Twitter Thread by Dr Supradip Ghosh

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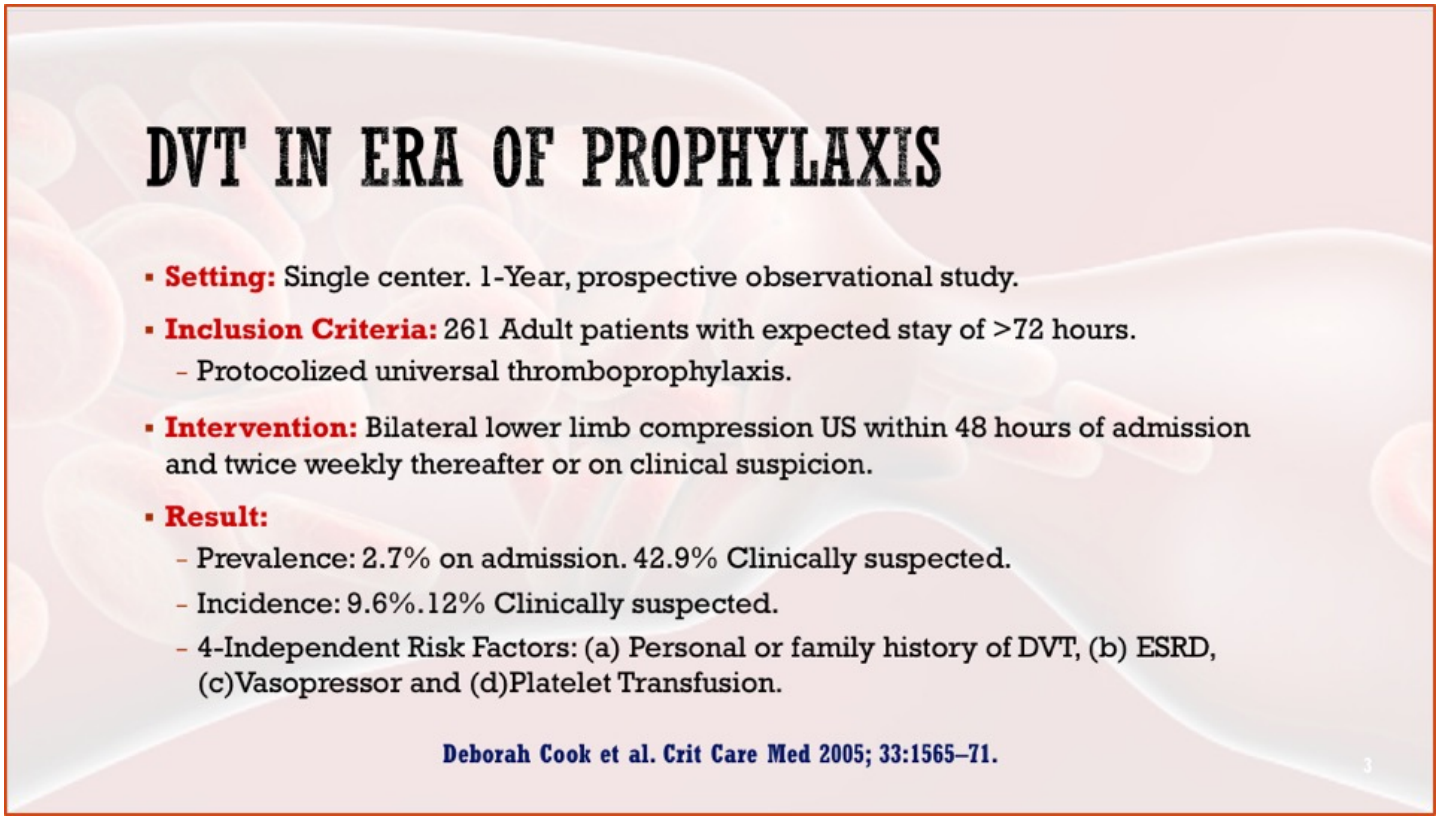
Some thought about DVT prophylaxis in ICU.
Part of my presentation on the same topic.

Question 1: What is the incidence of DVT and PE in current era of widespread thrombo-prophylaxis?
#FOAMed



Question 2: How do you diagnose DVT in ICU?

