MANAGEMENT STRATEGIES OF PATIENTS WITH PE & HIGH BLEEDING RISK

ATEF ELBAHRY, FRCPE(UK),FACA(USA),FICA(USA),FISCP(CH)
SENIOR CONSULTANT OF CARDIOVASCULAR MEDICINE
VICE PRESIDENT OF THE EGYPTIAN ASSOCIATION OF VASCULAR BIOLOGY & ATHEROSCLEROSIS

THE PATIENT WITH HIGH BLEEDING RISK

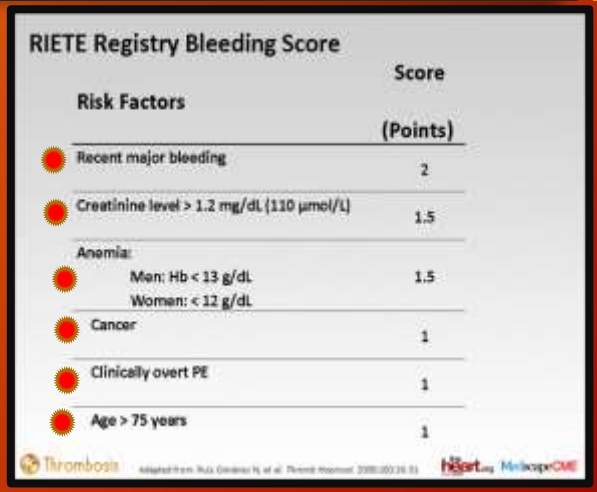
Risk of Bleeding

- Empiric anticoagulation therapy should be considered on a case-by-case basis for patient with moderate or high risk for bleeding.
- 1 risk factor (moderate):3.2 percent risk of bleeding in the first three months and 1.6 percent per year thereafter
- 2 risk factors (high): 12.8 percent in the first three months and ≥6.5 percent per year thereafter

Risk Factors for bleeding
Age >65
Previous bleeding
Thrombocytopenia
Antiplatelet therapy
Recent surgery
Frequent falls
Previous stroke
Diabetes
Anemia
Cancer
Renal failure
Liver failure
Alcohol abuse

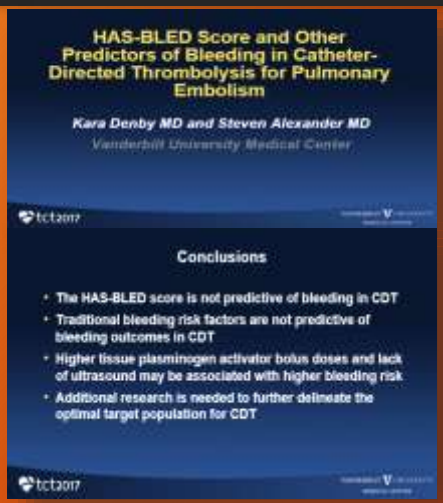
RIETE REGISTRY BLEEDING SCORE

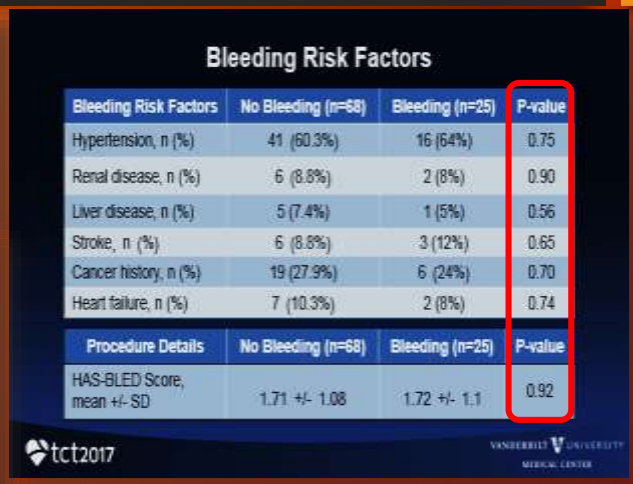
- To help guide the estimation of bleeding risk under oral anticoagulant treatment, clinical scores have been developed and validated. The RIETE registry score is one such score that was constructed in a population of almost 20,000 consecutive patients with acute VTE to predict the risk for major bleeding within 3 months of anticoagulant therapy



