OBJECTIVES:

- Discuss incidence and possible theories for rising incidence
- Discuss Morbidity and Mortality of PE in the US
- Discuss the entity of “Post-PE Syndrome”
- Review European classification system and its contrast to US classification
- Treatment approach based on European Classification System
- Describe intravascular lytic therapy – risks and benefits
- Describe intravascular mechanical extraction, risks and patient candidacy

PULMONARY EMBOLISM

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DISCLOSURES

- None related to this topic

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THE INCIDENCE OF PULMONARY EMBOLISM IS HAS INCREASED DUE TO THE FOLLOWING?

- A. Increase in new risk factors not previously associated with PE risk
- B. Improved detection techniques and awareness of PE
- C. Improved statistics for tracking DVT/PE
- D. There is a sharp decline in incidence
- E. There is no incidence increase

From: Trends in the Incidence of Deep Venous Thrombosis and Pulmonary Embolism A 25-Year Population-Based Study
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RISKS

- Men = Woman
- Age
- For every 10 years after age 60, risk doubles
- DVT
- Bedridden
- Surgery
- Chronic heart disease / HTN / Lung disease / IBD (Crohn’s and UC)
- Genetics
- 5 – 8% of the U.S. population has one of several genetic risk factors
- Inherited thrombophilias
- Smoking
- Pregnancy and up to 6 weeks post-partum
- Central venous catheters
- Obesity
- Hormone therapy
- Cancer

MORBIDITY AND MORTALITY

- Over 600,000 Americans affected each year
- Precise number of people affected by DVT/PE is unknown
- An estimated 18,000 people could be affected
- Cause more deaths than breast cancer and AIDS combined
- 10 – 30% die within 1 month of diagnosis
- Sudden death is the first symptom in ~25% of people who have a PE
- Leading cause of preventable hospital deaths in the US
- Leading cause of maternal death in the US
- One-third will have a recurrence within 10 years
- An estimated $10 billion in medical costs in the US each year can be attributed to DVT and PE

WHICH OF THE FOLLOWING IS TRUE FOLLOWING A PULMONARY EMBOLISM?

- A. One can expect complete resolution of symptoms once anticoagulation is complete.
- B. Only chronic thromboembolic disease patients with pulmonary hypertension have persistent symptoms following a PE.
- C. The pathophysiological changes of pulmonary arteries post PE are well understood.
- D. The quality of life can be decreased after acute PE compared to population controls.
- E. A pulmonary embolism will not affect mental status.
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THE POST-PE SYNDROME AFTER ACUTE PE

- CTEPH seems to be the extreme (and perhaps ultimate) manifestation of a much more common phenomenon of abnormalities
  - pulmonary artery flow
  - pulmonary ventilation
  - cardiac function after
- Underlying pathophysiology is not as clearly described or understood.

POST-PE SYNDROME

POST-PE SYNDROME QUALITY OF LIFE

- Several studies have consistently reported a decreased QoL after acute PE compared to population controls.
- In a population of 392 patients 3.5 years after PE diagnosis, patients had substantially lower QoL than population norms on all subscales.
- Study in 109 consecutive patients in an outpatient clinic two years after PE diagnosis confirmed the worse scores measured by the SF-36 in PE patients as compared to the general Dutch population.
- Lower QoL in patients after acute PE vs. DVT alone especially on the subscales physical quality of life and mental fatigue.

CHRONIC CONSEQUENCES 2 YRS POST PE

PROPOSED PATHOPHYSIOLOGICAL CASCADE OF THE POST-PE SYNDROME