Whiston Hospital
Warrington Road,
Prescot, Merseyside, L35 5DR
Telephone: 0151 426 1600

St Helens Hospital
Marshalls Cross Road,
St Helens, Merseyside, WA9 3DA
Telephone: 01744 26633

Southport Hospital
Town Lane, Kew,
Southport, Merseyside,
PR8 6PN
Telephone: 01704 547 471

Ormskirk Hospital
Dicconson Way, Wigan Road,
Ormskirk, Lancashire, L39 2AZ
Telephone: 01695 577 111

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Patent Ductus Arteriosus (PDA)

Patient information leaflet

If you need this leaflet in a different language or accessible format please speak to a member of staff who can arrange it for you.

اگر به این بروشور به زبان دیگر یا در قالب دسترس‌پذیر نیاز دارید،
لطفاً با یکی از کارکنان صحبت کنید تا آن را برای شما تهیه کند.

Jeśli niniejsza ulotka ma być dostępna w innym języku lub formacie,
proszę skontaktować się z członkiem personelu, który ją dla Państwa przygotuje.

Dacă aveți nevoie de această broșură într-o altă limbă sau într-un format accesibil,
vă rog să discutați cu un membru al personalului să se ocupe
de acest lucru pentru dumneavoastră

如果您需要本传单的其他语言版本或无障碍格式，请联系工作人员为您安排。

إذا احتجت إلى هذه النشرة بلغة أخرى، أو بتنسيق
يسهل الوصول إليه، يرجى التحدث إلى أحد الموظفين لترتيب ذلك لك.

Author: Nurse
Department: Paediatrics
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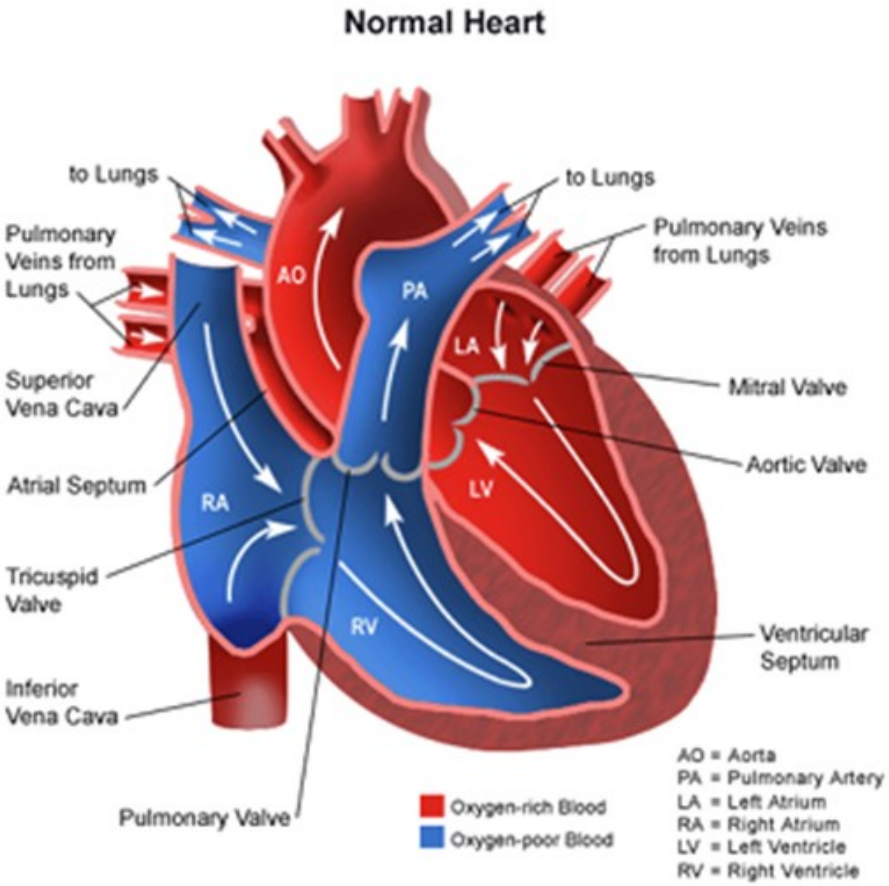
The normal heart:

The Heart is made up of four chambers: the upper two chambers are called the atrium and the lower two are known as ventricles.

Muscular walls, called septum, divide the heart into two sides.

On the right side of the heart, the right atrium and ventricle work to pump deoxygenated blood to the lungs; on the left side, the left atrium and ventricle combine to pump oxygenated blood to the body.



