**Non-Pharmacological Therapies for the Treatment of Patients with Severe Idiopathic Pulmonary Arterial Hypertension**

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**Purpose:** The particular aims of this research study were to: 1) determine current non-pharmacological therapies available for treatment of patients with severe idiopathic pulmonary arterial hypertension; and 2) determine the timing at which these therapies have shown the most optimal benefit.

**Background:** Idiopathic pulmonary arterial hypertension eventually leads to right-sided heart failure and sudden death. Despite advancements in pharmacological therapies to treat pulmonary hypertension, the overall prognosis is poor, with an approximate annual mortality rate of 11.8% in patients with idiopathic pulmonary arterial hypertension. Various interventional and surgical approaches for treatment of idiopathic pulmonary arterial hypertension have been developed over recent years. Three major interventional therapies for the treatment of patients with severe idiopathic pulmonary arterial hypertension were reviewed: atrial septostomy, patent ductus arteriosus stenting and the creation of a transcatheter Pott’s shunt.

**Methods:** An electronic literature search was conducted through May 2015 through MEDLINE and PubMed databases. The search of medical subject headings included: idiopathic pulmonary hypertension, atrial septostomy, patent ductus arteriosus stenting, transcatheter Pott’s shunt, surgical modalities for pulmonary arterial hypertension, percutaneous interventional therapies for pulmonary hypertension, palliation and lung transplantation. Article titles and abstracts resulting from the search were reviewed for topic significance, and potential relevant full-text articles were extracted for review. Pertinent abstracts where full-text articles were not obtainable were excluded from the review.

**Results:** Evidence from this review suggests that percutaneous interventional therapies have been shown to improve prognosis in patients with severe idiopathic pulmonary hypertension. The optimal timing of atrial septostomy has yet to be determined, but observational data suggest that the combination of pulmonary arterial hypertension-specific therapies in conjunction with atrial septostomy in patients earlier in the course of their disease may offer a survival benefit rather than performing atrial septostomy in the latter stages of their disease. Patent ductus arteriosus stenting has shown a remarkable improvement in functional status, effort capacity and echocardiographic findings immediately after ductus arteriosus stenting and during follow-up. Transcatheter Pott’s shunt creation has been shown to be highly challenging and has only been performed on a handful of subjects. The optimal timing of the percutaneous Pott’s shunt is yet to be determined and currently appeared to be extremely high risk and should be reserved for patients in whom atrial septostomy or lung transplantation is contraindicated.

**Conclusion:** These findings suggest that percutaneous interventional therapies offer a promising approach to the treatment of idiopathic pulmonary arterial hypertension. The information gathered from this review is essential for critical care nurses who care for patients with idiopathic pulmonary hypertension. Idiopathic pulmonary arterial hypertension is a progressive and irreversible disorder with no definitive cure or treatment plan. It is imperative for critical care nurses to be up-to-date on the most recent non-pharmacological treatments available for individuals with idiopathic pulmonary arterial hypertension, as oftentimes, their treatment and recovery from surgery is highly-complicated and challenging.