patients on antiplatelet and/or anticoagulation presenting with acute lower extremity trauma and needing surgery?

Response/Recommendation: The optimal management of patients on antiplatelets and/or anticoagulants presenting with acute lower extremity trauma and needing surgery should involve a risk-benefit assessment weighing the risk of bleeding against the risk of thrombosis. Depending on the degree of urgency, extent of trauma and patient's coagulation status, the optimal approach may involve postponing the procedure and monitoring the coagulation status, perioperative bridging therapy, or acute reversal of anticoagulation.

Most studies recommend that patients receiving aspirin (ASA) can undergo surgery safely without delay. In patients taking oral anticoagulants, coagulation tests should be per- formed. If surgery cannot be delayed, anticoagulant reversal agents should be administered. Recent literature has suggested that the use of reversal agents does not lead to adverse out- comes following lower extremity trauma surgery. In addition, early surgical treatment of hip fractures despite anticoagulation may be prudent in a subgroup of patients.

Strength of Recommendation: Limited.

Dragan K. Radoičić, Francisco Chana-Rodríguez, Antonio Benjumea-Carrasco, Jesús Gómez-Vallejo



ICM VTE Trauma

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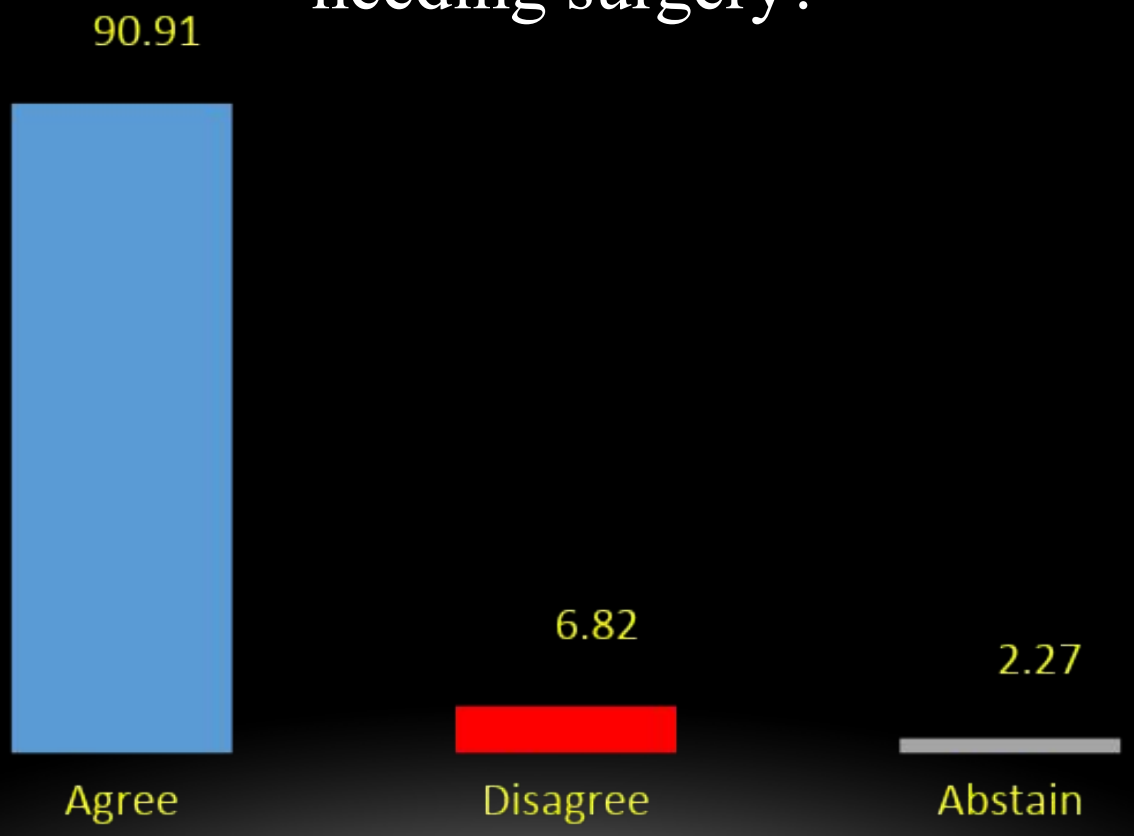


(Strong Consensus)

ICM VTE Trauma

5 - Concerning VTE risk, which surgeries can be considered major and which surgeries can be considered non-major in orthopaedic trauma?

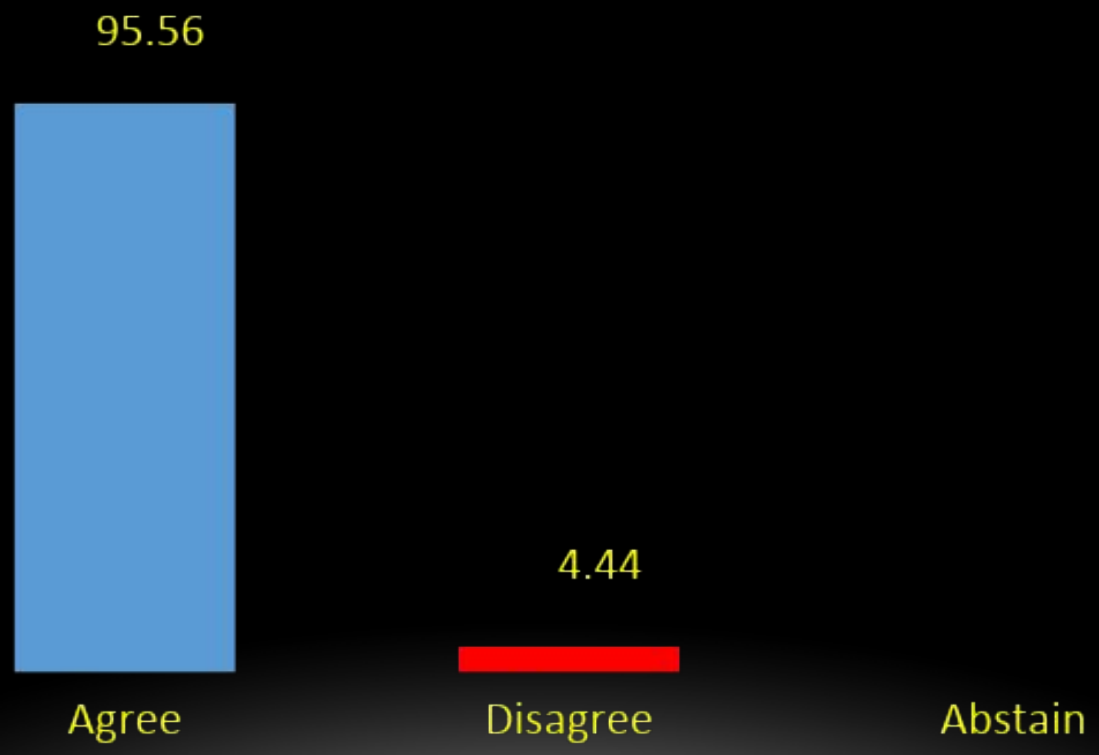
Response/Recommendation: Surgical procedures in the upper extremity and distal to the ankle can be considered non- major. The risk of venous thromboembolism (VTE) increases in the lower limb from the distal leg (or ankle) to the pelvis, with higher risk associated with more proximal surgeries. In addition to location of surgery, length of surgery and expected post-operative mobility must be considered.