ATEF ELBAHRY-CARDIOMILITARY-2018

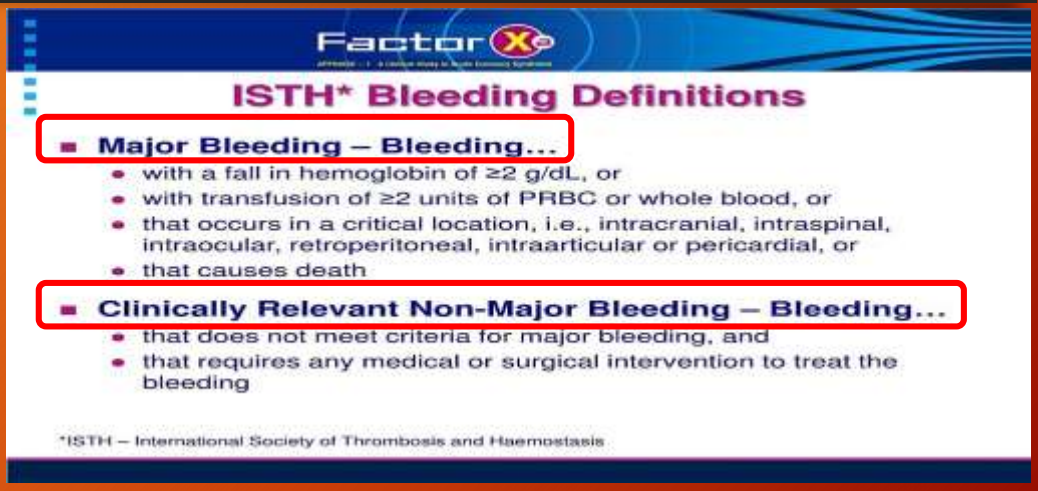
DO NOT USE HAS BLED SCORE IN PE



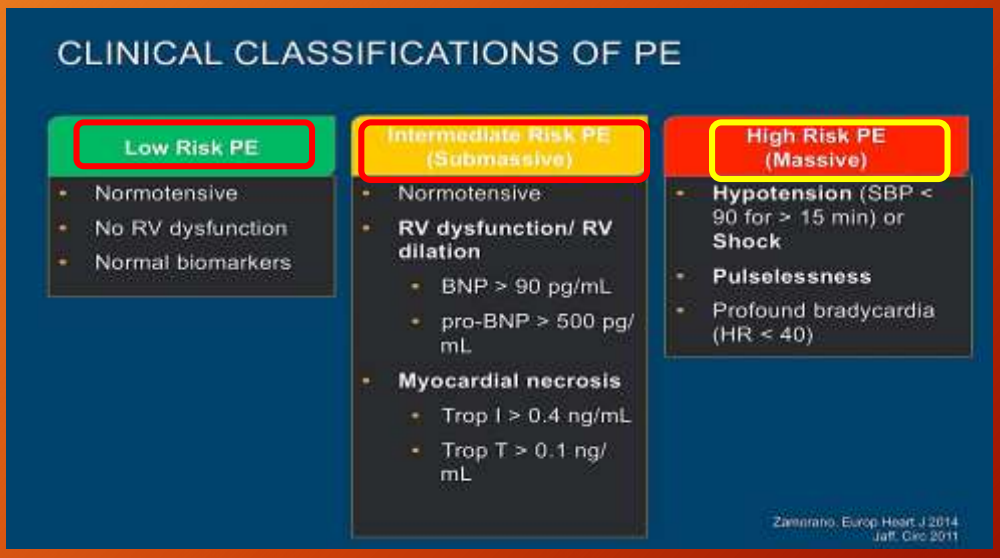


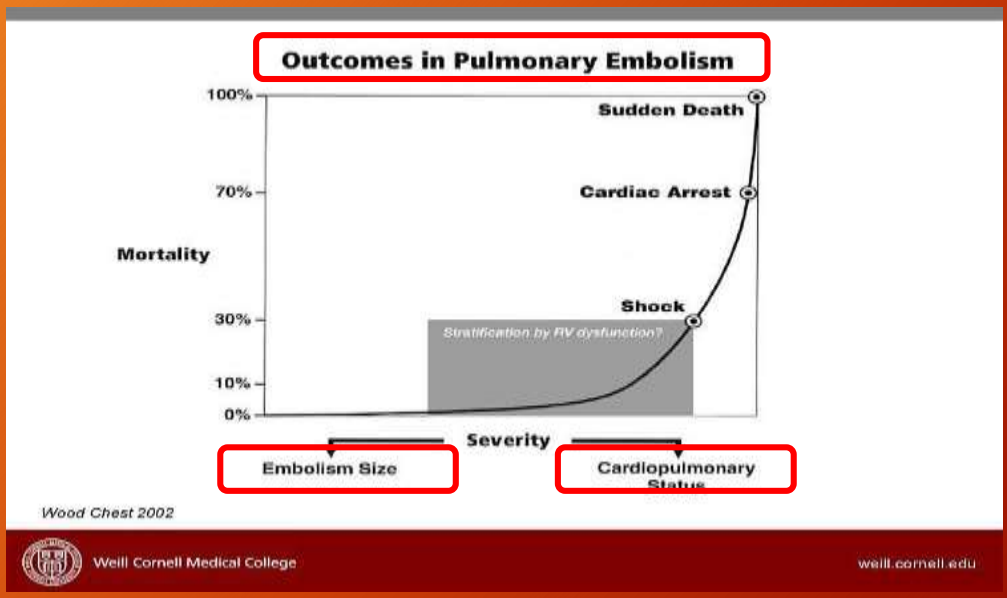
ATEF ELBAHRY-CARDIOMILITARY-2018

ISTH BLEEDING DEFINITIONS

