ICM VTE Shoulder

1 - Concerning VTE risk, which surgeries can be considered major, and which surgeries can be considered non-major in shoulder and elbow surgery?

Response/Recommendation: Shoulder arthroscopy, non- fracture related shoulder arthroplasty, and all elbow procedures can be considered non-major venous thromboembolism (VTE) risk. Fracture related shoulder procedures can be considered major VTE risk.

Strength of Recommendation: Limited.

Alexander J. Rondon, Brian C. Werner, Surena Namdari

ICM VTE Shoulder

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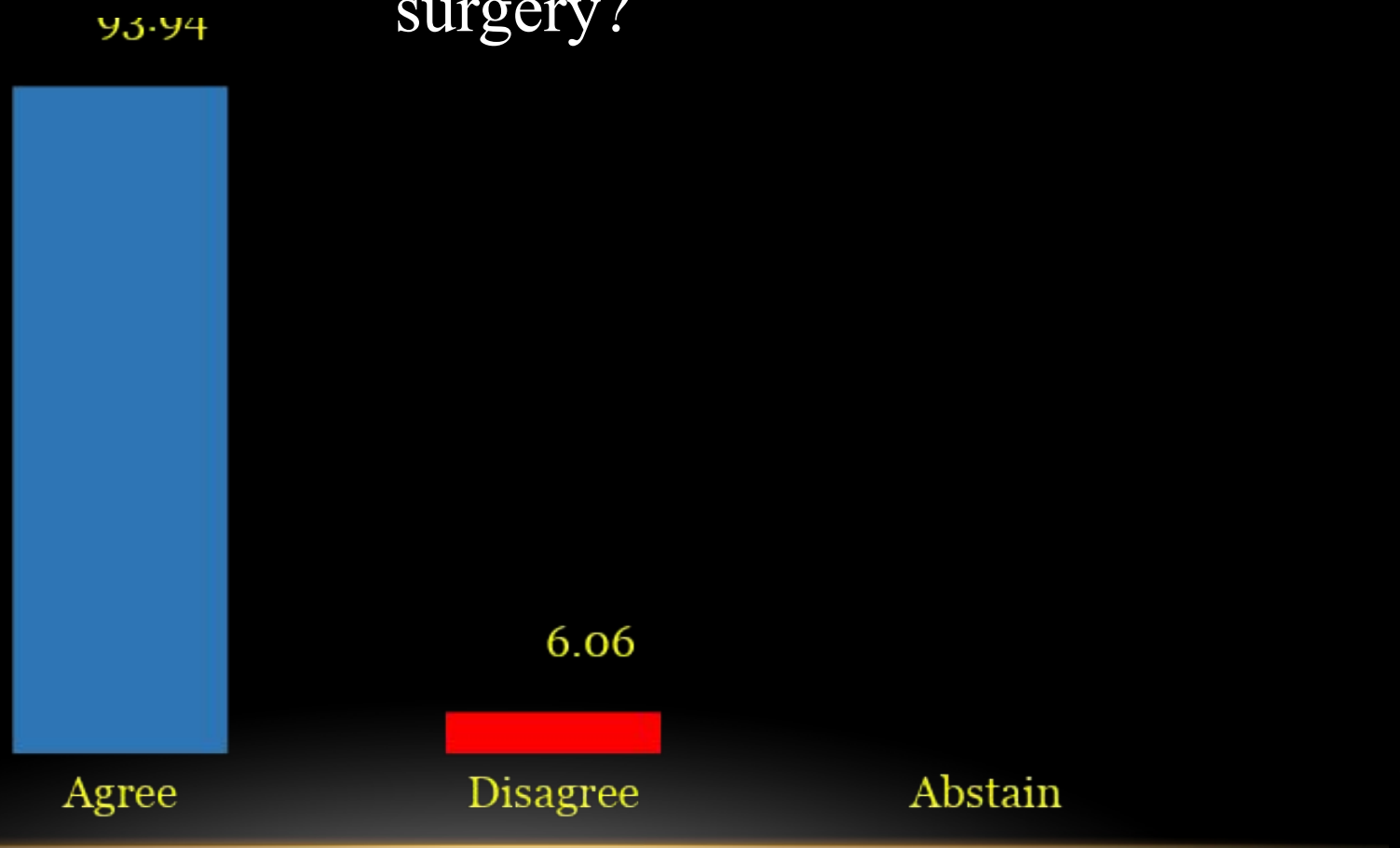


(Strong Consensus)

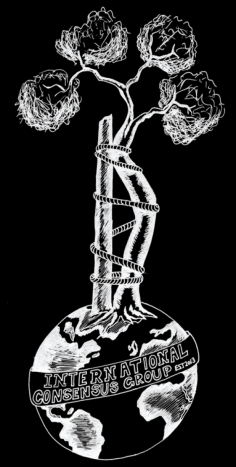
ICM VTE Shoulder

2 - Does immobilization of the upper extremity influence the VTE prophylaxis protocol?

Response/Recommendation: No studies have directly answered the question of whether immobilization of the upper extremity influences the venous thromboembolism (VTE) prophylaxis protocol. There is insufficient evidence to support any alteration in VTE prophylaxis protocol based on need for immobilization of the upper extremity.

Strength of Recommendation: Limited.