■■I think, the best evidence is available for CUS with limited scope for Venography.

And no role of D-Dimer.

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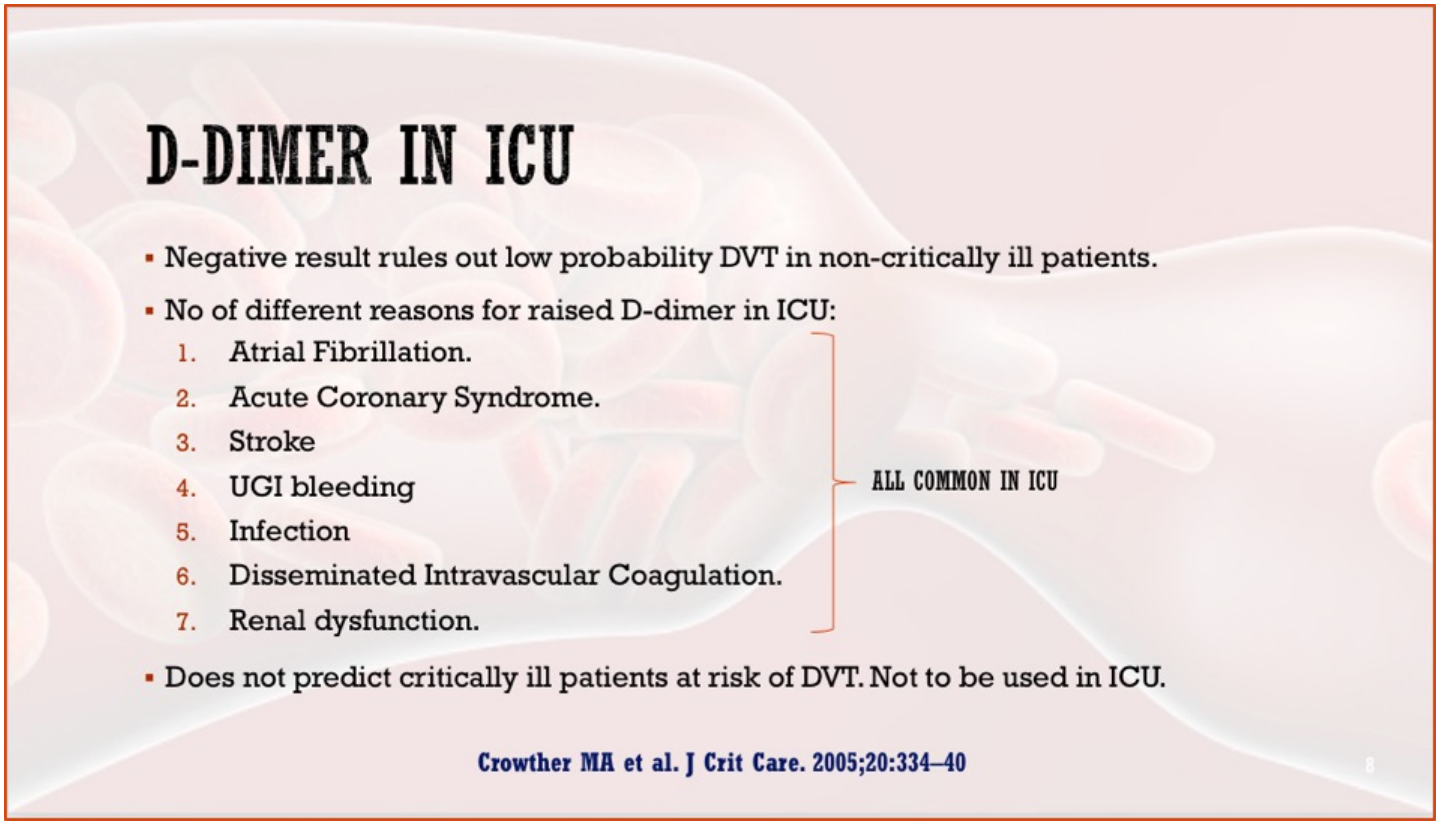