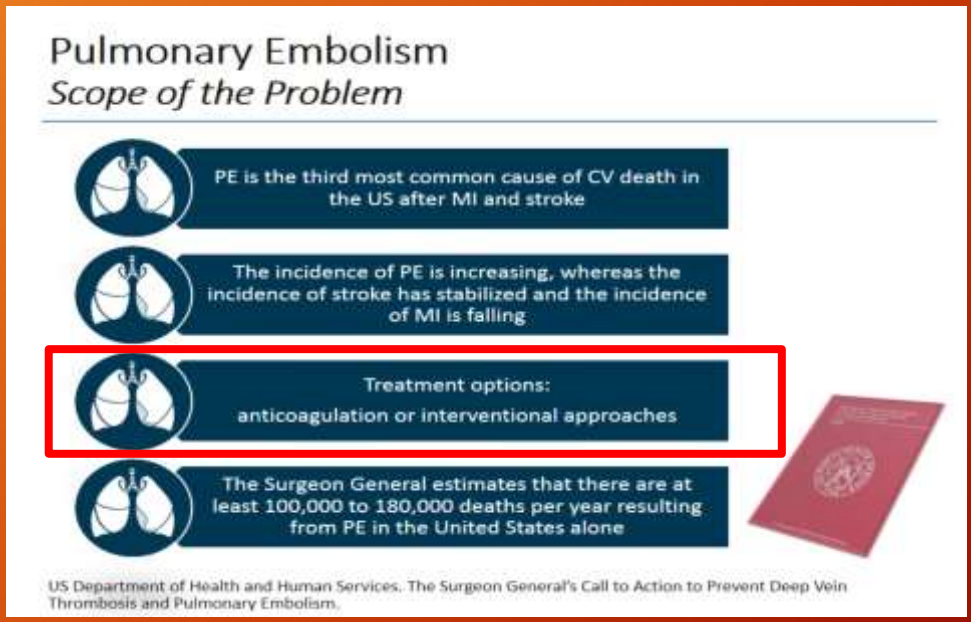


CLINICAL CLASSIFICATIONS OF PE

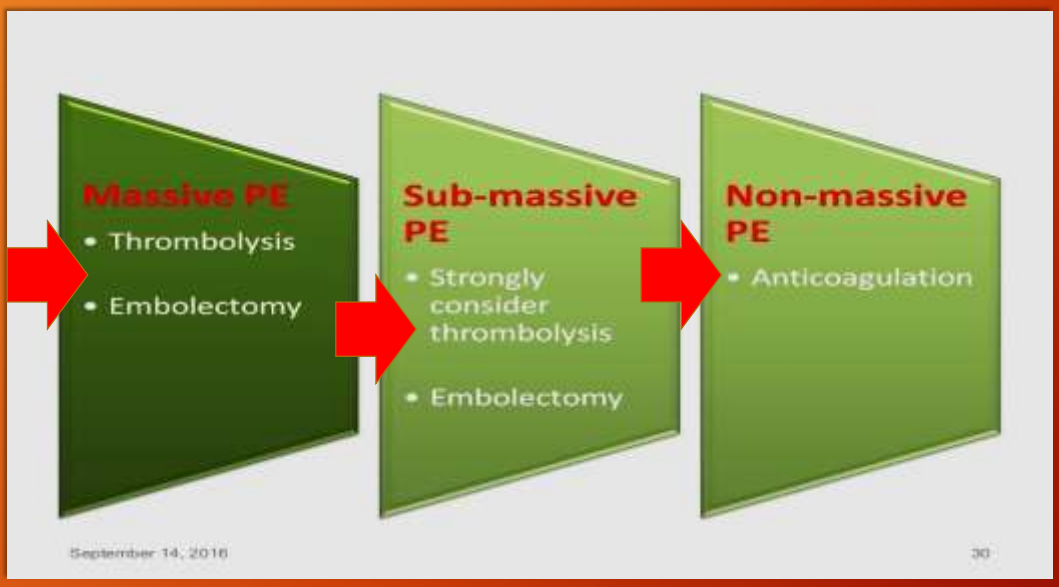




ATEF ELBAHRY-CARDIOMILITARY-2018



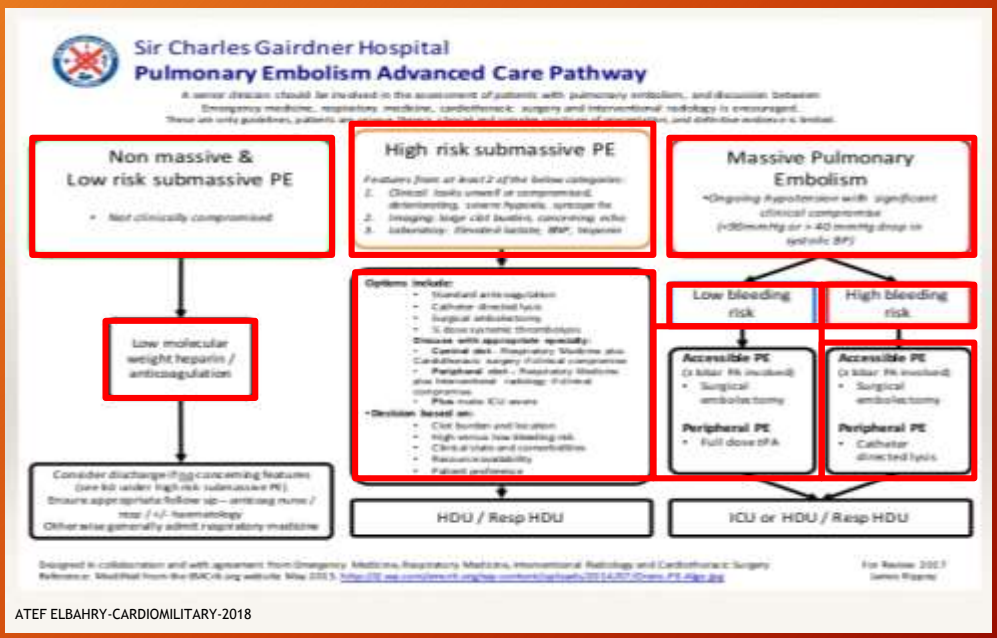
ATEF ELBAHRY-CARDIOMILITARY-2018



ATEF ELBAHRY-CARDIOMILITARY-2018

OREN ALGORITHM FOR MANAGEMENT STRATEGIES IN PE IN HIGH RISK BLEEDING PATIENTS

Scott Weingart. Podcast 128 – Pulmonary Embolism Treatment Options and the PEAC Team with Oren Friedman. *EMCrit Blog*. Published on July 14, 2014. Accessed on December 29th 2017



