

**Letter to the editor:
TNF alpha and transport on passenger aircraft**

Sir,

One aspect of the improvement in the quality of life of patients with rheumatoid arthritis (RA) is that they are now able to travel more easily. This has been aided by the advent of "biologic agents" and the increasing availability of affordable air travel. This however, can and has raised problems with issues of drug transportation. We would like to report a case presenting difficulties in the transport of anti TNF-alpha.

A 28 year old female patient had been diagnosed with seronegative RA when she presented with synovitis in her right elbow and right knee four years earlier. She was treated initially with sulphasalazine to some good effect. Methotrexate was then tried, but neither was efficacious alone. Steroids were also tried at varying doses both orally and intravenously, but all failed to control her disease. Two years after diagnosis, at the age of 26, she was commenced on adalimumab (an anti TNF-alpha) with excellent results. She is currently continuing on this with methotrexate and sulphasalazine. The patient was working when she presented and despite the disease has maintained her career in administration.

In 2006, she went on a 4 week holiday to Australia, having sought advice from the Clinical Nurse Specialist but not from the airline. Our rheumatology unit had provided a cool storage bag for transport of the drug, adalimumab (Humira™) as it needs to be kept at 2-8°C. Adalimumab comes as a solution for injection in a pre-filled syringe. This bag did have a separate compartment below the base for a water filled ice pack. Unfortunately, the flight attendant placed dry ice in the cool bag itself, resulting in the Humira being frozen. Advice from the manufacturer (Abbott) was not to use the product, as freezing can cause protein instability. With more of our patients being able to take anti TNF-alpha, and the global increase in long haul travel this may become an increasing problem. Health care workers involved with the initial prescription, supply and dispensing of such drugs need to be aware that this issue may arise.

Of the 3 anti TNF-alpha drugs available, intravenous therapy such as infliximab (Remicade™) is clearly more problematic in organising administration overseas. Both adalimumab (Humira™) and etanercept (Enbrel™) are usually self-administered by the patient. Drugs are available reconstituted or as powder for reconstitution. Adalimumab however requires only one injection every 2 weeks, and so travel plans can often be made around dosages, obviating the need for any drug transport issues at all. Etanercept comes as a powder and the recommended storage temperature is also 2-8°C. It is however, packaged in dose trays, which contain all the requirements of preparing and administering the drug. Etanercept also has the benefit of being safely stored at up to 25°C, for up to 7 days, as stability of the compound is not compromised. However frequency of administration is twice weekly, therefore the drug will need to be transported more often.

The drug should be carried by the patient, as opposed to being placed with hold luggage, due to the uncertainty of temperature maintenance and the possibility of losing luggage entirely.

Advice for the individual traveller is dependent on the airline. For example, British Airways allows syringes/injection pens carried for the treatment of diabetes or anaphylactic shock

on board the plane if accompanied by a medical certificate. Medication required during the flight can go in the aircraft cabin, with the passenger. They will not refrigerate medication and suggest that 'in the unlikely event that your drugs need to be kept cool, a cool bag or vacuum flask may be appropriate' (www.baa.co.uk). The Air Transport Users Council (www.caa.co.uk) advises passengers to check with the airline what they will allow and how they can help prior to booking.

The United States Transportation Safety Administration states that 'All medications in any form or type (for instance, pills, injectables, or homeopathic) and associated supplies (syringes, sharps disposal container, pre-loaded syringes, jet injectors, pens, infusers, etc.) are allowed through the security checkpoint once they have been screened.' Atropens are also allowed. Medications should however be labelled so they are identifiable and will be screened, and normally x-rayed (www.tsa.gov/public).

International Air Transport Association (IATA) airlines carry 94 percent of all international scheduled air traffic. They suggest that individuals make their own enquiries whilst booking with the airline (www.iata.org)

Despite such advice patients are finding it difficult to get help. This is evident on Internet message boards, where people ask for advice. There are also cases of airlines refusing to carry syringes.

Diabetes sufferers have clear advice on air travel. Clear guidance and advice to rheumatology patients and health professionals from the BSR would also be helpful.

Other than the reduction of joint damage and pain, treatment should enable an improved quality of life for our patients. It seems a pity that after lobbying so hard to allow our patients access to anti TNF-alpha treatment, patients cannot enjoy their improved health by an increased ability to travel or that drugs are wasted as in this case. Finally when it comes to the actual prescription, the choice of drug should be taken into consideration and reflect this aspect of a patient's lifestyle.

Yours sincerely

Dr N. Kumar Consultant Rheumatologist

Mr Ray Dewar Clinical Nurse Specialist

Dr Alexis Chuck Consultant Rheumatologist

University Hospital of North Durham