Question 3: Is there any evidence supporting Heparin thrombo-prophylaxis in ICU?
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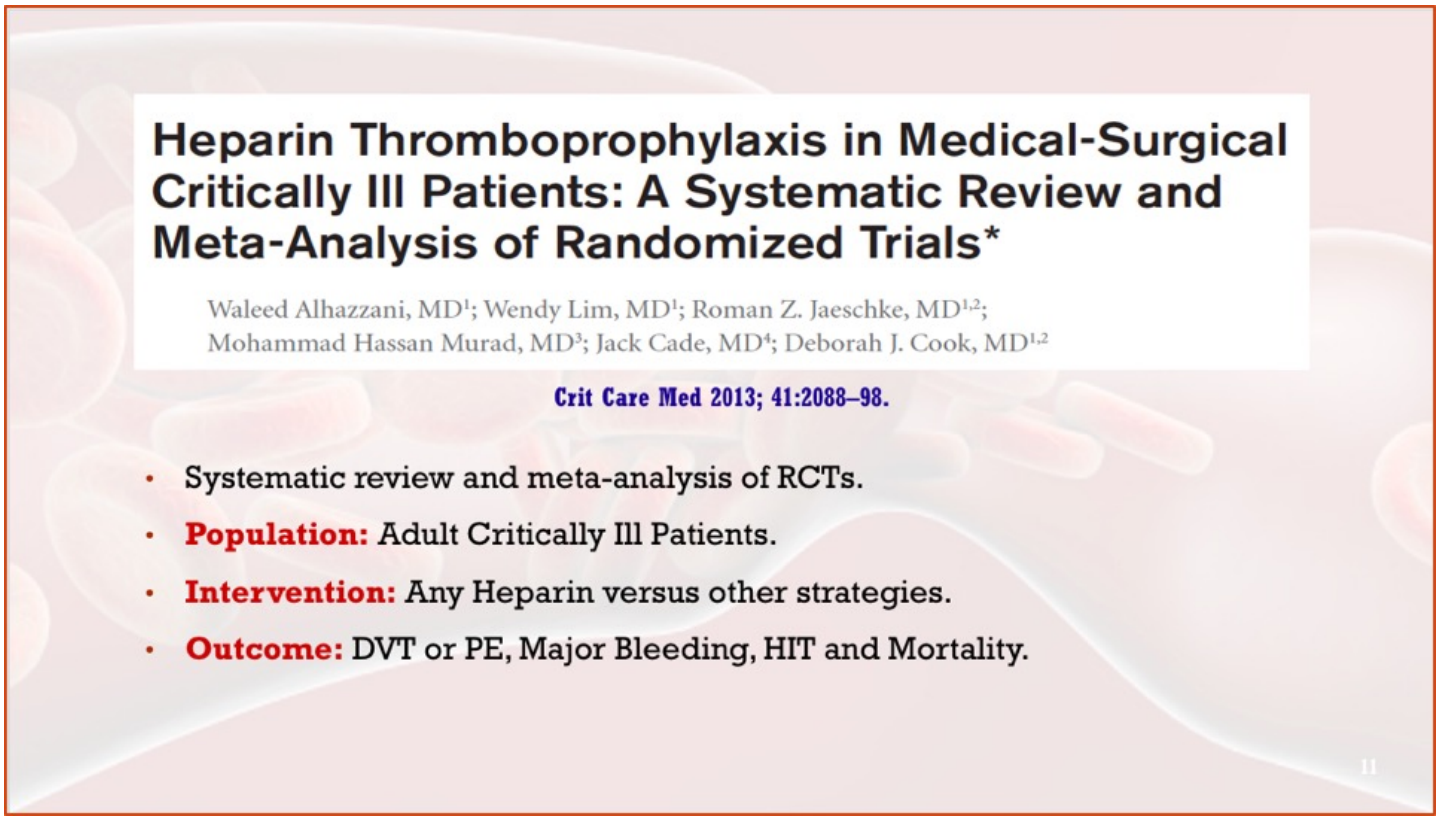
Yes.
1■Number needed to prophylax to prevent 1 DVT - 20
2■Number needed to prophylax to prevent 1 PE - 52
3■Overall no major bleeding. But bleeding risk need to be individualised.



Question 4: Is there any evidence of LMWH over UFH in VTE Prophylaxis?

#FOAMeYes.