ATEF ELBAHRY-CARDIOMILITARY-2018

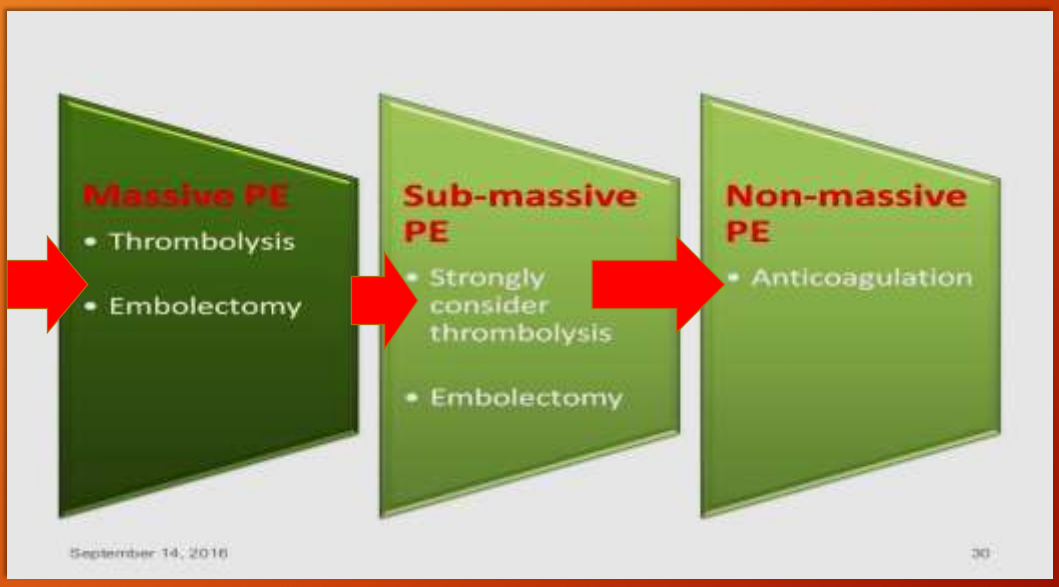
Thrombolysis

- Pros:
  - Less long-term pulmonary hypertension (MOPETT trial)
  - Clots resolve faster
  - Patients appear to improve faster clinically
  - Decreased death or haemodynamic instability (PEITHO trial)
- Cons:
  - Risk of ICH (2% in >75yo in PEITHO)
  - Risk of other haemorrhage (~6% in PEITHO)
  - similar improvement at 7 days overall (~65% reduction in size of total defect regardless of whether thrombolysed or anti-coagulated)

Intra-Arterial Thrombolysis

- Potential for same benefits as systemic thrombolysis with lower bleeding risk
- Wire passed through embolus followed by an infusion catheter with multiple openings - thrombolytic is then infused to the clot
- Evidence is lacking - SEATTLE-II trial 2015

ATEF ELBAHRY-CARDIOMILITARY-2018



ATEF ELBAHRY-CARDIOMILITARY-2018

Regimes for anticoagulation in pulmonary embolism

Figure 1 Regimes for anticoagulation in pulmonary embolism.

ATEF ELBAHRY-CARDIOMILITARY-2018 World J Hematol. Feb 6, 2015; 4(1): 1-9

2014 ESC Guidelines
Treatment of Acute PE

- Class I; Level B
  - In parallel to parenteral anticoagulation, treatment with a VKA is recommended; targeting an INR of 2.0 to 3.0
  - Replace combination of parenteral anticoagulation and VKA with anticoagulation with
    - Rivaroxaban (15 mg twice daily for 3 wk, followed by 20 mg daily)
    - **OR** apixaban (10 mg twice daily for 7 d, followed by 5 mg twice daily)
  - Following acute-phase parenteral anticoagulation, replace VKA treatment with
    - Dabigatran (150 mg twice daily, or 110 mg twice daily for patients aged > 80 years)
    - **OR** edoxaban (60 mg once daily or 30 mg once daily if creatinine clearance 30 to 50 mL/min or body weight < 60 kg)

Konstantinides SV, et al. *Eur Heart J*. 2014;35:3033-3069, 3069a-3069k.

