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Title: *Assessing outcomes in pediatric patients with pulmonary hypertension following treatment with sildenafil or tadalafil*

#### Abstract

Pulmonary hypertension (PH) is a progressive disease that can lead to significant impairment in quality of life, increased morbidity, and even mortality in pediatric patients. Sildenafil has been the PDE5i of choice for PH in children, however tadalafil has been used recently as an alternative. While shown to be safe and effective in adults with PH, there is little data available studying the use of tadalafil in children.

This retrospective study examines data from 37 patients, aged 2 months to less than years, with a confirmed diagnosis of PH treated with sildenafil or tadalafil at SSM Health Cardinal Glennon Hospital in St. Louis, Missouri. Outcomes assessed following treatment were pulmonary-vascular resistance (PVR), tricuspid valve regurgitation (TVR), right ventricle systolic pressure (RVSP) using echocardiographic and cardio catheterization data, treatment-associated adverse effects, and mortality within one year of therapy initiation.

For the sildenafil group, median PVR was 2.72 Wood units (1.47-7.21), median TVR was 3.01 m/s (2.8-4.9), median RVSP was 36.2 mmHg (31.0-96.2), 4 patients experienced treatment-associated adverse effects, and one-year mortality was 22.2%. For the tadalafil group, median PVR was 1.57 Wood units (0.7-6.03), median TVR was 3.3 m/s (1.35-4.1), median RVSP was 45.53 mmHg (7.45-68.7), no treatment-associated adverse effects were reported, and one-year mortality was 8.3%.

Due to the limited number of patients in this study and lacking sufficient data, no conclusion could be drawn about the affects of tadalafil on pediatric patients with pulmonary hypertension. Tadalafil did appear to be well tolerated. Further studies are needed to fully assess the effects of tadalafil in this patient population.