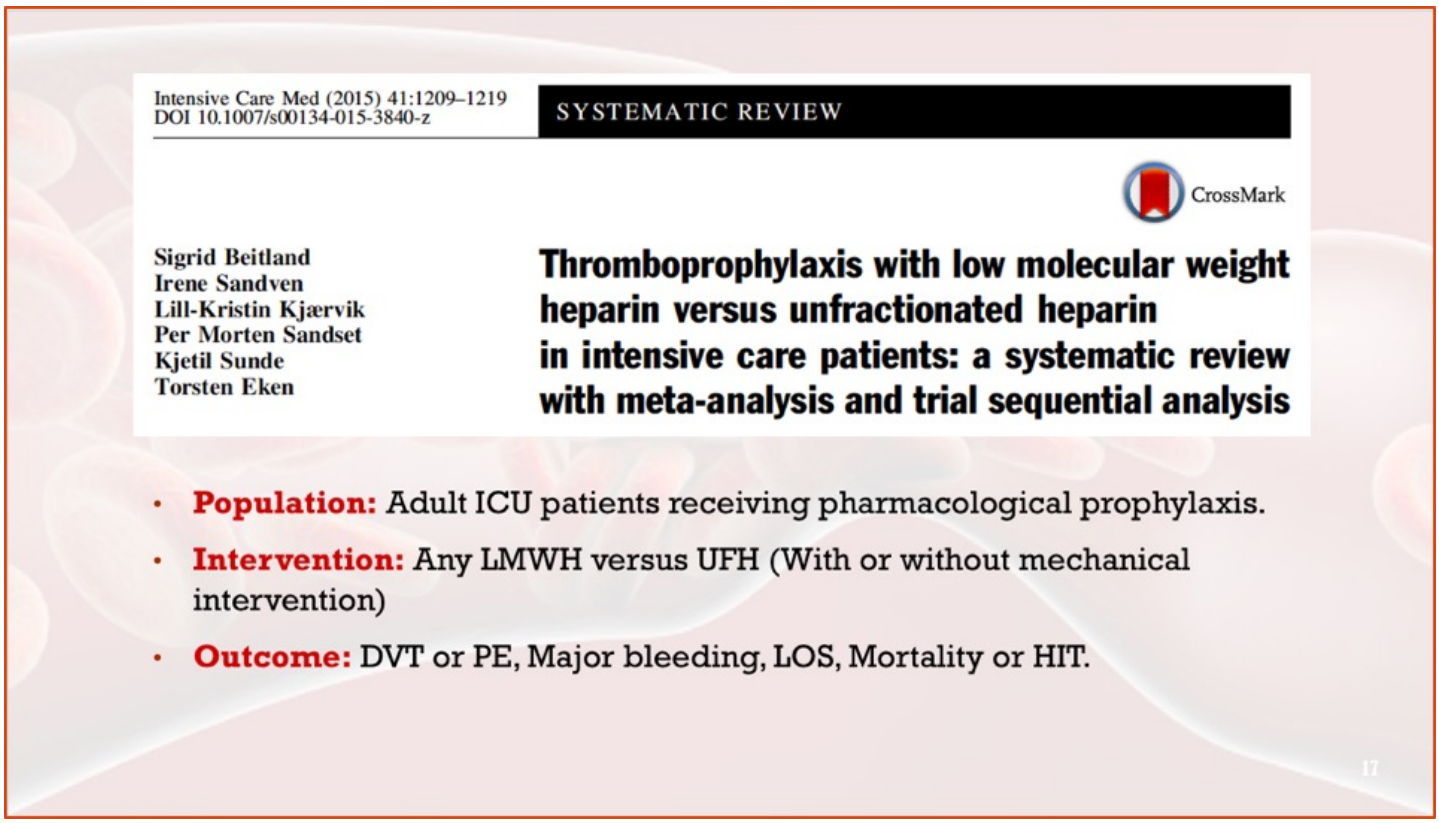
1■LMWH decreases DVT. But no difference in Proximal DVT.

2■No difference in PE.

3■No difference in major bleeding.

4■Lower incidence of HIT in LMWH (PROTECT Trial).

5■Overall advantage LMWH.



Question 5: Is there any role of Mechanical Thromboprophylaxis?

