

Flying and Elective surgery VTE risk guideline

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| This is the most current version and should be used until a revised document is in place | | |

Key Amendment

| Date | Amendment | Approved by |
|-------------------------------|---|----------------------------|
| 21 st January 2019 | Inclusion of advice for edoxaban. Additional information for the management of medicines for diabetes | Medicines Safety Committee |
| 25 th June 2020 | Document extended for 6 months during COVID-19 period. | QGC |

Introduction

Flights for longer than 4 hours and undergoing surgery are both risk factors for development of VTE. Studies have shown that 0.3% of subjects have developed symptomatic VTE after an 8 hour flight. The risk is caused by:

- Prolonged immobilisation
- Dehydration
- Low cabin humidity and hypoxia
- Cramped sitting position

This guideline has been produced to help healthcare professionals counsel patients who wish to fly peri-operatively. It is important to follow the guidance below to help minimise the risk of VTE which can have serious consequences.

It must also be remembered that the risk of moderate length flights (4-8 hours) may be increased if there is significant land travel (coach, car or train) before or after the flight leading to a prolonged period of immobility.

Minor operations are unlikely to increase the risk of VTE such that patients with recent or upcoming travel should be not be considered at increased risk, **therefore this guideline is for patients who have elective surgery which meets one of the following criteria:**

- General anaesthetic time >30 minutes
- Operations that lead to significant immobility, including upper limb immobility
- Cancer or suspected cancer patients
- Operations that cause vascular disruption, including the use of tourniquet

Details of the Guideline

1. Scheduling Elective Surgery after Flying.

When scheduling an elective operation, information about prolonged flights should be sought as part of the pre-operative assessment. Where a patient is due to fly for over 4 hours, completely elective surgery (which meets the criteria above) should be scheduled for at least 4 weeks after the journey is completed.

For flights of between 3-4 hours elective surgery should be scheduled for at least 2 weeks after the flight. This is because there is research showing that journeys of just 3 hours are also associated with increased thrombotic risk (Watson HG et al).

This guideline advises on elective surgery, i.e. surgery which can be timed to suit the patient and the hospital. For expedited or urgent surgical cases the decision about whether to proceed will be a judgement of the risks and benefits and will require discussion with the clinicians involved.

2. Flying after Surgery

The table below gives guidance on how to advise patients who are planning to take a flight of greater than 4 hours following surgery (which fulfils criteria above).

Quick reference table

| Time between operation and flight | VTE risk category | Advice |
|--|---|--|
| < 4 weeks post surgery < 3 months post lower limb orthopaedic surgery | Risk of thromboembolism is likely to be increased | Strongly advise against flying. Seek specialist advice if unavoidable. Consider VTE prevention as per NICE guidance. |
| 4-8 weeks post surgery | Risk of thromboembolism may be slightly increased | Consider VTE prevention as per NICE guidance. |
| > 8 weeks post surgery or > 3 months post major orthopaedic surgery | Risk of thromboembolism unlikely to be increased | General Advice (See below) |

Patients taking flights for longer than 4 hours in the 4 weeks following surgery meeting criteria above have an increased risk of developing VTE. Patients flying from 4-8 weeks following surgery could still have a slightly increased risk of venous thromboembolism. It is therefore recommended that patients do not undertake flights (**of more than 4 hours**) for at least 4 weeks, and preferably 8 weeks following surgery (which meets the criteria given above).

For patients who have undergone moderate – major lower limb surgery (i.e. major joint arthroplasty, ankle fusions, tendon reconstructions) prolonged flights should be delayed for more than 12 weeks after surgery due to the increased risks of venous thromboembolism.

Patients must be advised to inform their airline, insurance company and GP if they plan to fly within these recommended time periods. They should also be counselled about reducing their risk of VTE in line with the 2013 NICE guidance *DVT Prevention for Travellers* (summarised in section 4).

3. Prolonged travel following surgery

Patients who have undergone major lower limb orthopaedic procedures should also be advised to avoid coach or car journeys lasting longer than 6 hours in the 3 months after their surgery. This is because being in a cramped, immobile position can contribute to the risk of VTE.