Richard L Donovan, Antoon van Raebroeckx, Michael R. Whitehouse



ICM VTE Shoulder

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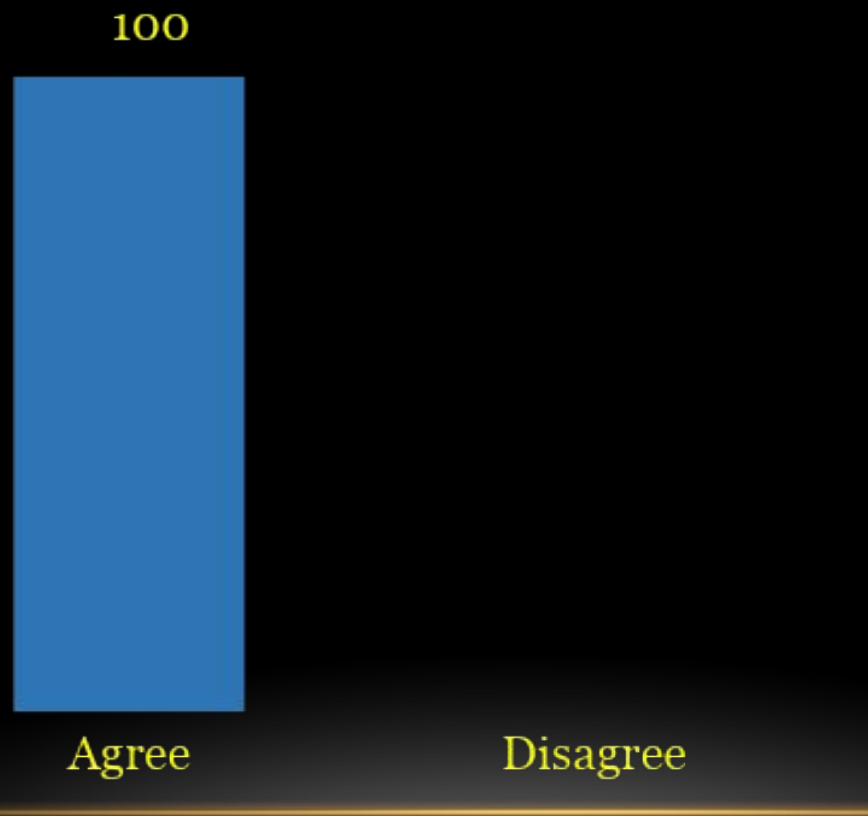


(Strong Consensus)

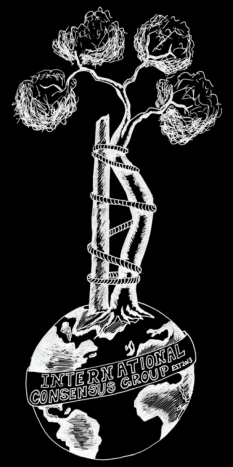
ICM VTE Shoulder

3 - Is there a risk stratification method for VTE of the upper extremity?

Response/Recommendation: No universal risk stratification for venous thromboembolism (VTE) exists with respect to the upper extremity except during hand, wrist, and elbow orthopaedic surgery. It is deemed appropriate that personal and procedural-based risk factors should be considered for all patients. Those upper limb operations under local or regional anesthetic without heavy sedation are at very low-risk for VTE and therefore detailed risk assessment is not indicated.

Strength of Recommendation: Limited.

Darren C. Roberts, David J. Warwick



ICM VTE Shoulder

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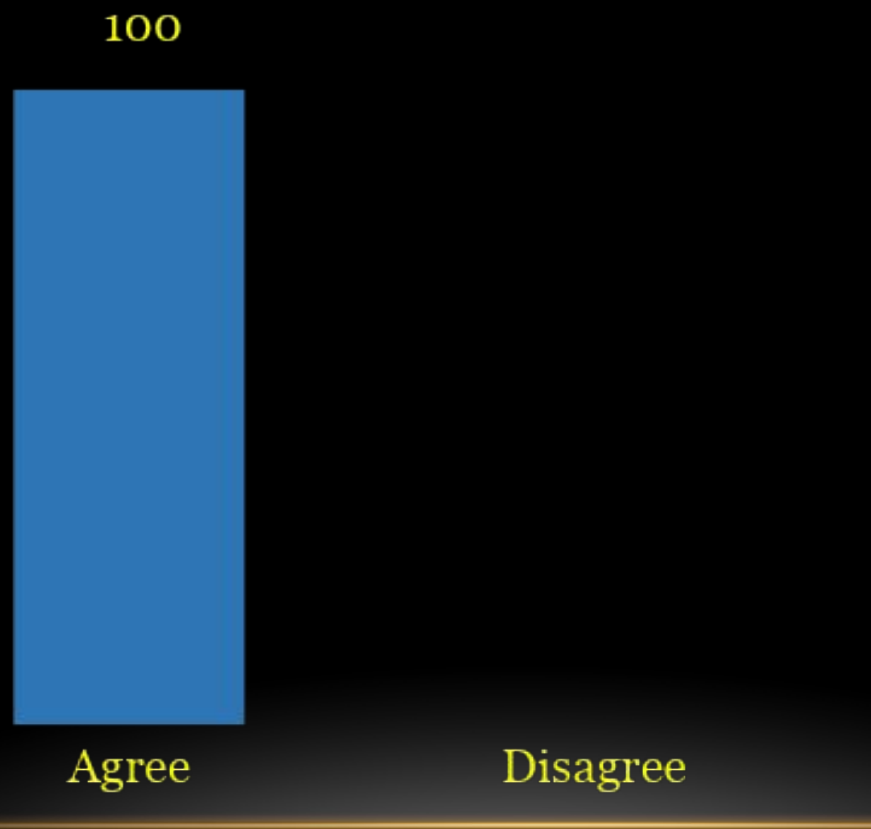


(Unanimous Strong Consensus)

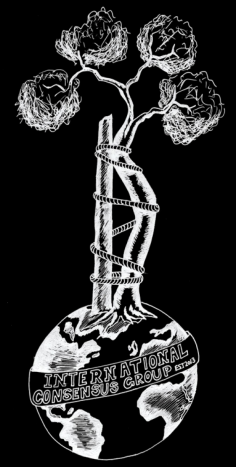
ICM VTE Shoulder

4 - Should routine VTE prophylaxis be administered to patients undergoing upper extremity immobilization, such as casting?

Response/Recommendation: While there are no official guidelines recommending routine venous thromboembolism (VTE) prophylaxis for patients undergoing upper extremity immobilization, the risk of upper extremity VTE is still present. Given that VTE prophylaxis for high-risk patients undergoing various lower limb or spinal orthopaedic procedures is recommended, VTE prophylaxis in high-risk patients undergoing upper extremity immobilization may be beneficial. However, evidence is inconclusive and further research must be done.

Strength of Recommendation: Limited.

