

Overseas travel and pregnancy – pre-travel guidelines and advice

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Travelling overseas has been shown to be associated with a wide range of illness, much of which is largely preventable¹. In 2005, approximately 24 per cent of Australians², including women in various stages of pregnancy, travelled overseas to areas of significant risk. Regardless of destination, it is important for physicians to discuss appropriate preventive pre-travel advice with their patients. The potential risks of appropriate vaccinations and antimalarial prophylaxis need to be weighed up against the preventive benefits they offer. Due to increasing complexity and rapid changes in information about current health recommendations and legal requirements, this area is increasingly being managed collaboratively between physicians and expert travel health clinics.

The main concept for both patient and doctor to initially discuss is risk versus benefit. Travellers should be made aware that even without travel, a normal pregnancy has its own common problems which although not serious may spoil an overseas trip. These include nausea, reflux, tiredness, back pain, urinary frequency, constipation and haemorrhoids. More serious problems may include thrombophlebitis, hypertension, pre-eclampsia, spontaneous miscarriage, ectopic pregnancy and premature labour.

The physician should inquire about obstetric and general medical risk factors and advise the patient that appropriate medical care may be difficult to access. The traveller should be advised to stay within reasonable proximity to medical health services.

The best time to travel is generally the second trimester as symptoms and risk are least at this time. Airlines generally advise against travel and decline insurance cover after the 35th week.

Air travel per se is generally thought to be safe in terms of level of oxygenation and cosmic radiation. Higher risk situations include areas with endemic chloroquine-resistant *Plasmodium falciparum* infection, areas requiring live viral vaccines (eg yellow fever vaccination is a legal requirement for some countries in tropical

South America and sub-Saharan Africa), endemic areas or areas with epidemics of food- or insect-borne infections and high altitudes with decreased oxygenation³.

Malaria (see Table 2)

The World Health Organisation (WHO) recommends avoiding malarious areas in pregnancy. Malaria in a pregnant woman increases the risk of maternal, fetal and neonatal death, while antimalarial medications may cause significant problems to both mother and fetus¹.

For women at risk, prophylaxis with antimalarial medications is recognised to be safer than the risk of life-threatening malaria, although each individual situation needs to be assessed. Chloroquine and proguanil are generally considered relatively safe in pregnancy. Doxycycline is contraindicated because of the risk to the fetus. Mefloquine appears to be safe in the second and third trimesters^{1,4}.

Insect avoidance measures should be discussed including the use of DEET-containing repellants, clothing impregnation with pyrethrum and the use of mosquito nets⁵.

Vaccines (see Table 1)

In general, live vaccines should be avoided unless the advantages of vaccination significantly outweigh the risks. Although there may be risks from any vaccine, there is little documented evidence for teratogenic effects from vaccines per se, this being more likely from fever alone^{1,6}. A pregnant woman intending to spend time in Ghana will be at significant risk of yellow fever and so, following discussion of the relative risks, she may elect to be vaccinated. Only WHO authorised yellow fever clinics are able to provide these vaccinations along with an International Certificate of Vaccination. A current listing of clinics is available at in the 'Yellow Fever' section under 'Further Information' at www.smartraveller.gov.au/tips/travelwell.html.

The administration of killed or inactivated vaccines, polysaccharides and toxoids is not contraindicated in general, although the same considerations still apply^{4,6}.

Vaccines currently considered relatively safe in pregnancy now include tetanus, diphtheria, hepatitis B and influenza. There is inadequate information to make conclusive statements on the use in pregnancy of vaccines for meningococcal meningitis, Japanese encephalitis, hepatitis A and typhoid and the new oral cholera vaccine^{4,6}. A rule of thumb is that vaccines should be given only when there is a real risk of disease.

Table 1: Vaccinations in pregnancy

| Vaccine | Type | WHO & CDC use in pregnancy ^{1,4} (avoid 1st trimester) | NHMRC use in pregnancy ⁶ (avoid 1st trimester) | Comment |
|-------------------------------|----------------------------------|--|--|---|
| BCG | Live attenuated mycobacteria | No | No | Avoid pregnancy for 28 days after vaccination |
| Cholera (oral vaccine) | recombinant B subunit/whole cell | Safety not determined | Safety not determined | |
| Hepatitis A | Inactivated virus | Yes if indicated | Yes if indicated | |
| Hepatitis B | Recombinant | Yes if indicated | Yes if indicated | |
| Influenza | Inactivated virus | Yes if indicated. In some circumstances | Yes if indicated | |
| Japanese encephalitis | Inactivated virus | Safety not determined | Yes if indicated. Avoid unless at high risk | |
| Measles | Live attenuated virus | No | No | Avoid pregnancy for 28 days after vaccination |
| Meningococcal | Polysaccharide or conjugate | Yes if indicated | Safety not determined | |
| Mumps | Live attenuated virus | No | No | Avoid pregnancy for 28 days after vaccination |
| Poliomyelitis IPV | Inactivated virus | Yes if indicated. Normally avoided | Yes if indicated | |
| Rubella | Live attenuated virus | No | No | Avoid pregnancy for 28 days after vaccination |
| Tetanus/Diphtheria | Whole cell toxoid | Yes if indicated | Yes if indicated | |
| Tetanus/Diphtheria /Pertussis | Acellular toxoid | Safety not determined | Safety not determined | |
| Rabies | Inactivated virus | Yes if indicated | Yes if indicated | For post-exposure |
| Typhoid Ty21a (oral) | Live attenuated bacteria | Safety not determined | Safety not determined | |
| Typhoid Vi | Polysaccharide | Safety not determined | Safety not determined | |
| Yellow Fever | Live attenuated virus | Yes if indicated. Avoid unless at high risk | Yes if indicated. Avoid unless at high risk | Avoid pregnancy for 28 days after vaccination |
| Immunoglobulins | | Yes if indicated | No known risk to fetus | For post-exposure |