Strength of Recommendation: Moderate.

Justin E. Kleiner, Marc F. Swiontkowski, Paul Tornetta III

ICM VTE Trauma

5 - Concerning VTE risk, which surgeries can be considered major and which surgeries can be considered non-major in orthopaedic trauma?



(Strong Consensus)

ICM VTE Trauma

6 - Is routine VTE prophylaxis indicated in patients with a single lower extremity fracture who do not require surgery?

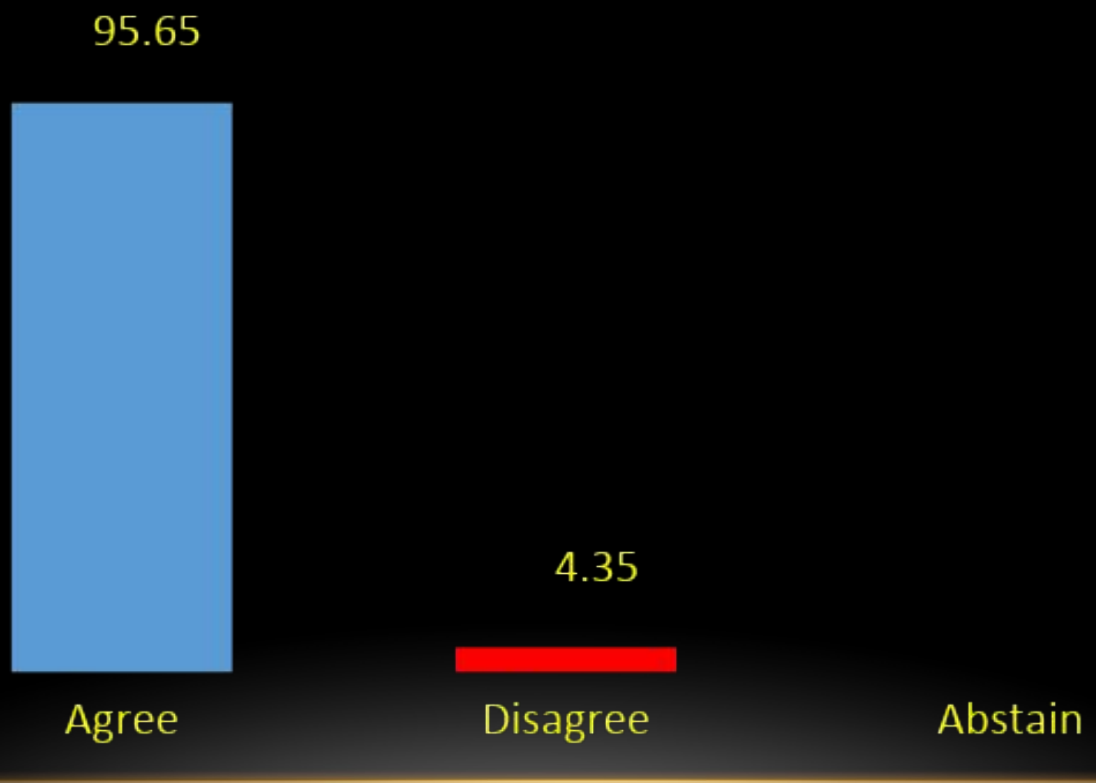
Response/Recommendation: Routine venous thromboembolism (VTE) prophylaxis is not routinely needed in patients with a single lower extremity (LE) fracture who do not require surgery. The need for VTE prophylaxis in patients with isolated LE fracture is restricted to high-risk individuals with significant medical comorbidities, severely limited activity or other coagulopathic risk factors.

Strength of Recommendation: Moderate.

Abtin Alvand, Raja Bhaskara Rajasekaran, Marc F. Swiontkowski

ICM VTE Trauma

6 - Is routine VTE prophylaxis indicated in patients with a single lower extremity fracture who do not require surgery?



(Strong Consensus)

ICM VTE Trauma

7 - Is routine VTE prophylaxis indicated in patients with immobilization of the lower extremity (e.g., casting) without surgery?

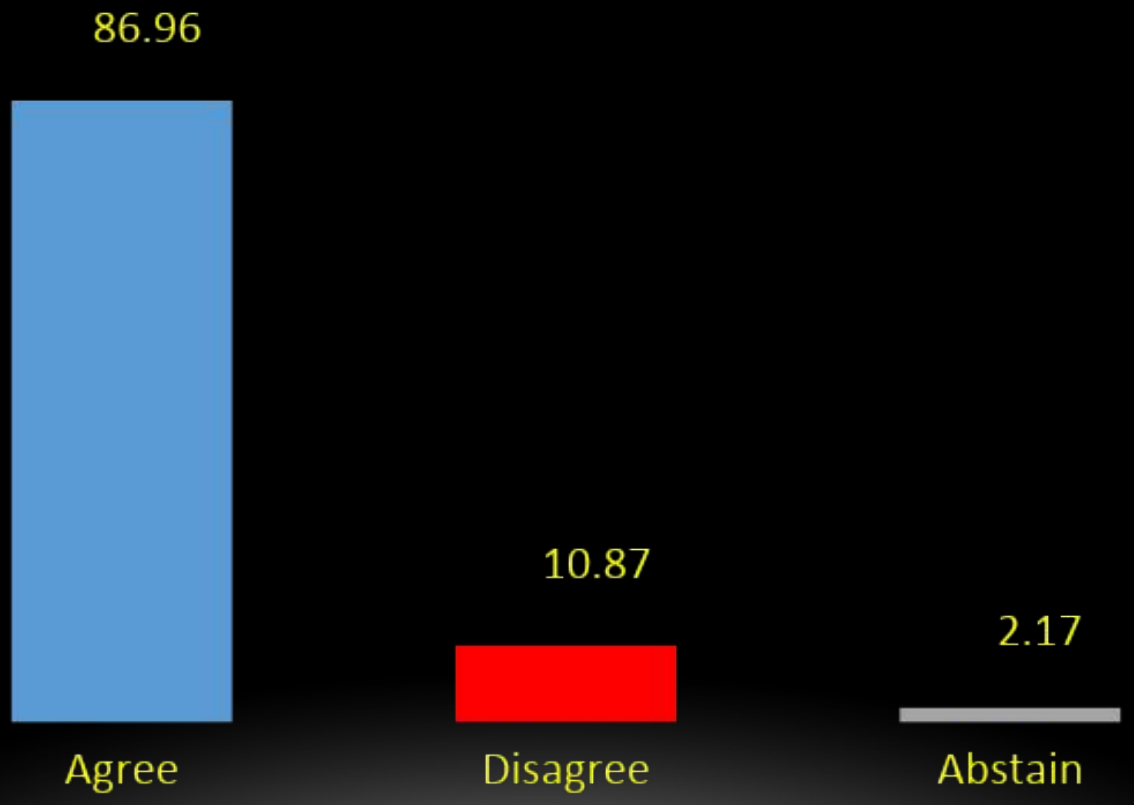
Response/Recommendation: Routine venous thromboembolic (VTE) prophylaxis is not indicated in patients with immobilization of the lower extremity.