Your child's medications and doses:

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Medications used to treat heart problems - Many infants will not require any medications at all. For those who do here are just a few on the more common medicines:

Frusemide & Hydrochlorothiazide - These are diuretics (water medicine) which make the kidneys pass more urine. Infants and children on these drugs loose sodium, chloride and potassium (different salts in the blood stream) and water. When the heart is not working very well, water and salt accumulate in the body, liver and the lungs, making particularly the lungs rather heavy. When these drugs are given, the lungs become somewhat lighter, easier to expand and, less energy is used in breathing thus helping the infant to breathe.

Spironolactone/Amiloride - These are weaker diuretics (water medicine) which make the kidneys pass more urine. They hold on to potassium (salt) and are often used with other diuretics.

Captopril & Hydralazine - These drugs dilate (open) the blood vessels and as a result reduce blood pressure. They can be used to restore normal blood pressure. They can also be used in those infants and children with normal blood pressure and a weak heart. By reducing the blood pressure this reduces the work of the heart.

Propranolol - This reduces the rate and force of contraction of the heart muscle. It is useful in treating fast heart rates, high blood pressure and also relieving spasm of heart muscle with other more complicated heart problems.

How is the diagnosis of PDA made:

- Diagnosis can be made by examination; listening to the heart sounds (heart murmur will be heard).
- X-rays may show an enlarged heart and evidence of an excessive amount of blood flow to the lungs.
- Echocardiogram a special scan which can assess the structure of the heart, how the heart is handling the pumping of blood through the chambers, and the blood flow through the heart valves.

A Newborn with a PDA may appear to have:

- Fast breathing.
- Breathlessness.
- Increase in work of breathing.
- More respiratory infections.
- Infants gets tired easily.
- Poor weight gain e.g. (failure to thrive).

If the PDA is very small there may be no symptoms at all and the only way to detect the PDA is to listen to the heart for a heart murmur.

Signs & symptoms:

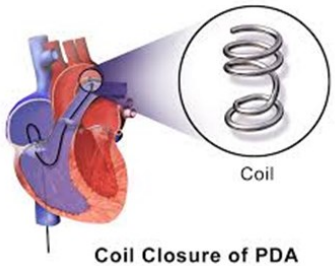
The symptoms of PDA depend on the size of the ductus and how much blood flow it carries. After birth, the pressures and resistance are much tighter in the aorta than the pulmonary artery, so if a ductus arteriosus is present, blood will flow from the aorta into the pulmonary artery. This extra blood flow into the lungs can overload the lungs and put an additional burden on the heart to pump this extra blood. This situation may not be well tolerated in a premature baby who already has problems related to immaturity of the lungs themselves. These babies may need more support from the ventilator and have symptoms of congestive heart failure.

The usual form of Treatment:

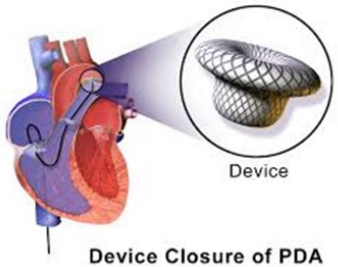
Often in a newborn the PDA may close on its own without any intervention. If the PDA continues after the newborn period it will generally never close on its own. Medical or surgical closure is recommended in such cases to prevent future risk of endocarditis (inflammation of the lining of the heart).

Medication may be given to aid closure of the ductus such as Indomethacin. Medications are only successful in newborn infants. If this does not work closure is often achieved by surgery where the PDA is tied off (ligated).

In older children if the ductus is small, a coil may be placed within the vessel which will expand to block the blood flow. If the ductus is larger, a flexible device can be placed within the ductus as a “plug”.



Coil Closure of PDA



Device Closure of PDA

Risks, discomforts of treatment and alternatives:

The risk of complications with any of these treatments is low, determined mostly by how ill the child is prior to treatment.

All benefits and risks of treatment will be discussed with you by your specialist. Specific problems regarding treatment or surgery can not be discussed here as every child’s problem needs to be assessed and treated individually.

Nature and reasons for the condition:

When a baby is still in the mother’s womb a baby’s lungs are not needed to supply oxygen because the baby receives oxygen via the mother’s lungs and the placenta. Since baby’s lungs do not provide any oxygen, there is no need for energy to be expanded pumping blood to the lungs. The ductus arteriosus is a blood vessel that is present in all babies while still in the womb that allows blood to bypass the pathway to the lungs; it allows blood to flow from the pulmonary artery to the aorta.

When the baby is born and the umbilical cord is cut, the lungs are now needed to supply oxygen. Therefore the lungs expand, their blood vessels relax to accept more flow and the ductus arteriosus usually closes within the first few hours of life.

On occasion, however the ductus arteriosus does not close on its own and this is referred to as a patent (“patent” meaning open) ductus arteriosus or (PDA). While this condition is seen more frequently in premature babies, it may also appear in full term infants.