Kenneth A. Egol, Garret Esper, Ariana Meltzer-Bruhn



ICM VTE Shoulder

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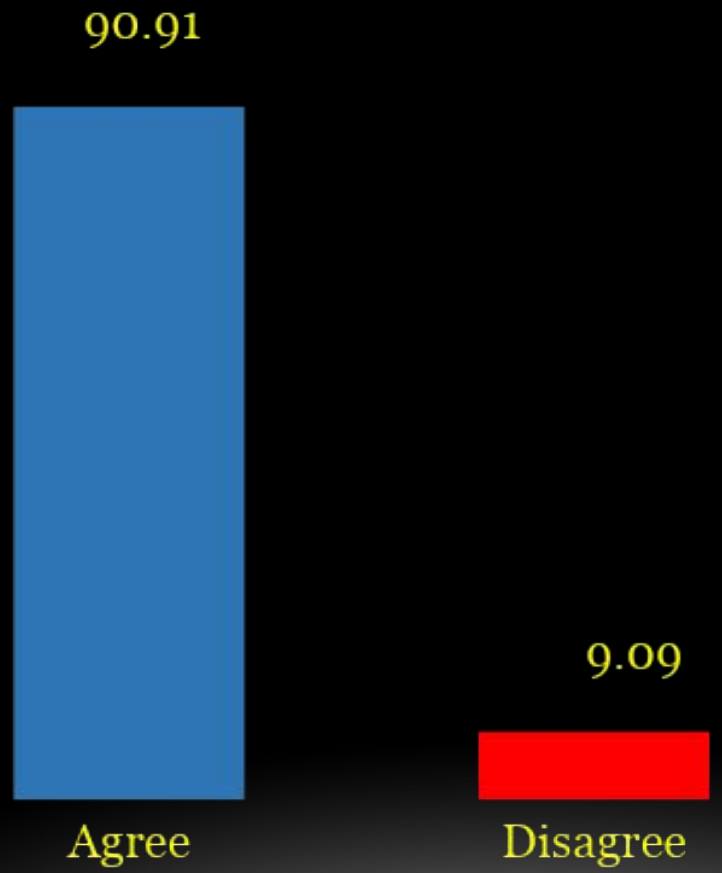


(Strong Consensus)

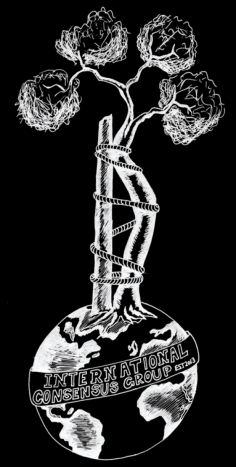
ICM VTE Shoulder

5 - Is there a role for administration of aspirin as a VTE prophylaxis in patients undergoing upper limb surgery?

Response/Recommendation: There is insufficient evidence to support or recommend against using aspirin as venous thromboembolism (VTE) prophylaxis in upper extremity surgery. It may be most beneficial for high-risk patients undergoing more complex reconstructive surgery.

Strength of Recommendation: Limited.

Alberto D. Delgado-Martinez, Laura López-Cuquerella, Ryan M. Cox, Sommer Hammoud



ICM VTE Shoulder

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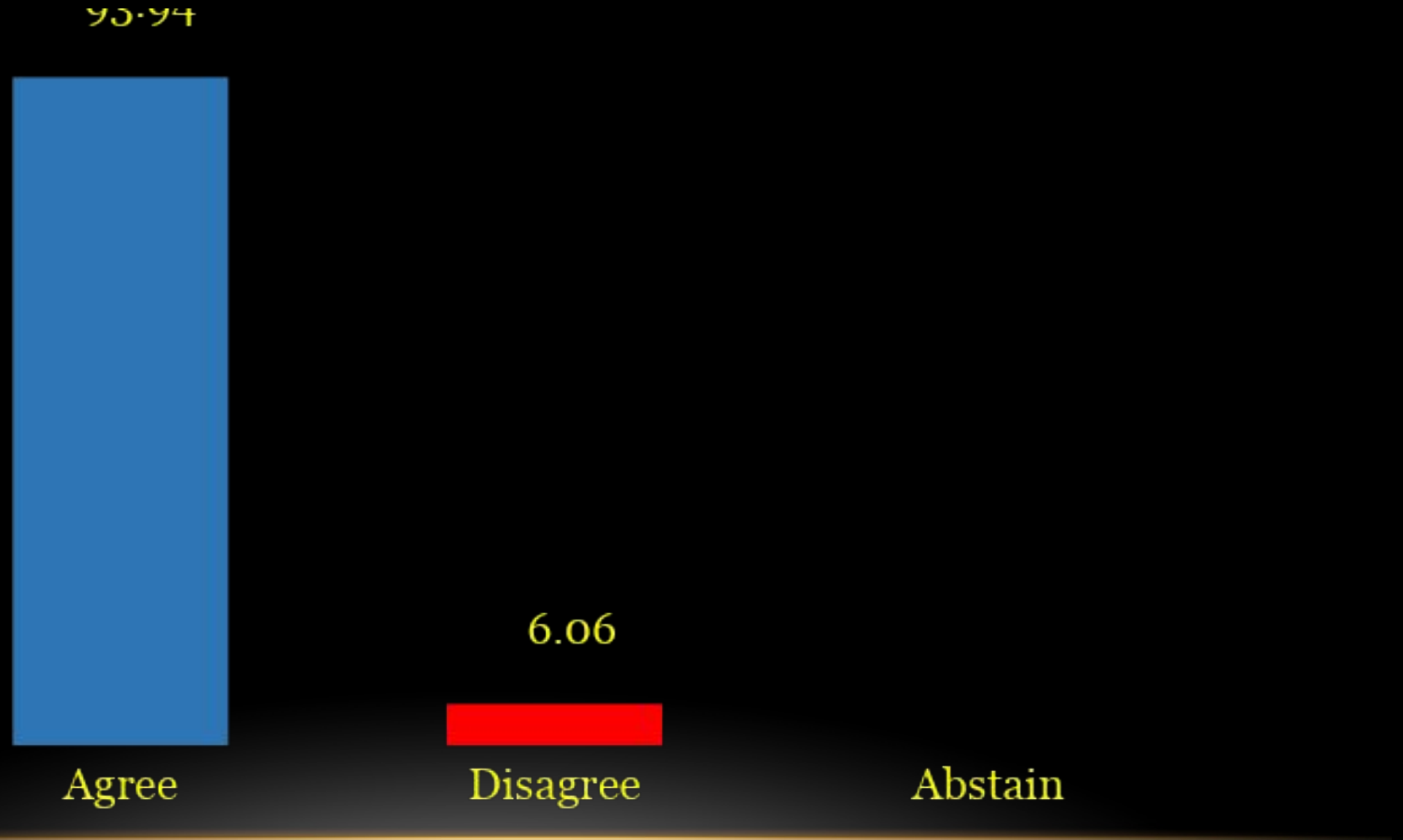


(Strong Consensus)

ICM VTE Shoulder

6 - Should routine VTE prophylaxis be administered to patients undergoing upper extremity osteosynthesis?