Strength of Recommendation: Moderate.

Banne Nemeth, Francisco Palma-Arjona,
Alberto D. Delgado-Martinez, James W.M. Kigera

ICM VTE Trauma

7 - Is routine VTE prophylaxis indicated in patients with immobilization of the lower extremity (e.g., casting) without surgery?



(Strong Consensus)

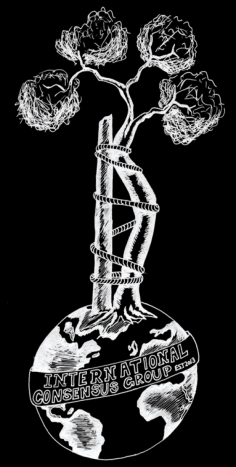
ICM VTE Trauma

8 - Does the duration of immobilization of patients with lower extremity injuries influence the choice of VTE prophylaxis?

Response/Recommendation: Duration of immobilization in patients with lower extremity injuries does not influence the choice of venous thromboembolism (VTE) prophylaxis.

Strength of Recommendation: Moderate.

Aydin Gahramanov, Saad Tarabichi, Charles-Marc Samama



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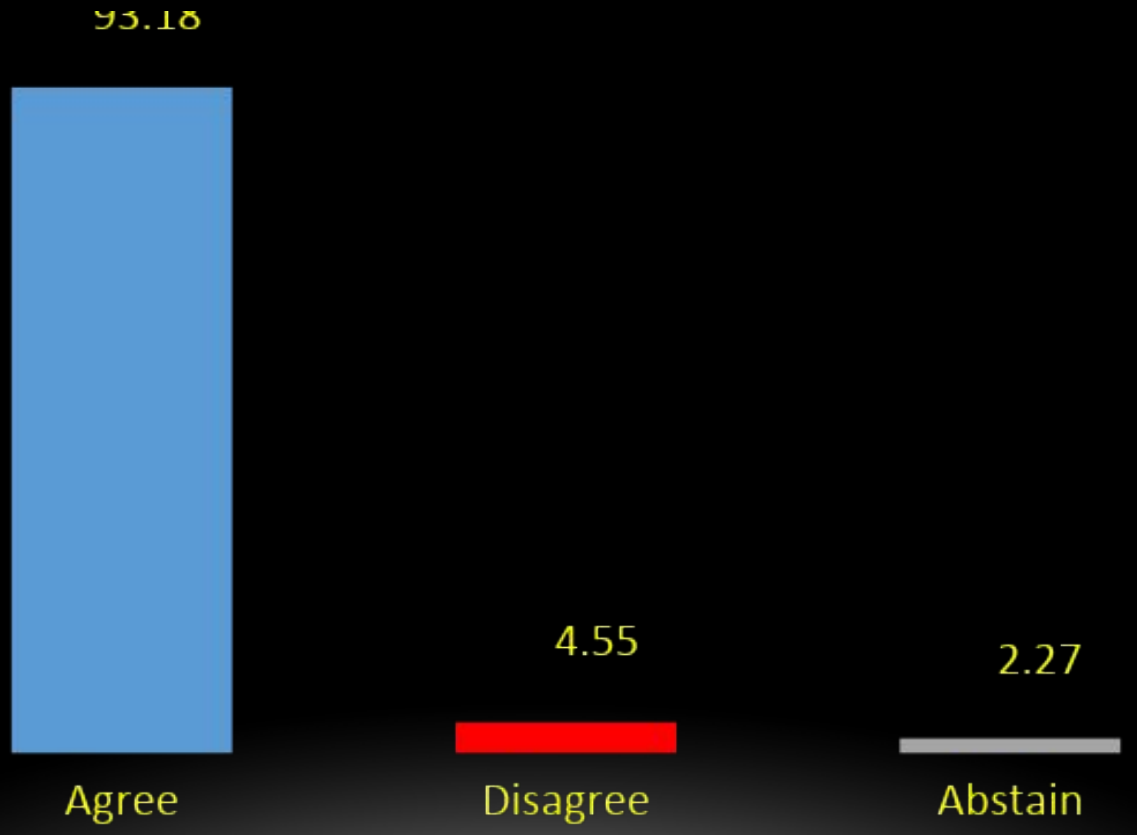


(Strong Consensus)

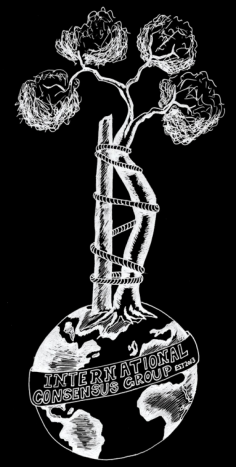
ICM VTE Trauma

9 - What is the most optimal VTE prophylaxis for patients undergoing internal fixation of a hip fracture?

Response/Recommendation: Mechanical and pharmacological venous thromboembolism (VTE) prophylaxes are advised for patients undergoing internal fixation of a hip fracture, following an individualized risk assessment. In the setting of surgical delays, preoperative pharmacological prophylaxis should be considered. Pharmacological thromboprophylaxis should continue throughout the persistent postoperative prothrombotic state, commencing 12 hours post wound closure, and continuing for at least 28 days.

Strength of Recommendation: Moderate.