#FOAMed

MECHANICAL PROPHYLAXIS

- Multiple studies have shown benefit to reduce risk of DVT.
  - No studies large enough to show reduction in PE or mortality.
  - Less effective than medical prophylaxis
- Must be properly fitted, applied, and worn almost continuously
- Patients with high bleeding risk (or as adjunctive therapy to medical prophylaxis in certain high-risk patients).
- Contraindication: Severe PVD. Active DVT. Amputated leg. Leg ulcer or trauma.

23

Question 6: What is the evidence for Pharmacological Thromboprophylaxis in patients with low CrCL?

1■Maximum evidence is for Dabigatran.
2■But unfortunately even on Dabigtran with adequate Anti-factor Xa level maintained both DVT and bleeding risk remains high.
#FOAMed

THROMBOPROPHYLAXIS IN RENAL FAILURE

- Multicenter open level observational study.
- 138 patients with renal failure [Mean CrCl 18.9 ml/min/1.73m2].
  - Dalteparin 5000 Units SC OD.
  - Twice weekly CUS.
- **Result:**
  - Adequate anticoagulation. Median anti-factor Xa level at 2-H and 4-H [0.29 and 0.31 IU/ml].
  - DVT incidence: 5.1%. APACHE II Score only independent risk factor.
  - Major Bleeding: 7.2%.despite trough anti-Factor Xa level <0.18 IU/ml in all patients. Aspirin use and INR independent predictor of bleeding.

Deborah Cook et al. Critical Care 2008, 12:R32

28

Question 7: Any evidence in TBI?

#FOAMed

Suggestions.

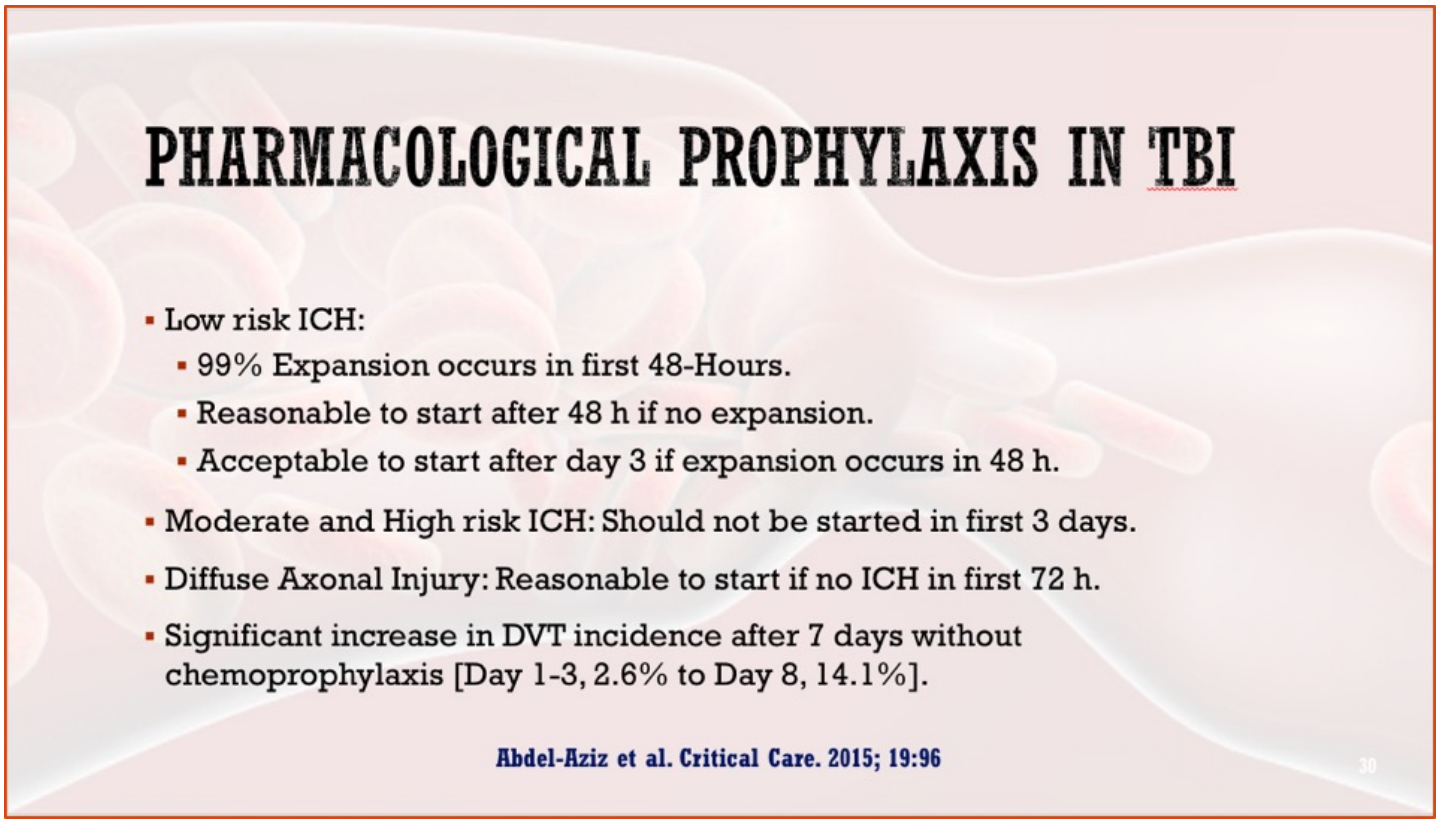
1■GCS 13-15. No bleed expansion at 48-H. Start.

