

## **Persistent Pulmonary Hypertension of the Newborn (PPHN)**

Another term for high blood pressure is **hypertension**. **Persistent pulmonary hypertension of the newborn** (PPHN) is a life-threatening condition. Before birth, a baby's blood circulates differently while in the uterus. With PPHN the baby does not change over from fetal to normal newborn circulation. Blood is forced away from the lungs due to high blood pressure in the arteries that go to the lungs. This decreases the body's supply of oxygen.

### **Risk Factors**

PPHN can occur in both full-term and near-term infants, usually within 72 hours after birth. Some of the risk factors for this condition are:

- Meconium aspiration (fetal bowel movements are inhaled into the lungs before birth)
- Birth depression
- Infection
- Low body temperature
- Congenital disorder that results in underdeveloped lungs or congenital heart disease

### **Signs and Symptoms**

- Rapid breathing (more than 60 times a minute)
- Grunting or moaning when the baby breathes out
- Retractions (the skin between the ribs or under the ribcage pulls in during fast and hard breathing)
- Blue color of the lips or around the mouth that gets worse in the first 24 hours of life
- Pale or blotchy color
- Low blood oxygen levels, even after giving oxygen
- Decreased urine output
- Cool or blue hands and feet
- Low blood pressure
- Swelling

## Diagnosis and Treatment

If a baby has the symptoms listed above the doctor may order a cardiac ultrasound test to check the pathway of blood circulation. (Refer to the Helping Hand, *Ultrasound Scan*, HH-III-54.)

The goal of treatment is to improve oxygen levels in the blood, relax the blood vessels in the lungs and maintain a normal blood pressure. The baby is given oxygen and medicines and is kept quiet and warm.

### Oxygen therapy:

- Oxygen hood
- CPAP (Continuous Positive Air Pressure) – oxygen is given through tiny tubes placed in the nose.
- Ventilator - a machine that helps the baby to breathe
- High frequency ventilation - machine that delivers rapid, short bursts of oxygen.

### Medicines:

- Blood pressure medicine - if needed to keep the blood pressure at the right level
- Antibiotics
- Sedation – medicine to allow your baby to rest and decrease his need for oxygen
- Surfactant - medicine to improve oxygen uptake (placed into baby's lungs with a breathing tube).

### Environment:

- Your baby will be kept warm
- Limited stimulation - touching, holding and room noise will be controlled

### If PPHN is severe and life-threatening:

Treatment for severe, life-threatening PPHN may involve treating with nitrous oxide or a procedure called ECMO. See the Helping Hand, *ECMO (Extra Corporeal Membrane Oxygenation)*, HH-II-90. If ECMO is needed, your baby's doctor will discuss this procedure with you and answer your questions.