Andrew J. Hughes, Dheenadhayalan Jayaramaraju, Svetlana A. Bozhkova, Aleksandar R. Lešić, Nagashree Vasudeva, Alina Kasimova, Velmurugesan P. Sundaram, Jaimo Ahn, Chad A. Krueger



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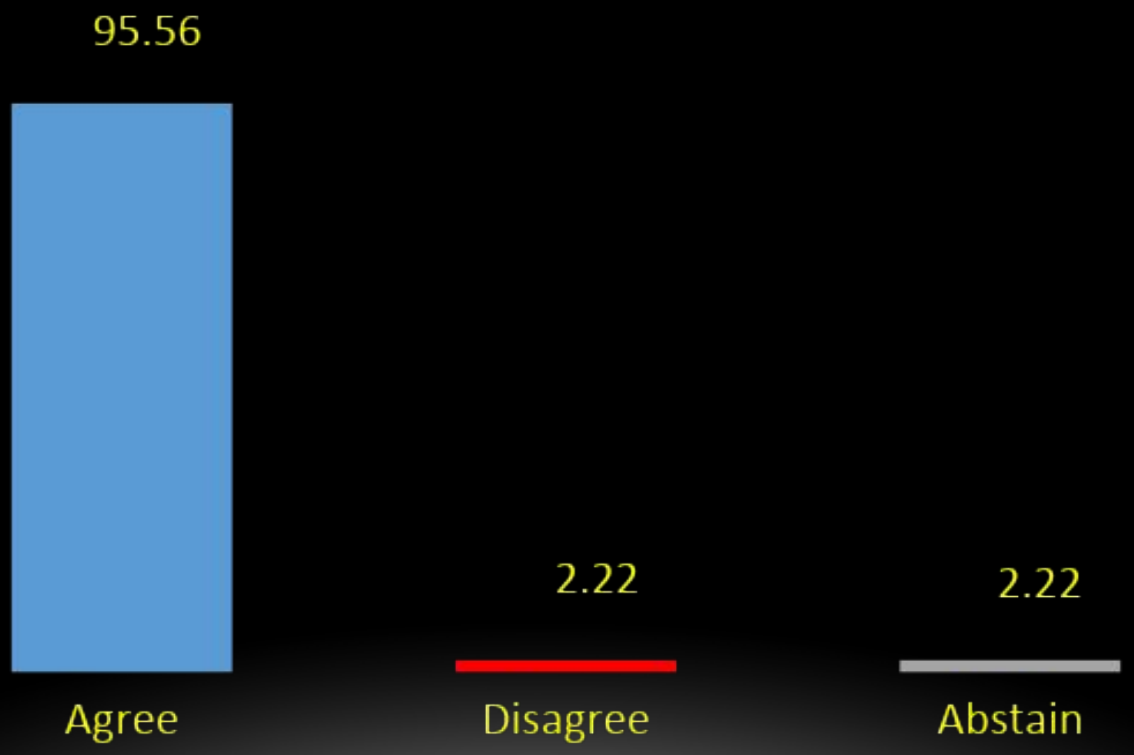

(Strong Consensus)

ICM VTE Trauma

10 - What is the optimal VTE prophylaxis for patients undergoing arthroplasty (hemiarthroplasty or total hip arthroplasty) for patients with hip fracture?

Response/Recommendation: Hip fracture patients treated with arthroplasty are at higher risk of venous thromboembolism (VTE) and should receive some form of chemo- thromboprophylaxis. Studies demonstrate that aspirin (ASA) is an effective agent for prevention of VTE in this patient's population.

Strength of Recommendation: Strong.

Stephen L. Kates, Eduardo A. Salvati, Lars G. Johnsen

ICM VTE Trauma

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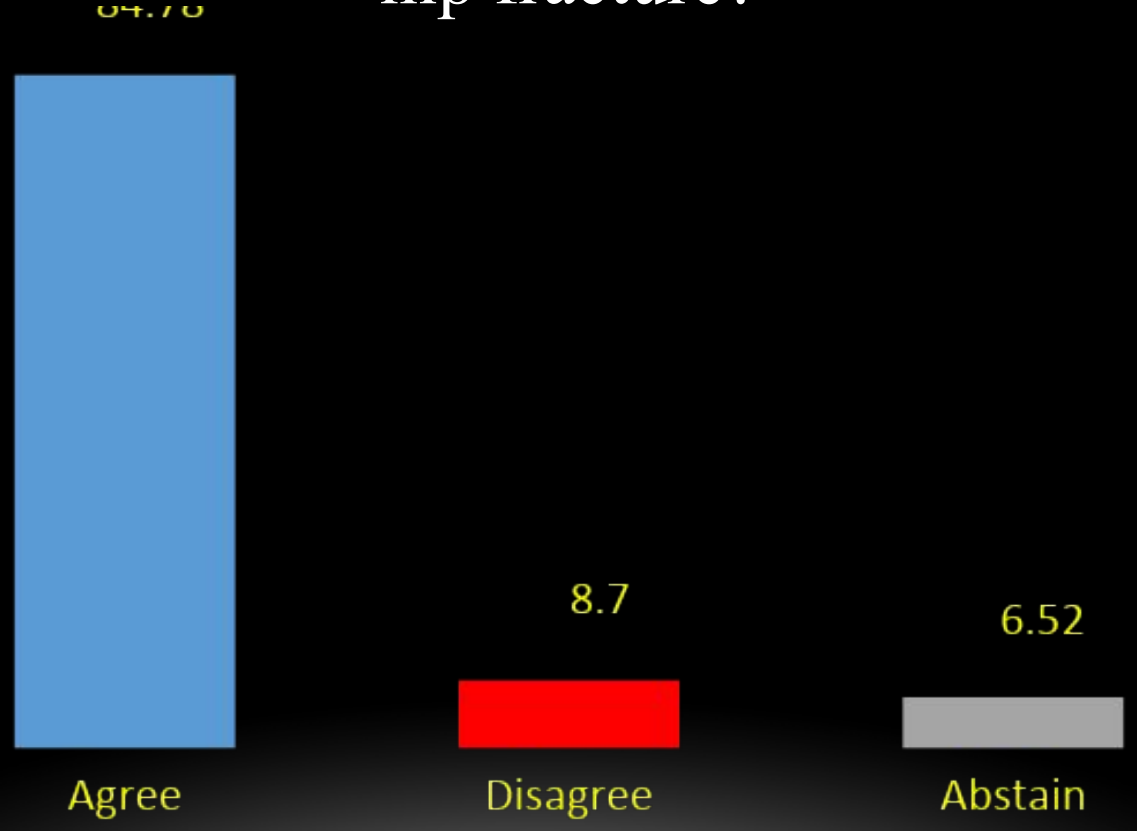


(Strong Consensus)

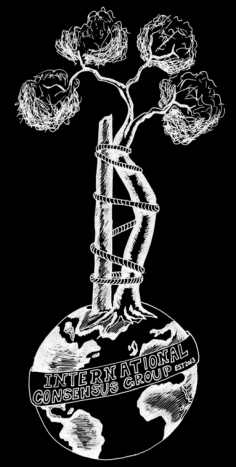
ICM VTE Trauma

11 - Is routine VTE prophylaxis required for patients with fragility fracture of the pelvis or lower extremity?

