Update on the risk of DVT during air travel - does the economy class syndrome really exist?

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Disclosure

Speaker name: Thomas Stadlbauer

I have the following potential conflicts of interest to report:

Study-Investigator: Bayer
Lecturer: Bayer, Daiichi Sankyo, Bristol Myer Squibb, Pfizer
Travel grant: Bristol Myers Squibb, Pfizer, Daiichi Sankyo
Does the economy class syndrome really exist?

or

What do we know about travel-associated venous thromboembolism?

Eminent based medicine

Evidence level 2c

Uptodate:
Menaka Pai, MD, FRCPC, James D Douketis, MD, FRCPC, FACP, FCCP
Prevention of venous thromboembolism in adult travelers,

Evidence level 2c

Grade 2 recommendation is a weak recommendation.

It means "this is our suggestion, but you may want to think about it." It is unlikely that you should follow the suggested approach in all your patients, and you might reasonably choose an alternative approach.

Grade C means the evidence comes from observational studies, unsystematic clinical experience, or from randomized, controlled trials with serious flaws. Any estimate of effect is uncertain.
Does the economy class syndrome really exist?

or

What do we know about travel-associated venous thromboembolism?

 Agenda:

1. Economy class Syndrom
2. Definition
3. Epidemiology
4. Risk factors
5. Selecting a method of prevention (if necessary)
6. Practical recommendations
Most prominent victim of travel-associated venous thromboembolism
Most prominent victim of travel-associated venous thromboembolism

President Nixon (1969-1974)

- VTE in 1964
- Episode of phlebitis in left leg during a trip to Japan in 1965
- VTE in 1973 during extended travel to Europe, Middle East and the Soviet Union
Travel reality for the majority
Travel-associated venous thromboembolism

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SEVERE PULMONARY EMBOLISM ASSOCIATED WITH AIR TRAVEL

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Travel-associated venous thromboembolism


Figure 1. Incidence of Pulmonary Embolism According to Distance Traveled by Air.
Values shown above the bars are numbers of cases per million passenger arrivals, with 95 percent confidence intervals. To convert kilometers to miles, multiply by 0.62.
Travel-associated venous thromboembolism

Definition?

- PE
- Symptomatic DVT
- Asymptomatic DVT
- Calf DVT
- Calf muscular venous thrombosis
- Thrombophlebitis
Travel-associated venous thromboembolism

Epidemiology

- Long-distance travel confers a small increased risk of VTE.

- The rates are higher in those who travel for prolonged periods and is greatest in the first two weeks after travel.

- The estimated risk of VTE conferred by prolonged travel increased approximately two- to fourfold.

- The incidence of VTE in travelers is low with higher rates reported when both asymptomatic and symptomatic VTE are included.

- Incidence for symptomatic VTE 1:4500 up to 1:6000.
Travel-associated venous thromboembolism

Risk Factors

- Recent major surgery (including hip or knee arthroplasty within six weeks)
- Prior VTE (including travel-associated VTE)
- Active malignancy
- Pregnancy
- Advanced age
- Use of estrogen-containing oral contraceptives or other estrogen preparations
- Obesity
- Hereditary thrombophilia

- Immobility and window seating
- The presence of two or more risk factors for VTE (eg, oral contraceptive use plus factor V Leiden mutation)
- Female gender
Travel-associated venous thromboembolism

Risk Factors

Statement:
The majority of individuals with travel-associated venous thromboembolism (VTE) have one or more known risk factors for thrombosis

- travel-related vs. personal-related

Travel-associated venous thromboembolism is not known to have a higher incidence while travelling coach class

Therefore the name „economy class syndrome“ is misleading

=> Travel-associated venous thromboembolism
Travel-associated venous thromboembolism

Method of prevention

• General Measurements => keep on moving
• Graduated compression stocking, below the knee, dynamic, class I
• Pharmacological Interventions => Test theory
Travel-associated venous thromboembolism

Test theory

1. HR: 0.84 (0.6 to 1.18) P<0.001, 5500 Pts., for noninferiority
2. US calf: sensitivity und specificity 70%
3. Incidence symptomatic VTE 1:6000

Study design n>10^6
Travel-associated venous thromboembolism

Method of prevention

- General Measurements => keep on moving
- Graduated compression stocking, below to knee, dynamic, class I
- Pharmacological interventions (individual decision, no positive interventional studies):
  - Aspirin (no evidence)
  - Low molecular weight heparin (analogous to VTE prophylaxis)
  - Factor Xa Inhibition (reality in actuality)
Take Home Messages I:
Travel-associated venous thromboembolism

• „Economy class syndrome” is misleading
  => Travel-associated venous thromboembolism

• Definition is uncertain => mostly located at the calf

• Long-distance travel confers a small increased risk of VTE
  • Most frequent manifestation is an isolated calf muscle vein thrombosis
    – a finding with questionable clinical significance

• Incidence of symptomatic VTE is low (1:6000)
Take Home Messages II: Travel-associated venous thromboembolism

- Thromboprophylaxis is not necessary for most travelers

- Majority of individuals with travel-associated venous thromboembolism (VTE) have one or more known risk factors for thrombosis
  - previous VTE
  - Malignancy

- Below the knee compression stockings can be recommended (Grade 2c)

- Pharmacologic thromboprophylaxis is not routinely indicated, it is an option for patients at particularly high risk for VTE who consider a potential decrease in travel-associated VTE to outweigh the small increased risk of bleeding
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