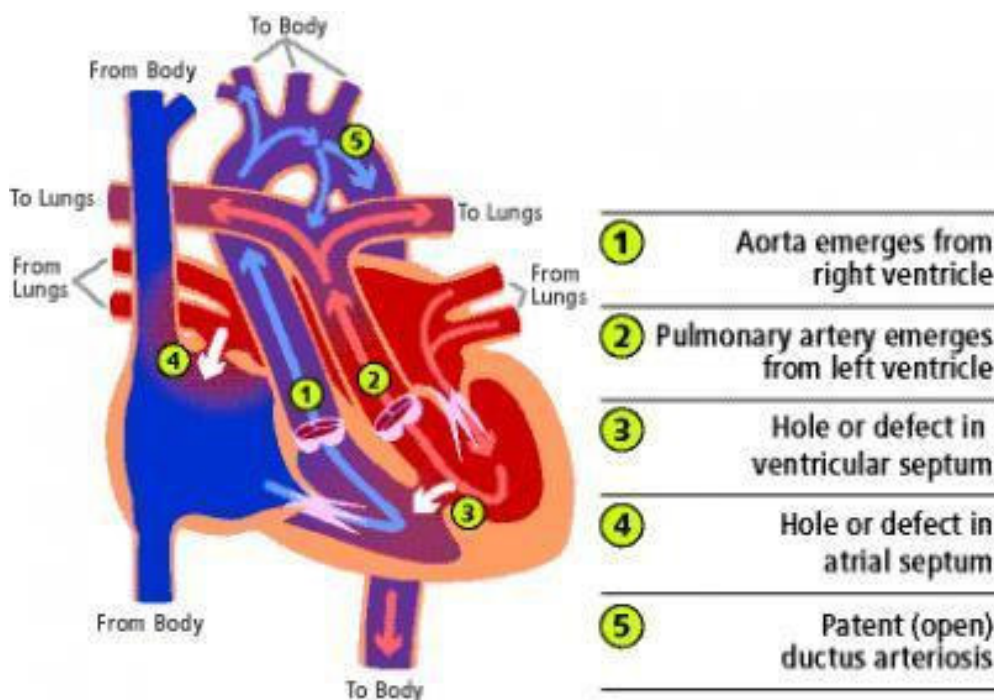


TRANSPOSITION OF THE GREAT ARTERIES (TGA)

What is transposition of the great arteries (TGA)?

The heart is divided into two sides with four chambers. The left side of the heart receives oxygenated blood from the lungs and then pumps this blood to the body via the aorta. The right side of the heart receives deoxygenated blood from the body and pumps it to the lungs via the pulmonary artery where the blood is oxygenated. The left side of the heart is made of the left atrium and the left ventricle. The aorta comes off the left ventricle. The right side of the heart is made of the right atrium and right ventricle. The pulmonary artery comes off the right ventricle.

In transposition of the great arteries the aorta comes off the right side of the heart instead of the left, and the pulmonary artery comes off the left side of the heart, instead of the right. The body is now being supplied with deoxygenated (blue) blood that is not going to the lungs to be oxygenated, and the lungs are continually being supplied with oxygenated (red) blood. As a result the baby appears blue (“cyanosed”).



<http://www.sciencedaily.com/releases/2007/12/071217092926.htm>

Does this occur commonly?

Heart problems occur in about 1% of all babies. TGA's make up about 3-5% of all heart problems. The cause for this condition is not known and it occurs very early in the pregnancy. It is slightly more common if the mother has diabetes.

fact sheet

Can there be other problems with my baby's heart?

A TGA may be associated with a hole (or defect) between either the atria or ventricles. This is known as an atrial septal defect (ASD) or a ventricular septal defect (VSD). A small vessel that connects the aorta and the pulmonary artery, the ductus arteriosus may remain open (patent ductus arteriosus [PDA]), instead of closing off as it should after birth. The medical staff will let you know if your baby has any of these problems.

How will this affect my baby?

The baby's body is not being supplied with enough oxygenated blood. If this situation continues, the baby will become very unwell from lack of oxygen supply to the body and could die. A VSD will allow some mixing of oxygenated and deoxygenated which may provide the baby's body with slightly more oxygen. The PDA remaining open will also allow some mixing of blood. Because the lungs are continually being provided with oxygenated blood, giving oxygen to the baby to breathe will not improve the oxygenation of the body.

How is TGA diagnosed?

Babies with a TGA will appear blue ("cyanosed") in the first few days of life. Your baby will have a number of investigations performed including a chest x-ray, blood gas analysis and an echocardiogram (ultrasound) of the heart. The ultrasound of the heart will confirm the diagnosis.

What treatment will my baby need?

The first treatment will be to provide your baby with a medication called prostin that will help try and keep the ductus arteriosus open, to allow some mixing of oxygenated and deoxygenated blood. This medication is given through an intravenous line. A side effect of the prostin may mean that your baby has periods where he/she stops breathing ("apnoeas"). If this occurs your baby will require assistance with his/her breathing with a ventilator. We may need to give your baby some sodium bicarbonate to counteract any acids that may be building up due to the body not receiving enough oxygen.

This heart condition requires two further procedures, neither of which can be provided in Canberra and will require transfer of your baby to one of two hospitals in Sydney. The first procedure is called an atrial balloon septostomy. A small cut is made in the groin and a special catheter is inserted into the big blood vessels and is guided into the heart using ultrasound. This catheter is passed through a hole between the two atria called the foramen ovale (present in all babies). At the end of the catheter is a balloon that is then blown up making the hole between the two atria larger, to enable better mixing of the blood. Following this procedure a time will be made for the final surgical procedure, called an arterial switch operation. This involves dividing the aorta and the pulmonary artery from the point where they leave the heart and reconnecting them to the correct sides of the heart. The atrial balloon septostomy and surgical procedures will be discussed with you in more detail by the cardiologists and paediatric cardiac surgeons in Sydney. Survival with these procedures is around 95%, however, without this surgery only 50% of babies would survive.

If you have any further questions please ask the medical and nursing staff.