Table 2: Malaria prophylaxis in pregnancy

| Malaria prophylactic medication | Use in pregnancy ⁴ | ADEC Pregnancy Category | Comment |
|---------------------------------|-------------------------------|-------------------------|---|
| Atovaquone-proguanil | No | B2 | Safety not determined. Folate supplementation required |
| Chloroquine | Yes | A | For prophylaxis |
| Doxycycline | No | D | Contraindicated |
| Mefloquine | Yes | B3 | Avoid 1st trimester |
| Proguanil | Yes | B2 | Folate supplementation required |

Air travel and thrombosis

Deep vein thrombosis may occur both on and off aircraft, with or without pregnancy. Definitive evidence of air travel being a cause of thromboembolism is still lacking. However, risk factors for the pregnant traveller are well-recognised and include immobilisation, cramped position, insufficient fluid intake, low humidity and hypoxia. Most of these can be prevented if appropriate advice followed, such as regular calf exercises, moving around the cabin every two hours, adequate fluid intake and avoidance of diuretics, including excessive alcohol or caffeine. This advice also applies to car, bus and train travel.

Those with a past or family history of recurrent thrombosis should be screened for the Factor V Leiden gene, as this is a well-recognised cause. Higher risk travellers should wear below-knee supportive stockings and use self-injectable antithrombotic agents. Aspirin is an

antiplatelet agent, most effective on the arterial rather than venous side, and in fact may be associated with higher risk of morbidity.

Food and waterborne disease

Gastrointestinal illness occurs in 50–80 per cent of travellers¹ and so it is important to ensure travellers are aware of preventive measures. A simple rule is 'boil, cook, bottle or peel', which means advising the traveller to eat only boiled or cooked food, pasteurised dairy, water and fluids from bottles or cans, and vegetables and fruit washed with treated water and /or peeled⁵. This will minimise the risk of diarrhoeal illness from common causes and in particular toxoplasmosis and listeria which have extra risks in pregnancy.

Conclusion

Providing the above precautions are taken, most pregnant travellers will have safe and satisfying trips. It is important for physicians to carefully discuss concerns about the risk of vaccines and medications and balance this against the risks of illness to both mother and fetus. Both verbal and written information needs to be supplied to the patient, time allowed for consideration of these risks and benefits and the decisions documented.

References

1. World Health Organization. *International travel and health: vaccination and health advice*. Geneva: WHO, 2005. www.who.int/ith (Cited 21 April 2006)
2. ABS (Australian Bureau of Statistics), *Overseas Arrivals and Departures, Australia* (3401.0) 2005 (Cited 21 April 2006)
3. Cohen J. *Travel Clinics Australia Reference Manual* 2nd ed, The Travel Clinic 2006.
4. Sutton M. 'Advising Travelers With Specific Needs' Chap 9 in *Travelers Health: Yellow Book. Health Information for International Travel*. Centres for Disease

Control, 2005-6. <http://www2.ncid.cdc.gov/travel/yb/utl/ybGet.asp?section=special&obj=pregnant.htm> (Cited 21 April 2006)

5. Cohen J. *The Travellers Pocket Medical Guide and International Certificate of Vaccination* 5th ed Travel Clinics Australia 2005

6. National Health and Medical Research Council. *The Australian Immunisation Handbook* 7th ed. Canberra: NHMRC, 2003. www.health.gov.au/pubhlth/immunise/publications.htm (Cited 21 April 2006)

7. ACOG (American College of Obstetricians and Gynaecologists) *Guidelines Immunisation During Pregnancy*. http://www.acog.org/from_home/publications/misc/bco282-1.cfm#table1 (Cited 21 April 2006)

Websites

www.smartraveller.gov.au
www.travelclinic.com.au
www.pregnanttraveler.com/Index.htm
www.babycenter.com.au
www.who.int/ith
www.cdc.gov/travel/

AGES CLINICAL RESEARCH FUND GRANTS TO AGES MEMBERS – FELLOWS CALL FOR SUBMISSIONS: 2007 GRANTS



AGES has established a Clinical Research Fund with major contribution from Stryker Australia, Platinum Sponsor of AGES. The Society has undertaken to make available a total of up to \$300,000 over three years for research into gynaecological surgery and its impact on improvements in women's health.

An AGES Subcommittee, chaired by Professor Ian Fraser, will assess applications and allocate grants. Other members of the Subcommittee are: Dr David Munday, Professor Peter Maher, A/Professor Thierry Vancaillie and Dr Michael Cooper. Ex-officio Subcommittee members are: Dr Rob O'Shea, A/Professor Alan Lam and Dr Geoff Reid.

Preference will be given to projects primarily involving research into endoscopic surgery. Applicants should bear in mind when budgeting that more than \$30,000 is unlikely to be awarded for any one application in any one year. Both short and medium-term projects will be considered. AGES wishes to fund a mix of concurrent projects, undertaken by Fellows at various levels of seniority.

Applications are invited from AGES members and should include:

1. A clear and comprehensive project outline, supplemented by a detailed protocol.
2. Clear indications of how the project will improve women's health.
3. A specific time-line for progress of the project.
4. Information about the process for obtaining Ethics Committee approval.
5. Comprehensive costings and a detailed project budget.
6. A current curriculum vitae from all applicants.

Successful applicants are required to present during the Clinical Research Grant Session at the AGES Annual Scientific Meeting.

A comprehensive package with advice on preparation of applications can be obtained from the AGES Secretariat. **The closing date for submissions is Friday 29th September 2006.**

All submissions (by electronic submission only) and enquiries:

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