

Common Arterial Trunk (Truncus Arteriosus)

Patient Information Series – What you should know, what you should ask.

What is Common Arterial Trunk?

Common Arterial Trunk, also known as Truncus Arteriosus, is a rare congenital heart defect where a single blood vessel carries blood out of the heart instead of the normal two vessels (the pulmonary artery and the aorta). This single vessel then divides into the pulmonary artery and the aorta. In a normal heart, the pulmonary artery carries blood from the right ventricle of the heart to the lungs to get oxygen, and the aorta carries oxygen-rich blood from the left heart ventricle to the rest of the body. However, in the case of Common Arterial Trunk because there is only one vessel, oxygen-poor and oxygen-rich blood can mix. This results in less efficient oxygenation of the blood and can lead to various health issues for your baby.

What causes Common Arterial Trunk?

The exact cause of Common Arterial Trunk (Truncus Arteriosus) is not completely understood, but it is believed to be a combination of genetic and environmental factors. There may be a genetic component to Common Arterial Trunk, as it sometimes occurs in families and can be associated with genetic syndromes like DiGeorge syndrome (22q11.2 deletion syndrome). Certain environmental factors during pregnancy, such as exposure to certain medications, or conditions such as diabetes or lupus in the mother can also increase the risk of congenital heart defects in the baby. In many cases, Common Arterial Trunk occurs sporadically, meaning that it develops randomly without a clear cause.

Should I have more tests done?

Your caregiver can advise you regarding further testing. Fetal echocardiography is a specialized ultrasound of the fetal heart that provides detailed images of heart structure and function. Genetic counseling and genetic testing, such as chromosomal microarray and whole exome sequencing, will help determine if there is a genetic component to your baby's condition. You might also be referred to Cardiac MRI, which is another imaging test that provides detailed information about the heart's structure and function. You might have consultations with other specialists, such as a pediatric cardiologist (who specializes in treating congenital heart defects) or maternal-fetal medicine specialist (who specializes in high-risk pregnancies), to advise you on your individual baby's condition, development, and prognosis.

What are the things to watch for during my pregnancy?

Your healthcare team can counsel you on how to watch for any signs of complications during pregnancy, such as reduced fetal movements or changes in your health, as well as advise you regarding regular antenatal check-ups and fetal monitoring. Fetal ultrasound exams and specialized echocardiography can be used to monitor the baby's heart structure and function, blood flow, and

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overall development. You may be advised to plan for your delivery in a facility equipped to handle high-risk pregnancies and that has the necessary resources for immediate care of newborns with heart defects. This often includes having a neonatal intensive care unit (NICU) and pediatric cardiac surgery availability.

What will it mean for my baby after it is born?

Each baby with Common Arterial Trunk is unique, and the treatment and prognosis can vary based on the specifics of the condition and the presence of any other associated heart or other organ defects. Upon delivery, baby will be assessed for signs of heart failure, breathing difficulties, or other complications. Common Arterial Trunk can lead to cyanosis (a bluish tint to the skin, lips, and nails) and may require supplemental oxygen or other interventions. Surgery is typically required within the first few weeks of life, to separate the single great vessel into two separate vessels (aorta and pulmonary artery) and closing any associated ventricular septal defect (VSD). Baby will need long-term follow-up to monitor heart function, growth, and development, and to detect any complications or need for further interventions.

Will it happen again?

The risk of Common Arterial Trunk occurring again depends on several factors, including the underlying cause of the condition in the present pregnancy. A genetic counselor can assess your risk based on your medical history, family history, and any genetic testing results. Many cases of Common Arterial Trunk occur with no clear cause and a low risk of recurrence. However, having one child with a congenital heart defect slightly increases the risk compared to the general population.

What other questions should I ask?

- Where should I deliver my baby?
- Are there any additional tests or evaluations that need to be performed during the pregnancy to assess my baby's condition further?
- Can you explain the expected course of treatment and surgeries that my baby will need after birth?
- What are the potential complications and risks associated with this heart defect and its treatment?
- What are the long-term implications of this heart defect for my child's health, development, and quality of life?

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