



GROWN UP CONGENITAL HEART DISEASE (GUCH) AND PREGNANCY

Most patients with congenital abnormalities of the heart can have successful pregnancies and most pregnant patients with simple congenital heart disease, whether operated on or not, are delivered safely in local obstetric units. However, certain conditions may be adversely affected by the changes which occur in pregnancy so that some mothers are 'at risk' of complications, and these can affect their babies. Such patients require special care by an expert team. A few conditions due to congenital heart disease present a danger to the mother's health during pregnancy, the delivery, or even her life.

'At Risk' heart disease requiring special care and expertise in GUCH

- All blue patients - "Cyanotic GUCHs".
- Pulmonary hypertension from any cause and at any level.
- Important aortic stenosis and other left ventricular outflow tract, abnormalities such as aortic regurgitation, or subaortic stenosis.
- Important mitral valve disease.
- unopened coarctation and operated coarctation with residual narrowing, other lesions or complications.
- Marfan's syndrome.
- Predisposition to arrhythmia's.
- Previous Fontan-type surgery for complex heart disease.
- Patients with severe breathlessness or heart failure (Ability index 3 and 4, or NYHA classification 4).
- Mechanical valve replacement or valve disease requiring anticoagulants.

Pre-pregnancy counselling

It is most important that the prospective father is part of these discussions. The woman should ideally know before embarking on a pregnancy whether it may lead to a deterioration in her condition (and place her at special risk); the likelihood of her having a normal baby and the effects on the rest of her family if she is adversely affected. She will also need to know the exact diagnosis and whether she has one of the conditions, which may put her life at risk (see above).

Normal physiological changes of pregnancy

- Blood volume and cardiac output start to increase by 12 weeks to about 50% in the second trimester.
- The heart rate rises and stroke volume increases.
- Vasodilatation occurs in the small peripheral arteries so that diastolic blood pressure falls in the second trimester. This helps some heart conditions but upsets others such as cyanotic heart conditions.
- Risks of thromboembolism increase.
- During delivery each contraction squeezes 500ml of blood into the circulation. This may precipitate acute symptoms in some conditions.

Management recommendations

- Mothers with special risk heart conditions should consult with their general practitioner about referral to a specialist centre with experience in managing Grown-Up Congenital Heart Disease.
- However, most people with simple congenital heart disease (both operated and unoperated) are safely delivered in local obstetric units.
- It is important to ensure that patients are not taking teratogenic drugs. ACE inhibitors need to be stopped pre-pregnancy.
- Cardiac scanning of the fetus is desirable with counselling by experts if an abnormality is detected.
- Certain anomalies create special problems: eg there is a need for aspirin in those with an atrial septal defect.
- Protection from endocarditis: intravenous amoxicillin is given when the membranes rupture, for all lesions except pulmonary valve stenosis, atrial septal defect and closed duct. Other antimicrobials eg erythromycin can be used if the patient is allergic to penicillin.
- Cardiac function may deteriorate in certain patients in the year following pregnancy so that expert supervision must continue after delivery. A decision needs to be taken about whether or not further contraception or tubal ligation is required.