

TRAVELLER'S THROMBOSIS

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There has recently been intense media attention on the phenomenon of venous thromboembolism occurring in association with airline travel—the so-called ‘traveller’s thrombosis’ or ‘Economy Class syndrome’. This problem is being increasingly recognised, and it is likely that both individual patient-related factors and factors relating to the cabin environment contribute. Simple preventative measures, with particular attention to high-risk patients are now being recommended.

‘Traveller’s thrombosis’, although observed with other forms of transportation, is especially associated with airline travel. Venous thromboembolism following an airline flight has also been called ‘Coach Class thrombosis’, although it has now been recognised that it also occurs in First and Business Class travellers. Recent media attention has highlighted this syndrome, with one hospital close to London’s Heathrow Airport reporting 30 deaths in the last three years, a third of whom were travellers from Australia. A recent British House of Lords report concluded that further research into the syndrome was warranted.

It is believed that of all acute venous thrombotic events, [pulmonary emboli (PE) and deep venous thrombosis (DVT)], transportation is a possible aetiological factor in 5-13% of cases. However, it should be noted that with over 1 billion airline travellers each year, this disease has a very low incidence. There has been great difficulty in establishing its true incidence, with no controlled clinical studies available. In a retrospective study of 254 patients with DVT or PE, 44 developed symptoms during or after air travel. In a further retrospective questionnaire-based study in 1999, 121 patients with a mean age of 55 years were described, 77 of whom had experienced a DVT, 39 a PE secondary to a DVT and four an apparently isolated PE following airline travel. A prospective study identified small clots in 10% of all passengers monitored. However, a recent large study in the *Lancet* compared 788 patients with venous thrombosis with controls with similar symptoms but no thrombosis, and found that there was no increased risk of DVT in patients who had recently travelled.

In general, flight times associated with this syndrome are between 5 and 17 hours; with a mean duration in one large study of 12 hours. Symptoms may present during the first 24 hours of the airline flight or up to two weeks later. A number of patient-related risk factors have been identified, including a history of DVT (34% of cases), chronic disease or malignancy (25%), hormone therapy (16%), recent lower limb injury (11%) and recent surgery (9%). Cabin-related factors which may contribute to thrombosis are believed to

include the decreased humidity and relative hypoxia of cabin air, in association with the diuretic effects of excess alcohol and decreased fluid intake. Other factors that may contribute are smoking and immobilisation and, of course, there is the controversial issue of coach position. The effects in healthy male volunteers of a simulated hypobaric environment similar to airline flight demonstrated dehydration of up to 1 litre of fluid and a 2-8-fold increase in the markers of activated coagulation.

There is no consensus on appropriate prophylaxis for this syndrome and certainly no scientifically-based data exists. However, some sensible guidelines that may be recommended include the following:

- Patients currently anti-coagulated with warfarin should be within the desired therapeutic range when embarking on long distant flights.

- Patients at particularly high risk, those with a history of previous thromboembolism and who are not currently anti-coagulated, for example, may benefit from a single prophylactic dose of low molecular weight heparin shortly

before travelling. This is likely to provide adequate prophylaxis for up to 18-24 hours following the injection. This approach is especially recommended for patients with previous DVT/PE with congenital or acquired risk factors (e.g. patients with Factor V Leiden or obesity).

- There is no evidence that aspirin has any prophylactic effect against DVT and pulmonary emboli in this setting. However, some data supports its use as prophylaxis in the surgical setting, and this approach may be considered for some

patients.

- General precautions include avoiding drinking alcohol to excess, maintaining an increased fluid intake and simple leg exercises during flights, especially for prolonged flights.
- It is likely that airlines will soon recommend increased in-flight precautions and print warnings about the syndrome on tickets.

References

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