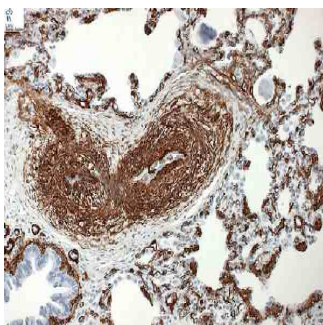


## New Therapies Have Not Reduced Anaesthesia Risks for PHT Patients



While new treatments for pulmonary hypertension (PHT) have reduced mortality, children with PHT are still a high-risk group for serious complications and death related to anaesthesia and surgery, according to a study appearing in *Anesthesia & Analgesia*.

Younger children and those with more severe disease are at higher risk, according to researchers, but larger studies will be needed to understand the risks of anaesthesia in the era of modern treatments for PHT.

For this study, Dr. Katherine Taylor and colleagues of the Hospital for Sick Children, Toronto, analysed adverse events in 122 infants and children with PHT undergoing surgery with general anaesthesia between 2008 and 2012. They evaluated patterns of complications occurring under current approaches to managing PHT, a serious condition in which the blood pressure in the arteries of the lungs is too high. Data show that children with PHT have had not only a shortened life expectancy, but also a high risk of serious anaesthesia-related complications. Hence surgery was avoided except in extreme cases.

Interestingly, new "disease-modifying" treatments have substantially improved survival for infants and children with PHT during the past five years. "Consequently, patients are now presenting to anaesthesia/surgical services for procedures associated with PHT and other childhood and adolescence illnesses," according to Dr. Taylor et al.

The 122 patients (median age 2.2 years) in the study underwent a total of 264 non-heart surgeries. In most patients, PHT was related to congenital heart defects. Forty-three percent of operations were performed while the children were receiving the newer disease-modifying treatments. Key findings of the study include:

- Before the new PHT treatments were introduced, minor complications occurred in about four percent of procedures and major complications in a little over three percent.
- Three children died, for a risk of about one percent per surgery.
- Complication rates were somewhat lower for children receiving the new disease-modifying drugs: 4.1 percent versus 8.6 percent for overall complications, and 2.5 versus 3.7 percent for serious complications.
- After adjustment for the severity of PHT, the new treatments had no significant effect on complication risk.

Further analysis revealed that rates of complications and death remained significantly higher for children with more severe PHT, including those receiving home oxygen therapy and those undergoing lengthier surgical procedures. Age was also a strong risk factor, with younger children being at higher risk. The risk of serious complications was six times higher for infants younger than five months, compared to those aged two years or older.

"The risk for adverse events during anaesthesia in patients with PHT remains high, despite newer disease-modifying treatments," Dr. Taylor's team points out. Their study is the largest to date of infants and children with PHT, and the only one performed since the effective new PHT treatments were introduced.

However, the single-hospital study still does not include enough events — a total of nine serious complications and three deaths — to evaluate the various contributors to adverse events. Dr. Taylor et al. note that collaborative studies including data from multiple hospitals will be needed to address unanswered questions about the risks of anaesthesia and surgery in children with PHT, including the role of disease-modifying treatments.

Source: [International Anesthesia Research Society \(IARS\)](#)

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