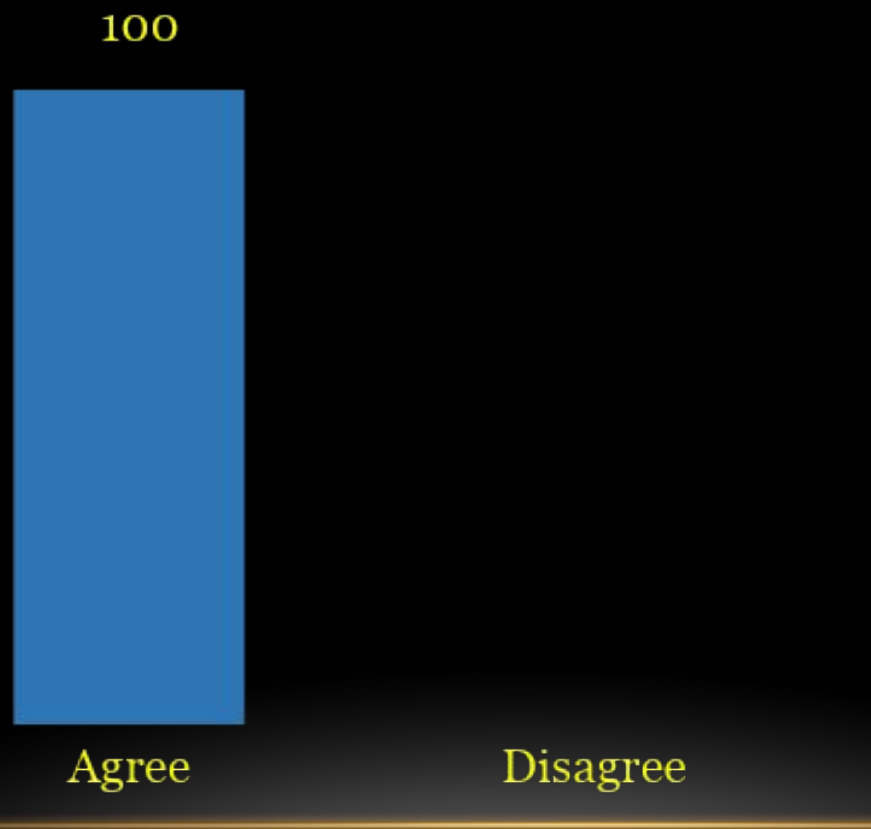
Response/Recommendation: Routine venous thrombo- embolism (VTE) prophylaxis in patients undergoing upper extremity osteosynthesis under local or regional anesthesia is not needed. VTE prophylaxis should be considered in patients at high risk of VTE and those undergoing surgery under general anesthesia that lasts over 90 minutes.

Strength of Recommendation: Limited.

Luis Becker, Juan M. Del Castillo, Matthias Pumberger, Nicolás Cancela

ICM VTE Shoulder

6 - Should routine VTE prophylaxis be administered to patients undergoing upper extremity osteosynthesis?



(Strong Consensus)

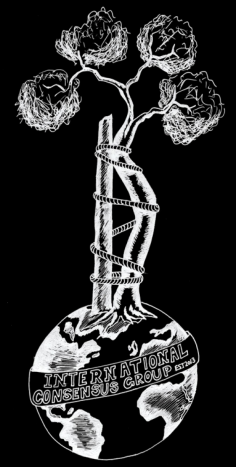
ICM VTE Shoulder

7 - Should routine chemical VTE prophylaxis be administered to patients undergoing shoulder arthroplasty?

Response/Recommendation: Given the minimally increased risk of clinically significant thromboembolic events following shoulder arthroplasty, it is unlikely that the benefits of chemical deep venous thrombosis (DVT) prophylaxis outweigh the risks. There is insufficient evidence to support or recommend against using aspirin (ASA) as venous thromboembolism (VTE) prophylaxis in upper extremity surgery. The bleeding risks associated with low-molecular-weight heparin (LMWH) and direct oral anticoagulants (DOAC) outweigh the benefits in patients without substantial risk factors for VTE.

Strength of Recommendation: Limited.

Augustus C. Demanes, Ashley W. Blom, Setor K. Kunutsor, Kristen C.R. Combs, Ronald A. Navarro



ICM VTE Shoulder

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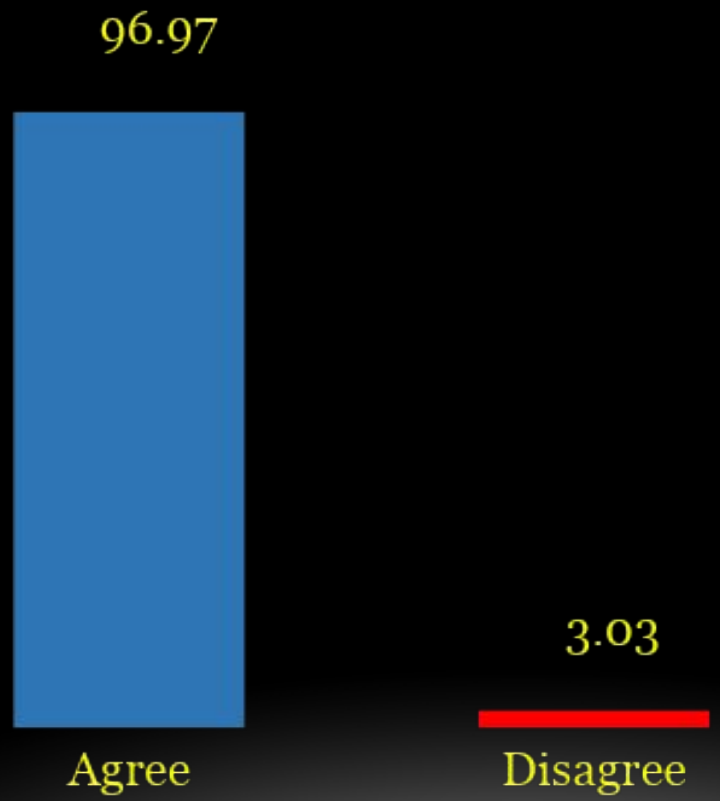


(Strong Consensus)

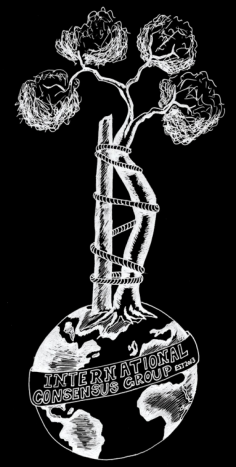
ICM VTE Shoulder

8 - Should routine VTE prophylaxis be administered to patients undergoing rotator cuff repair?

