

Policy on Pregnancy in the Antarctic and Arctic

Introduction

Following consultation with one of Derriford Hospital's experienced obstetricians who has worked in remote areas, the Diving Diseases Research Centre (DDRC) and reference to textbooks to ensure that the UK statistics used are evidence based, the following policy document regarding pregnancy in the Antarctic and Arctic has been written. However, where there is a lack of any evidence recommendations are based on our experience.

Part of this policy is also based on MGN 112 (M+F), New and Expectant mothers: Merchant Shipping and Fishing Vessels (Health and Safety at Work) Regulations 1997 and Merchant Shipping (Medical Examinations) Regulations 1983.

While pregnancy can in many ways be considered a "normal" state for a healthy adult female, the complications of pregnancy strike with sudden and unexpected speed, making the majority of them true medical emergencies which require immediate attention by trained personnel.

Problems occurring in pregnancy

Ectopic pregnancy

Risk: This is the development of the foetus outside the womb, usually in the tube leading from the ovary to the womb. The risk is higher in people with previous inflammatory disease of the pelvis. It occurs in less than 1% of pregnancies in people with normal tubes overall, with highest risk in weeks 6 to 10 where it is probably about 3%. Once over 12 weeks the risk of this occurring is low.

Consequence: Foetal mortality 100%. Maternal Mortality in UK approaches 10% usually due to haemorrhage. In Rothera / Halley / KEP this risk must be considerably higher, possibly approaching 50%, due to reduced facilities and there being only a single handed doctor. The doctor has been shown how to undertake the necessary surgery and could be supported from UK. In other areas in the Antarctic or Arctic maternal mortality must also be considered to possibly rise to 100% due to difficulties in evacuation in a timely manner.

Spontaneous abortion (miscarriage)

Risk: Overall risk is difficult to quote. It occurs in about 15% of pregnancies in the UK in women under the age of 35, but this is a diverse population and theoretically the risk may be slightly lower or higher in any given individual. The older the patient the more likely risk of miscarriage. 35 is old in this respect.

The majority of these occur in the first 16 weeks. Risk reduces from about 14 weeks. It is still possible up to 22 weeks.

The commonest complication is continued haemorrhage usually due to retained products of conception. This is common up to 14 weeks during which time an uncomplicated complete abortion only occurs in about 20%. In those

in whom products are retained surgical treatment is needed but can in most cases be delayed for up to 7 - 14 days with relative safety.

More serious complications include sepsis in the womb which can occur at any stage, and rupture of the uterus which is rare.

Consequence: Foetal mortality 100%. Maternal mortality <1% in uncomplicated, rising to 2% with haemorrhage in UK. In the Antarctic and Arctic this must again rise probably to about 10%, higher in the field. With severe complications it could be up to 50% mortality.

Other risks of pregnancy

Risk: In a young woman the other risks of pregnancy include high blood pressure, pre-eclampsia, eclampsia, and haemorrhage. The risks of all of these increases greatly from 20 weeks gestation onwards.

Consequences: Foetal mortality from <5% in hypertension, to 100% in severe haemorrhage at 20 – 25 weeks. Maternal mortality from 2% in eclampsia to 30% in late haemorrhage. (All figures for an Antarctic base or the Arctic. Will be much higher in the field).

Pregnancy occurring prior to departure to the Antarctic or Arctic

Recommendations:

Anyone known to be pregnant should **not** serve in the Antarctic or the Arctic.

Pregnancy occurring in the Antarctic or Arctic

Recommendations:

Everyone serving in the Antarctic / Arctic has a responsibility to minimise the chance of personnel becoming pregnant. Every effort to ensure adequate contraception should be used. (see below).

In the event that someone might become pregnant whilst serving on a trip in the Antarctic or Arctic they will be **evacuated** as soon as is practically possible.

Anyone who deliberately conceals pregnancy is putting themselves, the baby, and other base members potentially at significant risk.

Whilst evacuation is being organised: it will be necessary to assess the health and safety of the person concerned.

The following recommendations are made following review of MGN 112 (M+F) and will be of relevance on bases in the Antarctic or Arctic where working life involves manual handling or working with potentially toxic substances:

A) If there is a significant risk at work to the safety or health of an expectant mother the following steps must be taken to remove her from the risk:

1. Temporary adjustment of working conditions and/or hours of work; if this is not reasonable, or would not avoid the risk then,
2. Provision of suitable alternative work, if any is available; or, if that is not feasible then,
3. Suspension from work (paid leave) for as long as necessary to protect her safety or health or that of her child.

These actions are only necessary where there is genuine concern as the result of a risk assessment.

B) Compliance with specific regulations (e.g. on handling of dangerous goods) will normally be enough to reduce the risk, but consideration should always be given to removing the hazard or completely preventing exposure to the risk. Where this is not feasible, the risk should be controlled.

C) Special consideration must be given to an expectant mother who works at night, and obtains a medical certificate stating that night work could affect her health and safety. The Employment Rights Act 1996 Section 66 to 68 states that with a doctor's certificate she has the right to be offered suitable alternative work under the same terms and conditions as her normal terms and conditions of her employment.

Diving and Recreational Activities

Whilst in the Antarctic, Arctic or on board ship the expectant mother will not be considered fit to dive, as there is serious risk to the foetus.

Other trips into the field will be limited to 2 hours distance from base for up to one day, and only if deemed safe to do so by the doctor on base or on board ship.

Contraceptive advice

BASMU have a high incentive to prevent pregnancy in the Antarctic or Arctic. This is not only to protect the wellbeing of the mother and foetus but also the distress caused by early return from projects undertaken on placement away from the UK.

There is a strong emphasis on advice and promotion regarding safe sex and contraception, which should apply equally to both males and females. BASMU Doctors can advise on the range of contraception available.

Post coital contraception (the morning after pill) is not reliable enough to be considered routine contraception and should only be used in the event of possible failure of other methods.