

نحوه برخورد با بیمار جهت پروفیلاکسی DVT در درمانگاه پزشکی خانواده

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شکایت اصلی

بیمار آقای 56 ساله مراجعه از جهت بررسی دریافت درمان پیشگیری DVT

سابقه بیماری فعلی

بیمار مرد ۵۶ساله ایرانی، با سابقه‌ی CAD و HF که عازم سفر هوایی ۱۳ساعته هستند، جهت ارزیابی برای دریافت درمان prophylaxis ترمبوز ورید عمقی مراجعه کرده‌اند.

سابقه پزشکی

Myocardial Infarction

سابقه‌ی myocardial infarction در نه ماه قبل که
تحت percutaneous coronary intervention قرار
گرفتند.

Heart Failure

Heart failure

Hypertension

Hypertension

سابقه دارويي

1. Bisoprolol: 5 mg once daily (typical range: 2.5-10 mg daily)
2. Valsartan/Sacubitril : 49/51 mg twice daily
3. Atorvastatin: 40 mg once daily
4. Pantoprazole: 40 mg once daily
5. Aspirin (ASA): 81 mg once daily
6. Clopidogrel: 75 mg once daily
7. Vitamin D: 1000 IU once daily
8. Calcium: 500 mg twice daily

Family history and allergy history: unremarkable

معاینه فیزیکی

هوشیار و اورینته، بدون دیسترس، ill و toxic نیست. سیانوتیک و pale نیست.

قادر به راه رفتن مستقل بدون وسایل کمکی

(سانتی متر 163: کیلوگرم، قد 69: وزن) BMI: 25.9 kg/m²

علائم حیاتی

- فشار خون: 128/76 میلی متر جیوه
- ضربان قلب: 62 ضربه در دقیقه (منظم و قرینه)
- تعداد تنفس: 14 تنفس در دقیقه
- دما: 36.8 درجه سانتی گراد
- اشباع اکسیژن: 97% در هوای اتاق

معاینه قلبی-عروقی و تنفسی

معاینه قلبی-عروقی

- نبض‌های محیطی: پر و متقارن دوطرفه
- صداهای قلب S1 و S2 طبیعی، ریتم منظم
- صدای سوم (S3) سمع شد

معاینه تنفسی

- تنفس طبیعی، بدون استفاده از عضلات کمکی
- صداهای تنفسی clear و قرینه دوطرفه
- بدون ویز و رال

معاینه اندام تحتانی و سایر معاینات

معاینه اندام تحتانی

- پوست :سالم، رنگ و دمای طبیعی
- بدون اریتم یا تغییرات پوستی
- بدون واریس قابل مشاهده
- ادم پری‌تیبیال مختصر در حد +1
- بدون زخم یا درماتیت استازی
- بدون ریزش مو

معاینه عصبی عضلانی

نرمال

معاینه شکم

نرم، بدون تندرنس، بدون دیستانسیون، بدون هپاتومگالی یا اسپلنومگالی

Venous Thromboembolism in in Travelers



Travel and VTE Risk

Long-distance travel by air or land confers a small but measurable increased risk of venous thromboembolism (VTE). The incidence of clinically important DVT after air travel is less than 0.05 percent, though some studies report higher rates with extended travel exceeding 4-12 hours.

Incidence Rate

Less than 0.05% for clinically important DVT
DVT after air travel

Risk Multiplier

2- to 3-fold increased risk with prolonged travel
prolonged travel

Peak Risk Window

First two weeks after travel; normalizes by
eight weeks

Risk Factors for Travel-Associated VTE

The majority of individuals with travel-associated VTE have one or more known risk factors for thrombosis. Common risk factors include those associated with VTE in general:

Major Surgery

Including hip or knee arthroplasty within six weeks

Medical History

Prior VTE, active malignancy, pregnancy

Demographics & Genetics

Advanced age, hereditary thrombophilia

Medications & Lifestyle

Estrogen-containing contraceptives, obesity

Less common risk factors include immobility and window seating, presence of two or more risk factors, and female sex.

Pathogenesis of Travel-Related Thrombosis

The precise mechanisms underlying VTE during extended travel remain incompletely understood. The primary contributing factors appear to involve hemodynamic and hematologic changes induced by prolonged immobility.

Venous Stasis

Immobility during extended travel leads to leads to reduced blood flow in the lower lower extremity veins, creating conditions conditions favorable for thrombus formation.



Coagulation Activation

Elevated levels and activation of coagulation coagulation factors (FII, FVIII, FIX, thrombin-thrombin-antithrombin III complex, and and fibrinogen) have been documented documented during prolonged travel.



Dehydration and Alcohol

While not definitively proven, dehydration dehydration may theoretically promote a coagulopathic state, and alcohol consumption may increase immobility, both potentially contributing to VTE risk.

Screening for risk factors or coagulation abnormalities prior to travel has not been studied and is not routinely recommended in clinical practice.

Prevention Strategy: Patient Selection

Thromboprophylaxis is not necessary for most travelers. Evidence-based recommendations stratify travelers by risk level to guide prevention decisions.

At-Risk Travelers	Low-Risk Travelers	Anticoagulated Travelers
Those traveling more than four to six hours with with identifiable VTE risk factors (prior VTE, recent major surgery, active malignancy) may may benefit from general measures plus graduated compression stockings.	Individuals without VTE risk factors may employ employ general preventive measures, though though their proven value is limited. These measures are generally harmless.	Those already receiving therapeutic anticoagulation for any indication require no additional VTE prevention measures during travel.