Response/Recommendation: The incidence of venous thromboembolism (VTE) after arthroscopic rotator cuff repair (RCR) is very low. Although the current literature has identified several risk factors for VTE after arthroscopic RCR, there is limited evidence supporting the efficacy of routine VTE prophylaxis postoperatively. In the absence of any literature to guide a recommendation, it is our consensus opinion that patients undergoing RCR should have intraoperative mechanical compression and early mobilization. Patients should also be risk-stratified and if considered high-risk due to other medical conditions, consideration should be given to add VTE chemoprophylaxis.

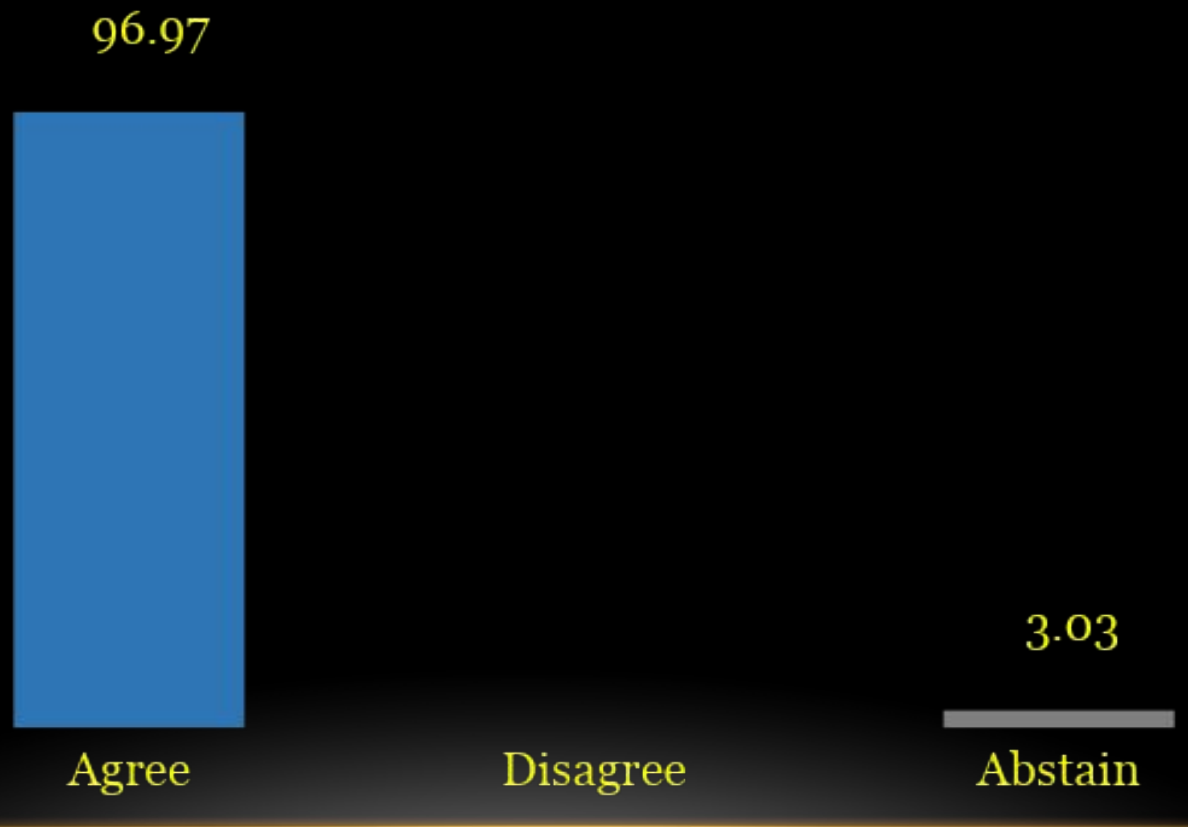
Strength of Recommendation: Limited.

Brian C. Werner, Gerald R. Williams



ICM VTE Shoulder

8 - Should routine VTE prophylaxis be administered to patients undergoing rotator cuff repair?



(Strong Consensus)

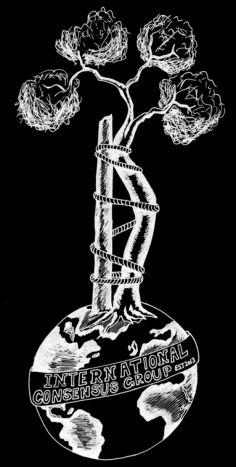
ICM VTE Shoulder

9 - Should routine VTE prophylaxis be administered to patients undergoing arthroscopic stabilization procedures of the shoulder?

Response/Recommendation: Currently, there is no data to suggest that routine thromboprophylaxis should be performed in patients undergoing arthroscopic shoulder stabilization in normative risk patients. Given the low risk of complications, intermittent pneumatic compression (IPC) devices should be used. Venous thromboembolism (VTE) pharmacological prophylaxis may be considered in patients undergoing stabilization surgery with the Latarjet/Bristow procedure.

Strength of Recommendation: Consensus.