Response/Recommendation: Chemoprophylaxis against venous thromboembolism (VTE) is recommended for patients with a fragility fracture of the pelvis or lower extremity as long as the risk of VTE outweighs the risk of bleeding given other medical comorbidities. The use of intermittent pneumatic compression (IPC) devices should be considered for those who cannot receive chemoprophylaxis.

Strength of Recommendation: Low.

Taylor D'Amore, Guillermo Araujo, Iván J. Salce, Nigel D. Rossiter



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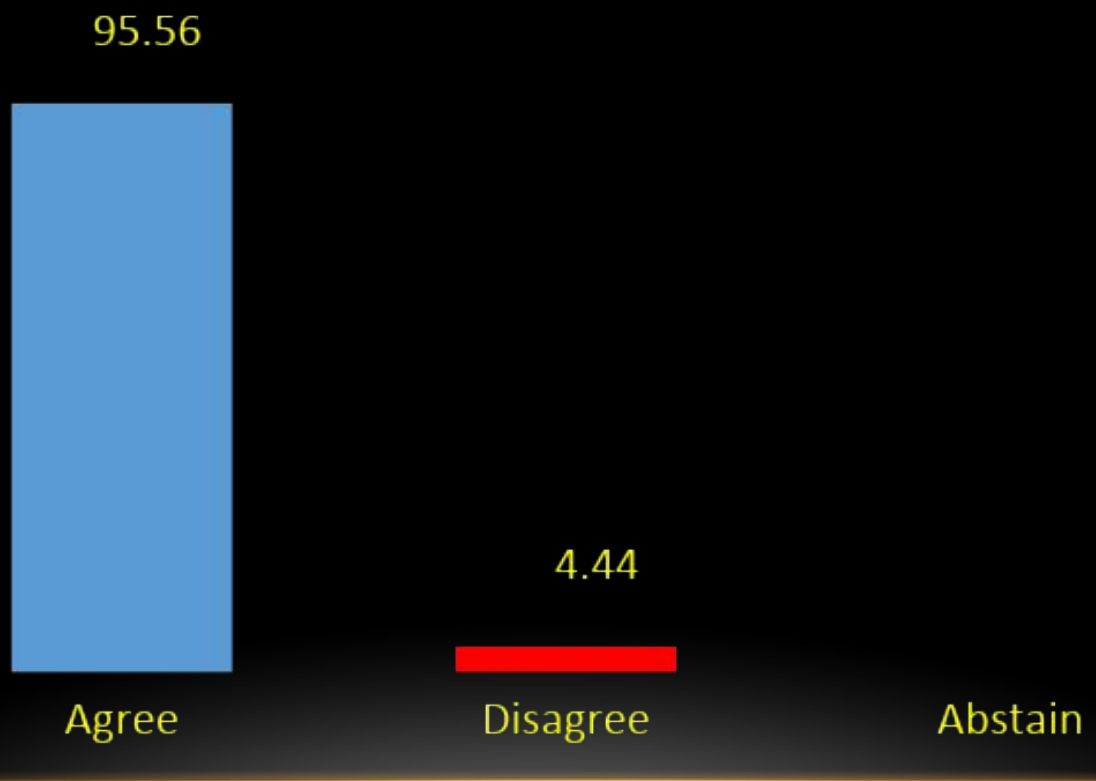


(Strong Consensus)

ICM VTE Trauma

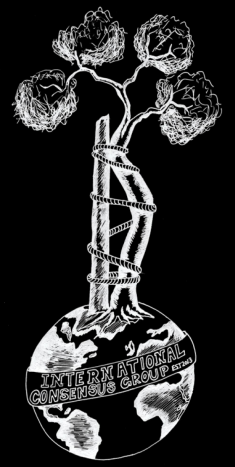
12 - Should VTE prophylaxis be administered to patients with a hip fracture who do not undergo surgery?

Response/Recommendation: 1. For patients with a non- displaced hip-fracture not requiring surgery, a standard pro- phylactic regimen of either low-molecular-weight- heparin (LMWH), fondaparinux, low dose unfractionated heparin (LDUFH), adjusted-dose vitamin K antagonist (VKA) or aspirin (ASA) should be considered.

2. For patients with a displaced hip fracture who are treated conservatively, venous thromboembolism (VTE) pro- phylaxis should be considered in a similar fashion to hip-fracture surgery patients.

Strength of Recommendation: Limited.

Banne Nemeth, Clifford W. Colwell



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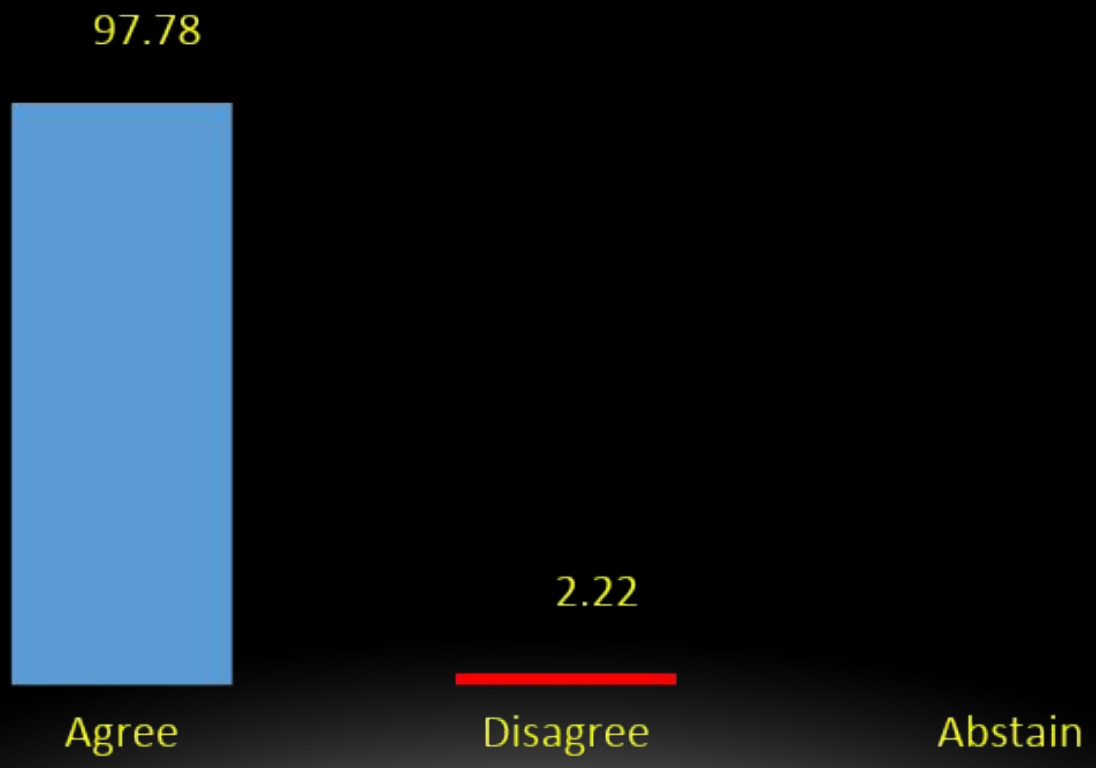