NOACs: *VTE Acute Treatment Trials*

Trial and Drug	Recurrent VTE	NOAC vs Conventional Therapy Major Bleeding or CRNM Bleeding	Major Bleeding
Hokusai-VTE[a] Edoxaban	3.2% vs 3.5% HR, 0.89 (CI, 0.70-1.13) *P* < .001 (noninferiority)	8.5% vs 10.3% HR, 0.81 (CI, 0.71-0.94) *P* = .004	1.4% vs 1.6% HR, 0.84 (CI, 0.59-1.21) *P* = .35
AMPLIFY[b] Apixaban	2.3% vs 2.7% RR, 0.84 (CI, 0.60-1.18) *P* < .001 (noninferiority)	4.3% vs 9.7% RR, 0.44 (CI, 0.36-0.55) *P* < .001	0.6% vs 1.8% RR, 0.31 (CI, 0.17-0.55) *P* < .001
EINSTEIN-DVT[c] Rivaroxaban	2.1% vs 3.0% HR, 0.68 (CI, 0.44-1.04) *P* < .001 (noninferiority)	8.1% vs 8.1% HR, 0.97 (CI, 0.76-1.22) *P* = .77	0.8% vs 1.2% HR, 0.65 (CI, 0.33-1.30) *P* = .21
EINSTEIN-PE[d] Rivaroxaban	2.1% vs 1.8% HR, 1.12 (CI, 0.75-1.68) *P* = .003 (noninferiority)	10.3% vs 11.4% HR, 0.90 (CI, 0.76-1.07) *P* = .23	1.1% vs 2.2% HR, 0.49 (CI, 0.31-0.79) *P* = .003
RE-COVER I[e] Dabigatran	2.4% vs 2.1% HR, 1.10 (CI, 0.65-1.84) *P* < .001 (noninferiority)	5.6% vs 8.8% HR, 0.63 (CI, 0.47-0.84) *P* = .002	1.6% vs 1.9% HR, 0.82 (CI, 0.45-1.48) *P* = .38
RE-COVER II[f] Dabigatran	2.3% vs 2.2% HR, 1.08 (CI, 0.64-1.80) *P* < .001 (noninferiority)	5.0% vs 7.9% HR, 0.62 (CI, 0.45-0.84)	1.2% vs 1.7% HR, 0.69 (CI, 0.36-1.32)

a. Hokusai-VTE Investigators, et al. *N Engl J Med*. 2013;369:1406-1415; b. Agnelli G, et al. *N Engl J Med*. 2013;369:799-808; c. EINSTEIN Investigators, et al. *N Engl J Med*. 2010;363:2499-2510; d. EINSTEIN Investigators, et al. *N Engl J Med*. 2012;366:1287-1297; e. Schulman S, et al. *N Engl J Med*. 2009;361:2342-2352; f. Schulman S, et al. *Circulation*. 2014;129:764-772.

Clinically relevant non-major (CRNM) bleeding was defined as overt bleeding not meeting criteria for major bleeding but requiring medical intervention, hospitalization, temporary interruption or delayed dosing of anticoagulation, pain, or impairment of daily activities

TAKE HOME MESSAGE

1. ESTIMATION OF BLEEDING RISK IN PE IS MANDATORY IN MASSIVE & SUBMASSIVE CASES USING THROMBOLYSIS
2. HIGH BLEEDING RISK RIETE SCORE IS BETTER THAN HAS BLED SCORE IN PE PATIENTS
3. USING NOACs CAN REDUCE BLEEDING RISK COMPARING IT VKA OR UFMH

THANKS FOR YOUR KIND ATTENTION

ATEF ELBAHRY-CARDIOMILITARY-2018