Ryan W. Paul, Anya T. Hall, Pawe1 Chodór, Jacek L. Kruczyński, Fotios P. Tjoumakaris



ICM VTE Shoulder

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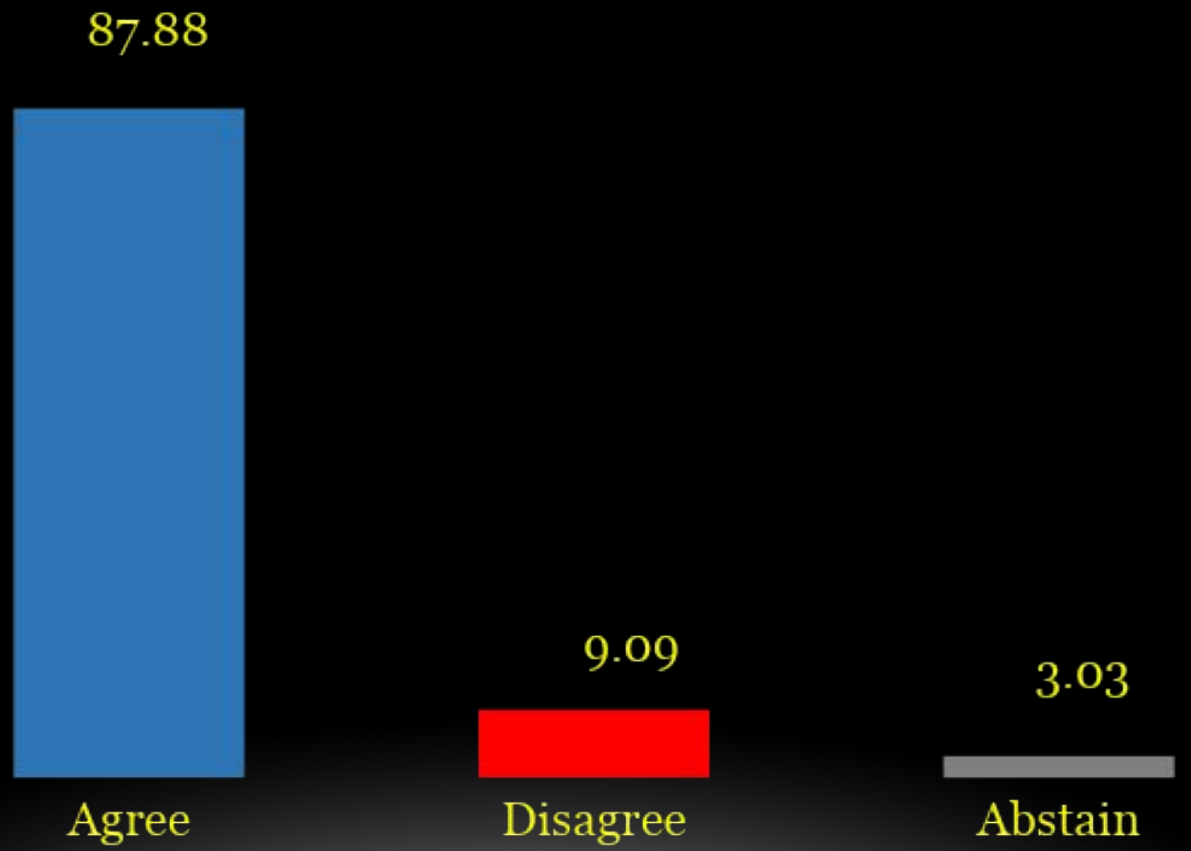


(Strong Consensus)

ICM VTE Shoulder

10 - Should routine VTE prophylaxis be administered to patients undergoing elbow arthroplasty?

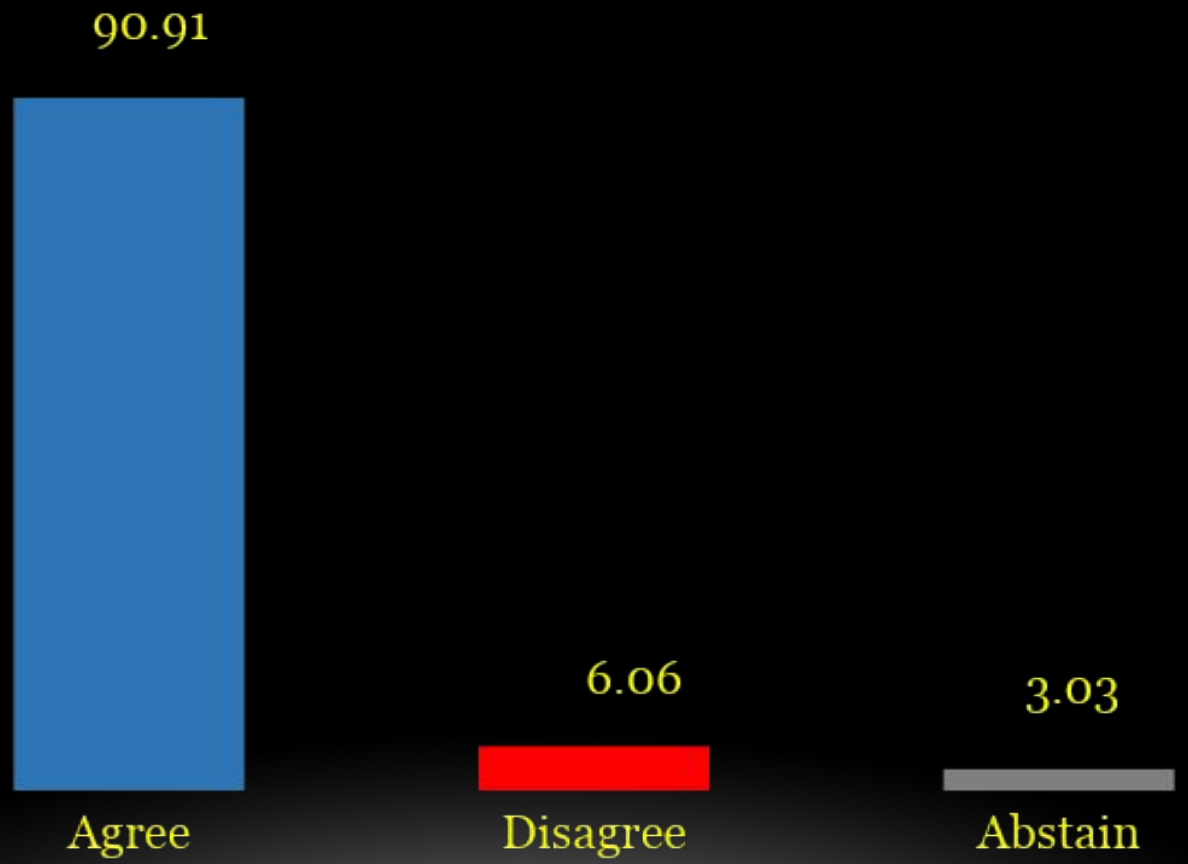
Response/Recommendation: There is no appropriate data to guide a strong evidence-based recommendation regarding the need for venous thromboembolism (VTE) prophylaxis for patients undergoing elbow arthroplasty (EA). At minimum, intermittent pneumatic compression (IPC) and early post-operative ambulation are low risk interventions that should be employed.