(Strong Consensus)

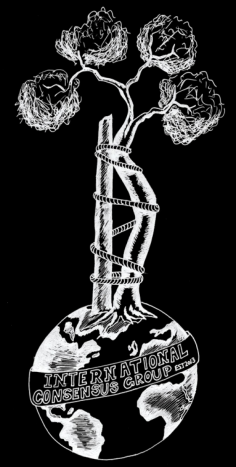
ICM VTE Trauma

13 - Is routine VTE prophylaxis needed for patients undergoing osteotomy around the knee?

Response/Recommendation: Routine use of mechanical and/or chemical thromboprophylaxis for patients undergoing osteotomy around the knee is recommended.

Strength of Recommendation: Moderate.

Yasushi Oshima, Hasan R. Mohammad, Tokifumi Majima, Hemant G. Pandit



ICM VTE Trauma

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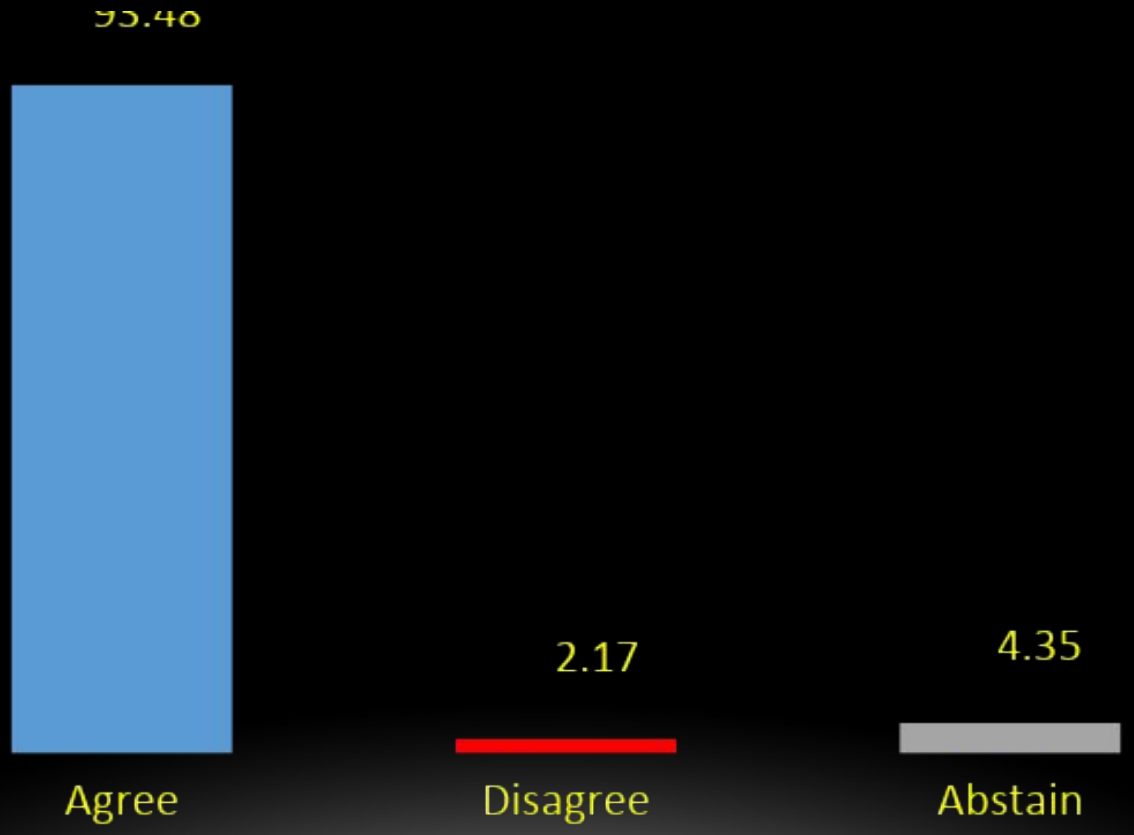


(Strong Consensus)

ICM VTE Trauma

14 - Is routine VTE prophylaxis required for patients with isolated patellar fracture who may or may not require surgery?