4. Unavoidable surgery in a patient presenting following a prolonged flight

A patient could present for elective or emergency surgery after a flight over 4 hours within the preceding 4 weeks (or a 3-4 hour flight within the preceding 2 weeks). It may be appropriate for the

healthcare team to continue with surgery after evaluating and balancing the risk of VTE and the urgency of the procedure.

The following table can be used to help assess a patient's risk for VTE and help guide the decision to continue or postpone the surgery. It should be noted that this is only a guide and the decision on whether to proceed should be made on a case by case basis.

All patients should be given general VTE advice for the post-operative period including:

- Avoid periods of prolonged immobility
- Maintain a normal fluid intake and avoid excessive alcohol which can lead to dehydration and inertia

- Seek urgent medical advice if they develop swollen painful legs or breathing difficulties
- Wear appropriate compression stockings unless contraindicated

The Trust has patient information leaflets on VTE prevention which should be provided.

| FACTOR | SCORE |
|---|--------------|
| Age 60 or above | 1 |
| BMI 30 or above | 1 |
| Active cancer or undergoing cancer treatment | 2 |
| Thrombophilic disorder | 1 |
| Pregnancy or 6 weeks post giving birth | 1 |
| Dehydration | 1 |
| On HRT or Tamoxifen or oestrogen containing contraceptive pill* | 1 |
| Varicose veins with inflammation (phlebitis) | 1 |
| Acute infectious disease | 1 |
| Health problems (hypertension, diabetes, stroke, heart and lung problems) | 1 |
| History of DVT or PE | 2 |
| Parents, sibling or offspring has had a DVT/PE in the past | 1 |
| Patient is undergoing lower limb surgery lasting longer than 60 minutes | 2 |
| Patient is undergoing general surgery lasting longer than 90 minutes | 1 |
| Patient has been on flight for over 8 hours | 2 |
| TOTAL SCORE | |

Flights > 4 hours

Score 0 = Surgery ideally delayed for at least two weeks post flight but if unavoidable consider compressions stockings for 4 weeks post-operatively. If there is going to be considerable immobility at home discuss pharmacological thromboprophylaxis with a Haematologist.

Score 1 = Surgery ideally delayed for at least two weeks post flight but if unavoidable consider compressions stockings for 6 weeks post-operatively. If there is going to be considerable immobility at home discuss pharmacological thromboprophylaxis with a Haematologist.

Score >2 = Surgery ideally delayed for at least four weeks post flight but if unavoidable consider compressions stockings for 6 weeks post-operatively. Discuss pharmacological thromboprophylaxis with a Haematologist.

*patients taking oestrogen containing contraceptive pill should be advised to withhold the pill until six weeks after the operation but counselled on alternative contraceptive measures.

Patients who are on long-term anticoagulation should have their bridging anticoagulation discussed with Haematology if they have flown >4 hours in the previous 4 weeks.

5. NICE Guidance

NICE have published guidance on reducing risk of DVT for travellers. A summary is provided below, it is highly recommended to consult the full guideline if managing a patient at risk of DVT.

Moderate Risk Patients (when prolonged flying is unavoidable)

- Offer general DVT prevention advice
 - Avoid periods of prolonged immobility
 - Maintain a normal fluid intake and avoid excessive alcohol which can lead to dehydration and inertia
 - Seek urgent medical advice if they develop: swollen painful legs or breathing difficulties
 - Obtain adequate medical insurance before they travel
- Advise the use of well fitted graduated compression stockings (see full NICE guideline)

High risk patients (when prolonged flying is unavoidable)

- As for Moderate Risk Patients
- Also seek specialist advice from a haematologist regarding whether the use of low molecular weight heparin is indicated.

References

- NICE Clinical Knowledge Summaries; DVT Prevention for Travellers; Last revised March 2013. Accessed at <http://cks.nice.org.uk/dvt-prevention-for-travellers#!scenariorecommendation:6>
- Watson H G, Baglin T P; Guidelines on travel-related venous thrombosis; British Journal of Haematology 152, 31-34, 2010
- WHO Research into Global Hazards of Travel (Wright) Project. Final Report of Phase I. WHO Document Production Services 2007. Accessed at http://www.who.int/cardiovascular_diseases/wright_project/phase1_report/WRIGHT%20REPORT.pdf
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