Strength of Recommendation: Consensus.

Antoon van Raebroeckx, Surena Namdari

ICM VTE Shoulder

10 - Should routine VTE prophylaxis be administered to patients undergoing elbow arthroplasty?



(Strong Consensus)

ICM VTE Shoulder

11 - Should routine VTE prophylaxis be administered to patients undergoing ligament reconstruction around the elbow?

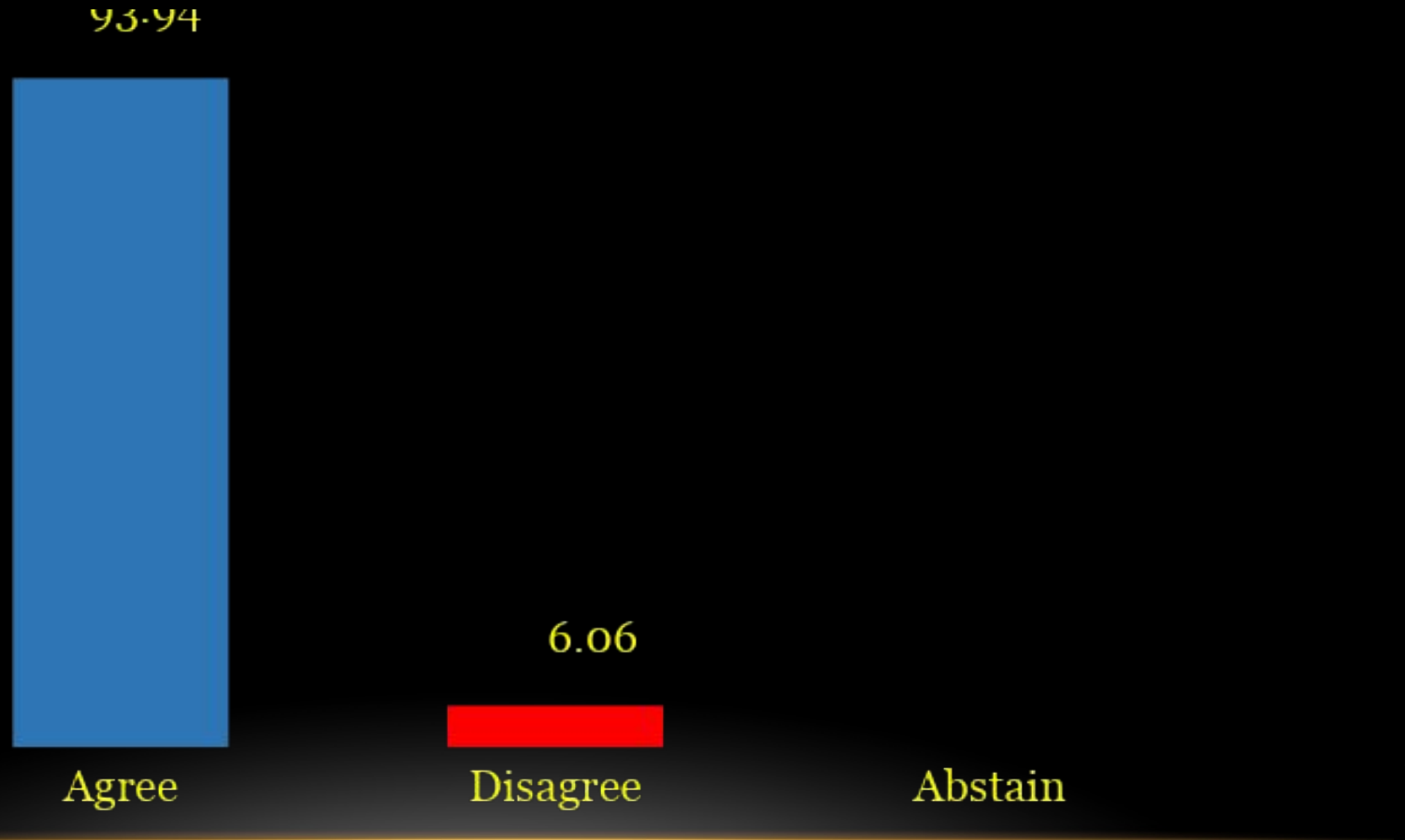
Response/Recommendation: In the absence of any literature to guide a recommendation, it is our consensus opinion that patients undergoing ligament reconstruction for elbow instability should have intraoperative mechanical compression and early mobilization. Patients should also be risk-stratified and, if considered high-risk due to other medical conditions, consideration should be given to adding venous thromboembolism (VTE) chemoprophylaxis.

Strength of Recommendation: Consensus

Filippo Randelli, Alberto Fioruzzi

ICM VTE Shoulder

11 - Should routine VTE prophylaxis be administered to patients undergoing ligament reconstruction around the elbow?



(Strong Consensus)

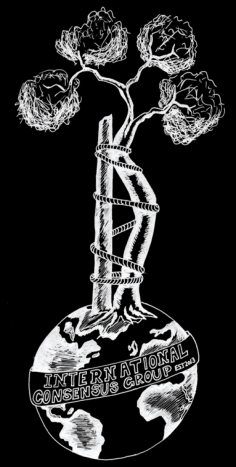
ICM VTE Shoulder

12 - What are the classical signs, if any, of upper extremity DVT?

Response/Recommendation: Most of the signs and symptoms of an upper extremity deep venous thrombosis (DVT) are rather non-specific, such as pain and edema. However, more unusual signs such as visible venous collaterals and skin discoloration are more concerning for DVT.

Strength of Recommendation: Limited.