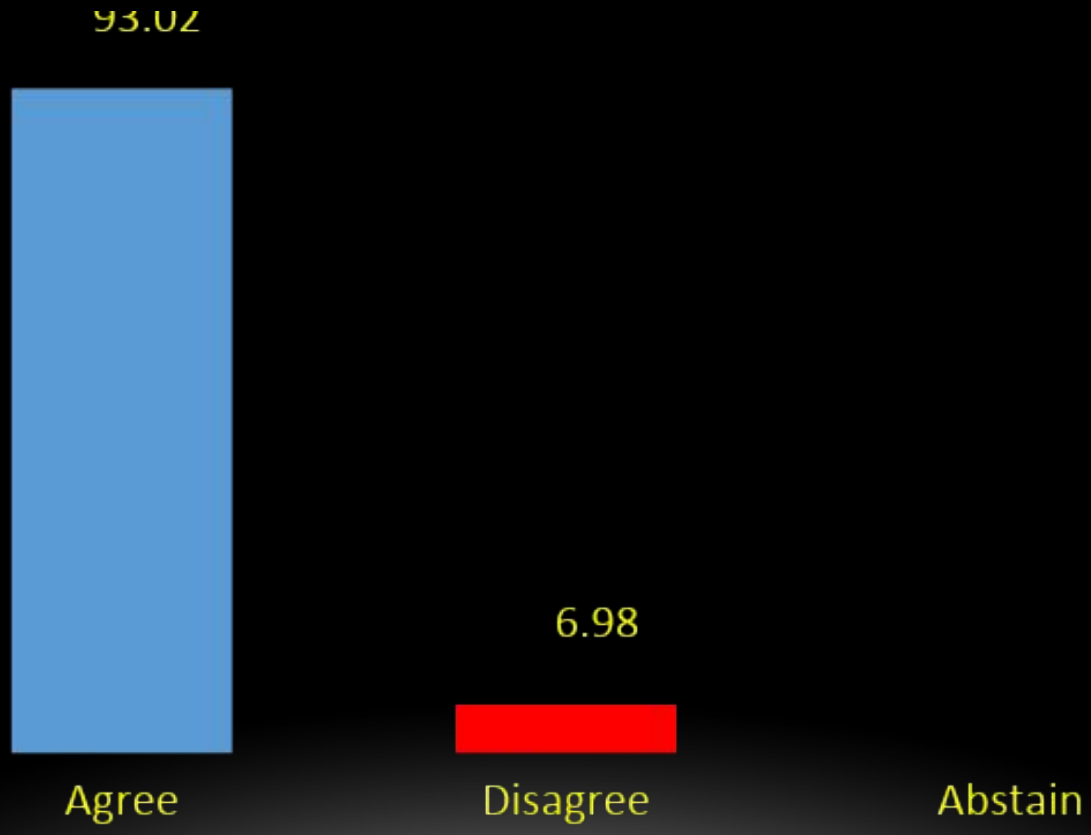
Response/Recommendation: Routine thromboprophylaxis is not indicated for patients with isolated patellar fracture but should be considered for patients with risk factors for venous thromboembolism (VTE).

Strength of Recommendation: Limited.

Kara M. McConaghy, Geoffrey H. Westrich, Nicolas S. Piuzzi

ICM VTE Trauma

14 - Is routine VTE prophylaxis required for patients with isolated patellar fracture who may or may not require surgery?



(Strong Consensus)

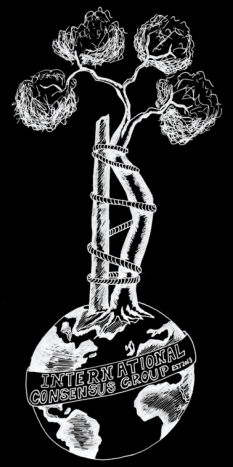
ICM VTE Trauma

15 - Does WALANT for tibia/fibula fracture fixation have an increased risk of VTE events?

Response/Recommendation: Whether wide-awake local anesthesia no tourniquet (WALANT) for tibia/fibula fracture fixation has a risk of venous thromboembolism (VTE) compared to other techniques for tibia/fibula fracture is unknown. We recommend using anticoagulant prophylaxis as per existing thromboprophylaxis guidelines, independent of the technique used.

Strength of Recommendation: Moderate.

Thomas Volk, Jeffrey J. Mojica, Azlina A. Abbas



ICM VTE Trauma

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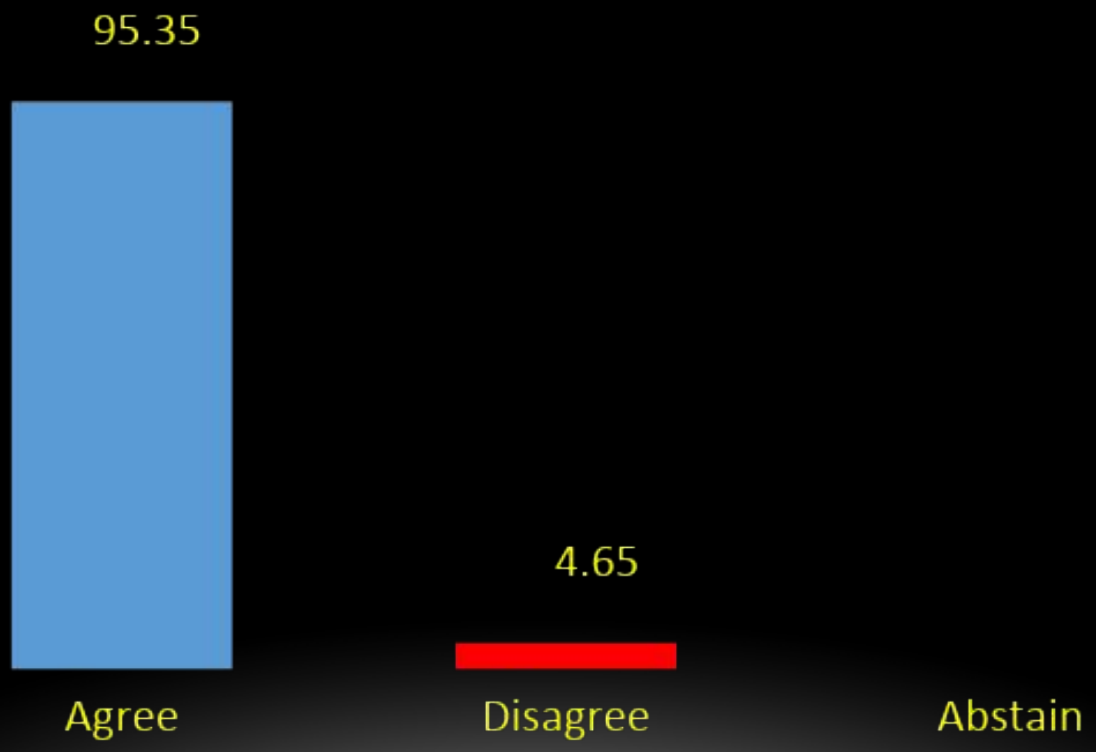


(Strong Consensus)

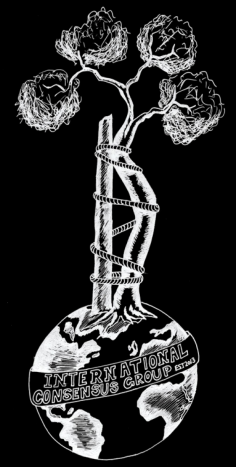
ICM VTE Trauma

16 - Should patients undergoing hardware removal of lower extremity require routine VTE prophylaxis?

Response/Recommendation: Patients undergoing removal of hardware from lower extremity are at low risk of venous thromboembolism (VTE). Thus, routine VTE thromboprophylaxis is not recommended.

Strength of Recommendation: Limited.