2■GCS 13-15. Some expansion at 48-H. Start only after 72-H.

3■GCS 3-12. Not before 72 H. But before 7-days.

4■For DAI. No bleeding. Start after 72-H.

5■Consult Neurosurgery.



Question 8: How to treat DVT in ICU?

#FOAMed

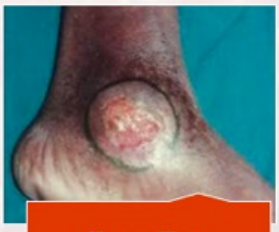
1■Standard anticoagulation.

2■Limited role for Catheter Directed Thrombolysis.

TREATMENT OF DVT

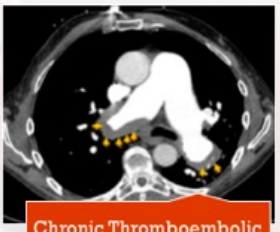
GOAL IS TO PREVENT.

Post-Thrombophlebitic Syndrome



Venous Ulcer

Pulmonary Embolism



Chronic Thromboembolic Pulmonary HTN

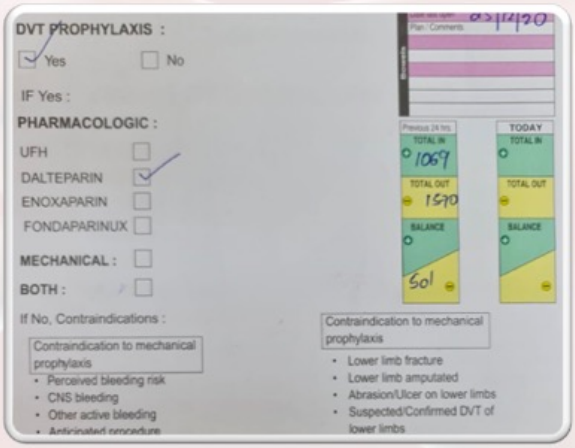
31

Question 9: How do I provide DVT prophylaxis in my ICU?
#FOAMed

1■All ICU patients need DVT prophylaxis.
2■Pharmacological preferred over Mechanical.
3■If DVT prophylaxis not given for some reason, the reason must be documented.

MY SIMPLE RULE.

- All ICU patients need prophylaxis.
- Pharmacological preferred.
  - Either Dalteparin or Enoxaparin.
  - Fondaparinux only in patients with previous HIT.
- Mechanical (Intermittent Pneumatic Compression device) only if pharmacological is contra-indicated.
- Pharmacological PLUS Mechanical in High-spinal cord injury !
- **DOCUMENTATION.**



26

Question 10: Is there any evidence for DOACs?

#FOAMed

1■Yes. For several of them.

2■APEX supports Betrixaban for prophylaxis.

3■Xalia supports Rivaroxaban for treatment.

4■But will be cautious in using them in my patients. Limited evidence in ICU patients. Limited reversal agent.