Ryan M. Cox, Jaimo Ahn, Surena Namdari



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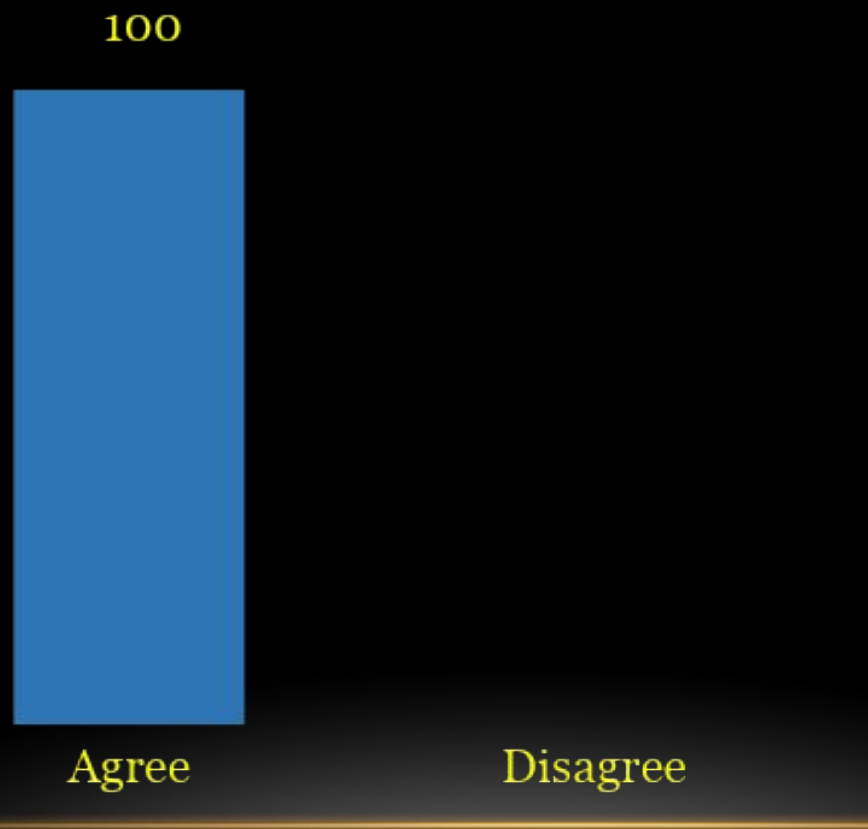


(Unanimous Strong Consensus)

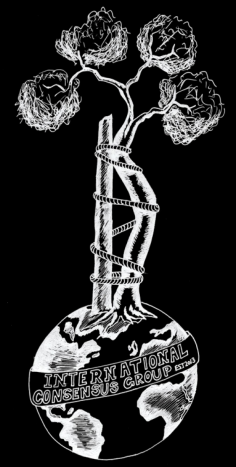
ICM VTE Shoulder

13 - What is the optimal management of DVT of the upper extremity?

Response/Recommendation: Patients with deep venous thrombosis (DVT) of the upper extremity should receive the same anticoagulant treatment regimens used for patients with DVT of the lower extremity. These include direct oral anticoagulants (DOAC) alone (apixaban and rivaroxaban), low-molecular-weight heparin (LMWH) and DOAC (edoxaban and dabigatran), LMWH alone, or LMWH and vitamin K antagonists. Anticoagulant treatment should be continued for at least 3 months and extended beyond 3 months if the event is unprovoked or secondary to permanent risk factors (e.g., cancer) and bleeding risk is low. The use of thrombolytic treatment or surgical approaches should be restricted to highly selected cases at low-risk for bleeding.

Strength of Recommendation: Limited.

Walter Ageno, Nelson E. Socorro



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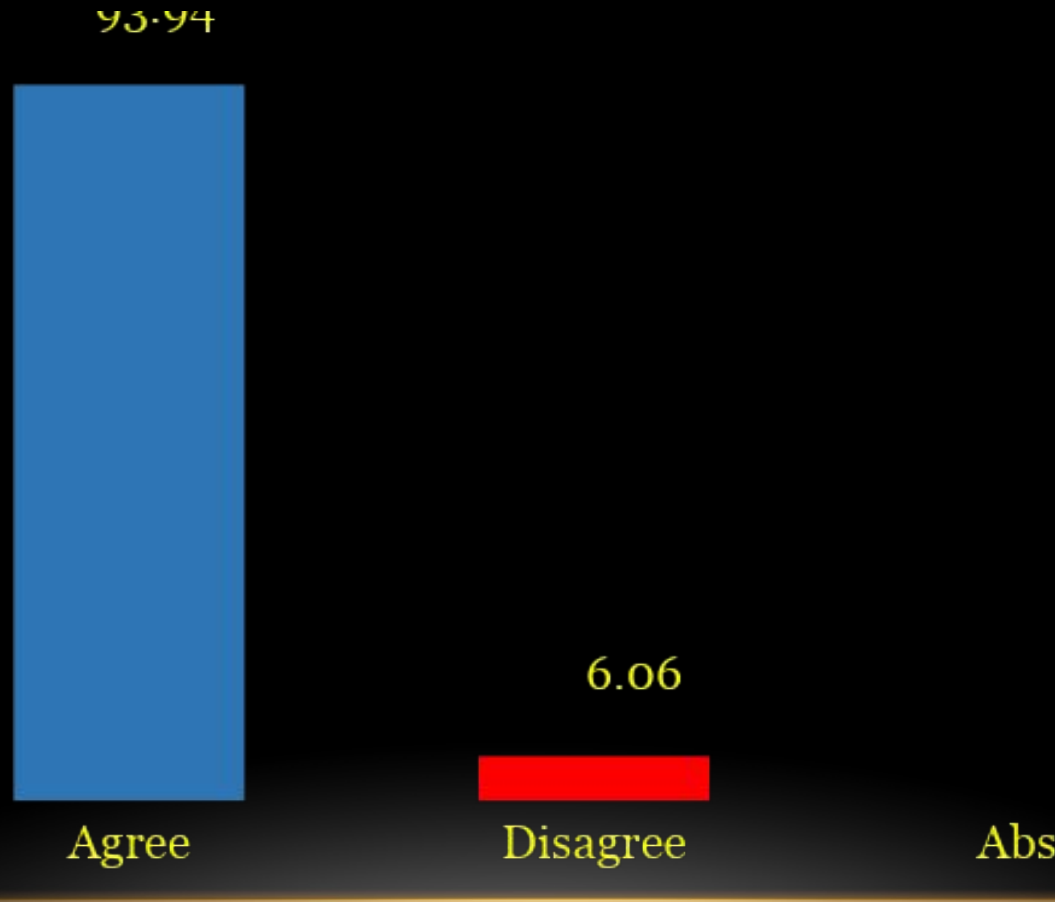

(Strong Consensus)