Karan Goswami, Tomas Roca-Sanchez, Nestor Moreno-Moreu



ICM VTE Trauma

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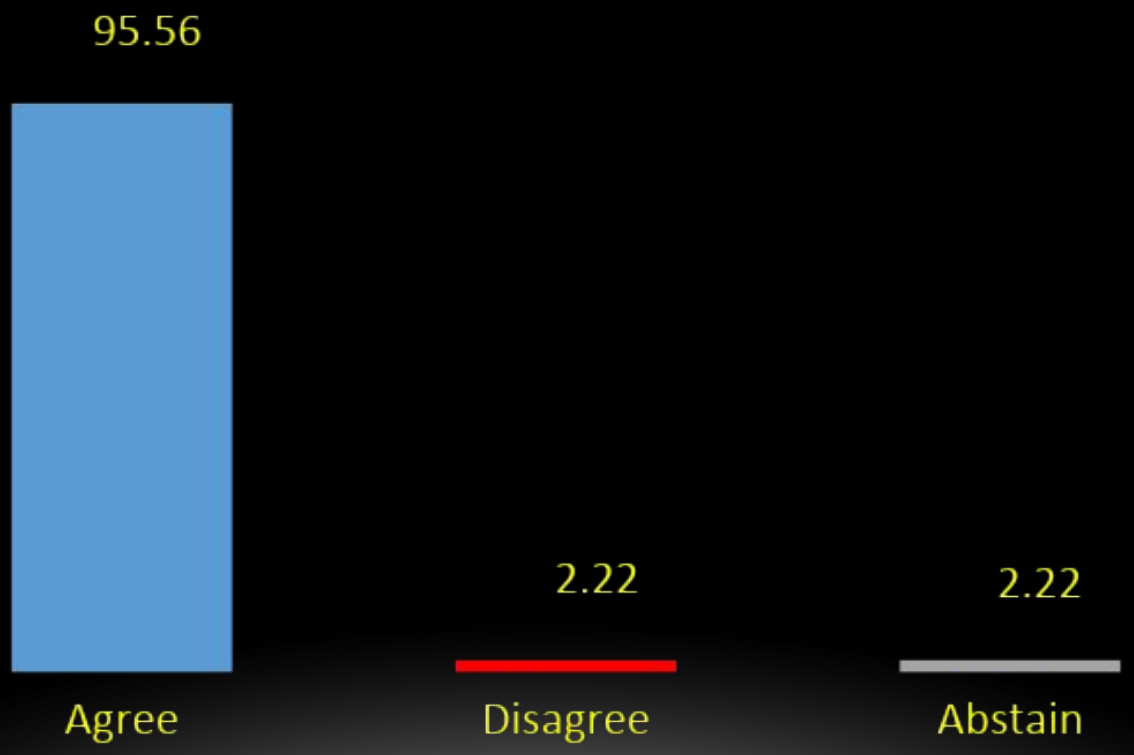


(Strong Consensus)

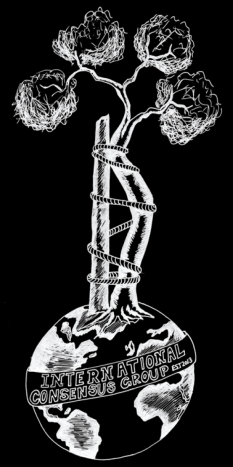
ICM VTE Trauma

17 - Should patients undergoing hardware removal of upper extremity require routine VTE prophylaxis?

Response/Recommendation: Patients undergoing removal of hardware from the upper extremity are at extreme low risk of venous thromboembolism (VTE). Thus, routine use of VTE prophylaxis in these patients is not required. The use of aspirin as a VTE prophylaxis may be considered for those at high risk of VTE.

Strength of Recommendation: Consensus.

Mohammad S. Abdelaal, Nestor Moreno Moreu



ICM VTE Trauma

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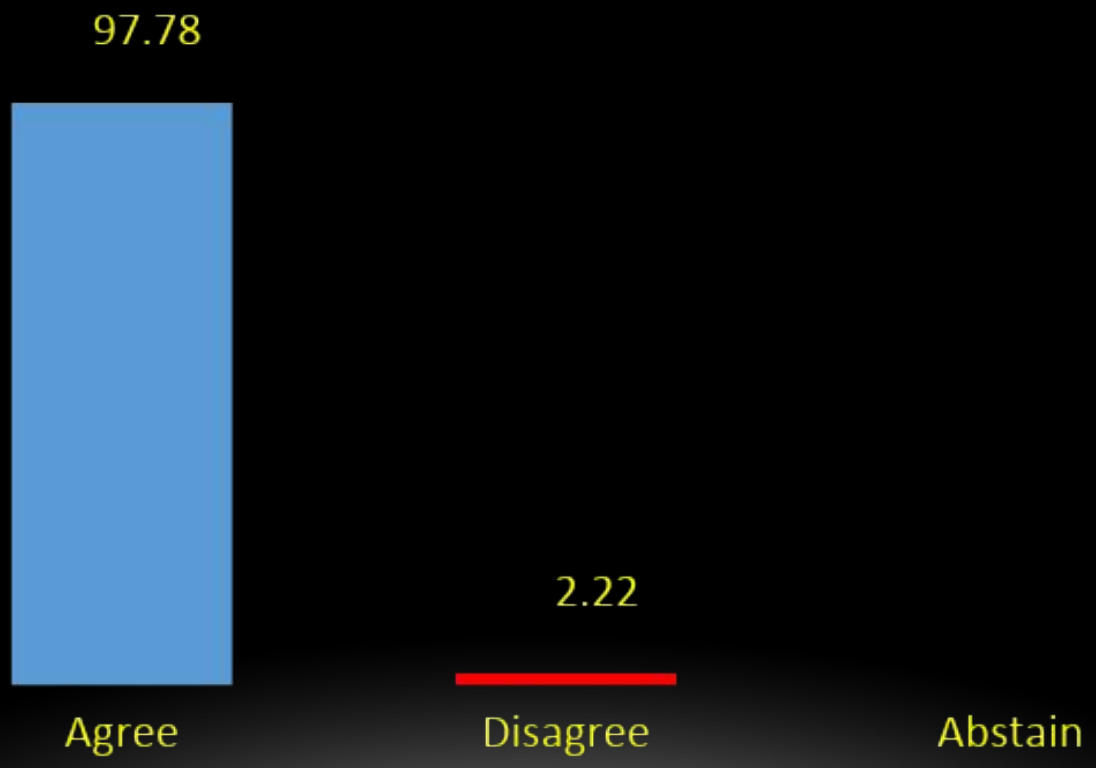

(Strong Consensus)