Routine pharmacologic prophylaxis (low molecular weight heparin, aspirin) lacks sufficient evidence for general use but may be considered individually for individually for particularly high-risk travelers when physician assessment determines benefits outweigh risks.

General Preventive Measures

While not formally studied in travel-associated VTE prevention, the following precautions are frequently recommended by experts and guideline committees for guideline committees for extended travel:

01

Frequent Ambulation

Walk every one to two hours during travel to promote circulation and reduce venous stasis.

02

Ankle Flexion & Extension

03

Knee Flexion & Extension

Graduated Compression Stockings

Below-knee graduated compression stockings (GCS) providing 15 to 30 mmHg of pressure at the ankle represent an evidence-supported intervention for high-risk intervention for high-risk travelers.

Evidence of Efficacy

Properly fitted, below-knee GCS worn on flights lasting at least four hours reduced asymptomatic VTE rates with a risk ratio of 0.10 (95% CI 0.04-0.25). Additionally, GCS decreased leg edema, improving traveler comfort.

These compression garments are recommended for patients considered at considered at high risk for travel-associated VTE.

Clinical Considerations

Proper fitting is essential for efficacy and comfort. Below-knee stockings are stockings are preferred, as above-knee GCS have no proven benefit in travelers in travelers and may be less tolerable.

GCS should be applied before travel and worn throughout the journey. They journey. They represent a non-pharmacologic, low-risk intervention suitable suitable for most at-risk travelers.

Evidence for Pharmacologic Prophylaxis

A small randomized trial of 249 travelers on 7-8 hour flights compared low molecular weight (LMW) heparin, aspirin, and no prophylaxis. LMW heparin reduced asymptomatic DVT (0 versus 4.8 percent), while aspirin showed no significant effect (3.6 versus 4.8 percent). No symptomatic VTE events occurred. This study requires cautious interpretation due to inadequate power, high dropout rates, and limited follow-up.

An observational study of 608 travelers within six weeks of hip arthroplasty treated with LMW heparin or warfarin showed 1 percent symptomatic DVT incidence, symptomatic DVT incidence, no pulmonary embolism cases, and 1.5 percent bleeding events. These limited studies do not establish routine pharmacologic prophylaxis as standard practice for travel-associated VTE prevention.

Pharmacologic Agents: Efficacy Considerations

In the general population, pharmacologic agents including aspirin, LMW heparin, warfarin, factor Xa inhibitors, and direct thrombin inhibitors have proven efficacy when administered for prolonged periods (months to years) in preventing recurrent VTE following unprovoked first events. However, this established efficacy cannot be assumed when these agents are administered for short periods surrounding travel.

Key Limitation

Short-term pharmacologic prophylaxis for travel differs fundamentally from long-term anticoagulation for recurrent VTE prevention. The pharmacodynamic and clinical outcomes of brief peritravel prophylaxis remain inadequately studied.

Clinical Implication

Extrapolating efficacy from long-term anticoagulation studies to short-term travel travel prophylaxis is methodologically unsound. Individual risk-benefit assessment by the treating physician is essential when considering pharmacologic pharmacologic prophylaxis for travel.

Current Recommendation

Routine pharmacologic prophylaxis for travel-associated VTE prevention is not recommended. Individualized decisions should incorporate specific VTE risk factors, prior thrombotic events, and physician judgment regarding bleeding risk.

Summary: Evidence-Based Prevention Framework

Prevention of travel-associated VTE requires individualized risk stratification and a tiered approach balancing efficacy, safety, and practicality. Most travelers require only general preventive measures, while high-risk individuals benefit from additional interventions.

Risk Assessment

Identify travelers with VTE risk factors (prior VTE, recent surgery, malignancy, thrombophilia, estrogen use, obesity) planning journeys exceeding four to six hours.

Graduated Compression Stockings

Offer properly fitted below-knee GCS (15-30 mmHg) to high-risk travelers, supported by meta-analytic evidence of reduced asymptomatic VTE and leg edema.

General Measures

Recommend frequent ambulation every one to two hours and regular ankle and knee exercises for all travelers, particularly those at risk.

Pharmacologic Consideration

Reserve pharmacologic prophylaxis for particularly high-risk individuals (e.g., prior VTE plus multiple risk factors) when physician assessment determines benefits outweigh bleeding risks. Routine use is not recommended.

This evidence-based framework optimizes VTE prevention while minimizing unnecessary intervention and associated risks in the traveling population.

سطوح پیشگیری

Primordial Prevention

Primary Prevention

Secondary Prevention

Tertiary Prevention

Quaternary Prevention

Primordial Prevention

آموزش و فرهنگ سازی به منظور کاهش رخداد ریسک فاکتورها مانند کاهش وزن یا کاهش ریسک فاکتورهای بدخیمی‌های مختلف

آموزش صحیح پزشکان و مراقبات سلامت جهت ارائه مشاوره به بیماران

Primary Prevention

ارایه مشاوره از سمت پزشکان و مراقبان سلامت جهت بررسی بروز خطر رخداد ترومبوز ورید عمقی در افراد مسافر

Secondary Prevention

بررسی و ارزیابی ریسک بروز ترومبوز ورید عمقی در افراد مسافر با خطر بروز بالا مانند افراد با بدخیمی فعال یا افراد باردار

Tertiary Prevention

استفاده از جوراب‌های فشاری در افراد مسافر مطابق با ارزیابی خطر

تجویز داروهای ضدانعقادی در افراد با خطر بالا مطابق با صلاحدید پزشک معالج

Quaternary Prevention

عدم تجویز نامناسب و بدون اندیکاسیون دارو

عدم انجام اقدامات تشخیصی و درمانی اضافی

نقش پزشک خانواده

