**Ventilatory efficiency and dyspnea on exertion improvements are related to reduced pulmonary pressure in heart failure patients receiving Sildenafil.**

**Dialog eLinks**
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**Accession number & update**
19329196 Publisher 20090401.
**Source**
International Journal of Cardiology, {Int-J-Cardiol}, 27 Mar 2009 (epub: 27 3 2009), ISSN: 1874-1754.
**Author(s)**
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**Abstract**
Chronic phosphodiesterase-5 inhibition improves peak oxygen consumption, ventilatory efficiency (VE/VCO(2) slope) and pulmonary artery pressure (PAP) in heart failure (HF). In 40 male patients, **Sildenafil** treatment produced a significant ($p<0.001$) decrease in dyspnea upon exertion (DOE) at maximal exercise. The correlations between the change in systolic PAP and both the change in the VE/VCO (2) slope ($r=0.57$, $p<0.001$) and DOE at maximal exercise ($r(s)=0.49$, $p<0.001$) were significant. DOE at maximal exercise is significantly reduced and the degree of improvement in PAP is reflected by the degree of improvement in the VE/VCO(2) slope and DOE following **Sildenafil** therapy.

**Impact of sublingual sildenafil on pulmonary hypertension in patients with heart failure.**
**Dialog eLinks**
Full text available at Get@Pfizer (view full text or order article)
**Accession number & update**
19360244 In-Process 20090414.
**Source**
Arquivos brasileiros de cardiologia, {Arq-Bras-Cardiol}, Feb 2009, vol. 92, no. 2, p. 116-26, ISSN: 1678-4170.
**Author(s)**
de-Freitas-Aguinaldo-Figueiredo-Jr, Bacal-Fernando, Oliveira-José-de- Lima-Jr, Santos-Ronaldo-Honorato-Barros, Moreira-Luiz-Felipe-Pinho, Silva-Christiano-Pereira, Mangini-Sandrigo, Carneiro-Rodrigo-Moreno- Dias, Fiorelli-Alfredo-Inácio, Bocchi-Edimar-Alcides.
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**Abstract**
BACKGROUND: Pulmonary hypertension (PH) is a factor of poor prognosis in the postoperative period of heart transplant (HT) and thus, the study of the degree of reversibility to vasodilators is mandatory during the preoperative assessment. OBJECTIVE: To evaluate the pulmonary and systemic hemodynamic effects of **sildenafil** as a vasodilator during the PH reversibility test in patients that are candidates to HT. METHODS: Patients awaiting HT were submitted to the measurement of systemic and pulmonary hemodynamic variables before and after the administration of a single sublingual dose of 100 mg of **sildenafil** during right heart catheterization. RESULTS: Fourteen patients (age: 47+/-12 years, 71.4% men) with advanced heart failure Ejection Fraction (EF) 25 +/- 7%, Functional Class (FC - NYHA) FC III - 6 and FC IV - 8, were evaluated in this study. The acute administration of **sildenafil** showed to be effective in decreasing the systolic (62.4 +/- 12.1 vs 51.5 +/- 9.6 mmHg, CI=95%, $p<0.05$) and mean (40.7 +/- 7.3 vs 33.8 +/- 7.6 mmHg, CI=95%, $p<0.05$) pressures of the pulmonary artery. There was also a significant decrease in the pulmonary (4.2 +/- 3 vs 2.0 +/- 0.9 uWood, CI=95%, $p<0.05$) and systemic vascular resistance (22.9 +/- 6.8 vs 18.6 +/- 4.1 Wood, CI=95%, $p<0.05$), associated to an increase in the cardiac output (3.28 +/- 0.79 vs 4.12 +/-1.12 uWood, CI=95%, $p<0.05$) without, however, significantly interfering in the systemic arterial pressure (87.8 +/- 8.2 vs 83.6 +/- 9.1 mmHg, CI=95%, $p=0.3$). CONCLUSION:The sublingual administration of **sildenafil** is an effective and safe alternative as a vasodilator during the PH reversibility test in patients with heart failure and awaiting a HT.

# Sildenafil therapy in secondary pulmonary hypertension: Is there benefit in prolonged use?


**Accession number & update**
*19386283 Publisher 20090425.*
**Source**
Vascular Pharmacology, {Vascul-Pharmacol}, 19 Apr 2009 (epub: 19 4 2009), ISSN: 1537-1891.
**Author(s)**
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**Abstract**
BACKGROUND: **Sildenafil** is of benefit to selected patients with pulmonary hypertension due to parenchymal lung or cardiac disease. We present data from patients with secondary pulmonary hypertension, comparing their right heart catheter results and six minute walking distance to time on treatment. METHODS: 25 patients with symptomatic secondary pulmonary hypertension received **sildenafil** 50 mg tds in a 5- year period. Underlying causes were chronic inoperable thromboembolic disease (11), COPD (6), interstitial lung disease (5) and valvular heart disease (3). Their cardio-pulmonary haemodynamics were measured with right heart catheterization prior to treatment, post-treatment at 2, 6 and 12 months and subsequently depending upon clinical need. Six- minute walk distance was also measured. RESULTS: Patient age range was 40 to 83 (median 70.5) years. Time of treatment to latest right heart catheter was 2 to 60 (median 17) months and 8 to 61 (median 34) months to clinic follow-up or death. There was a significant reduction in six-minute walk distance from baseline to long term (>12 months) follow-up (p=0.002). Pulmonary vascular resistance was significantly reduced from baseline to 12 months (p=0.049). The mean pulmonary arterial (PA) pressure was significantly reduced at long-term follow- up (p-=0.009). 20 patients had an improved PA pressure with treatment. In those with a worsening PA pressure, two had an improvement in cardiac output and six minute walk distance, two had stable cardiac output at 20 and 21 months, and one had measurements taken during a significant illness. Three patients, who had a reduction in PA pressure, subsequently died of progression of underlying illness at 8 months, from myocardial infarction at 34 months, and from aspergillus pneumonia at 59 months. CONCLUSION: Long-term use of **sildenafil** in patients with secondary forms of pulmonary hypertension is associated with a sustained improvement in cardio-pulmonary haemodynamics. Lack of improvement may be attributed to other factors apart from treatment failure, such as underlying disease progression or unrelated concurrent

# Role of Oral Sildenafil in the Treatment of Right Ventricular Dysfunction After Heart Transplantation.


**Accession number & update**
2009224431 20090520.
**Source**
Transplantation Proceedings, {Transplant-Proc}, May 2009, vol. 41, no. 4, p. 1353-1356, 8 refs, CODEN: TRPPA, ISSN: 0041-1345. Publisher: Elsevier USA, 6277 Sea Harbor Drive, Orlando, FL 32862 8239, USA.
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**Abstract**
Objective: Right ventricular dysfunction (RVD) after heart transplantation is a major complication, especially in patients with pulmonary hypertension (PH). Herein we have presented our initial experience with oral **sildenafil** for RVD following heart transplantation. Materials and Methods: From February 2006 to February 2008, 10 patients (7 males and 3 females) of overall mean age of 56.7 ± 9.5 years suffered from acute RVD immediately after heart transplantation. Preoperative hemodynamic data before and after a vasodilatation test (sodium nitroprusside; NTP) showed: systolic pulmonary arterial pressure (SPAP) 59.5 ± 12.9 and 44.2 ± 12.4 mm Hg; cardiac output (CO) 3.3 ± 0.9 and 3.7 ± 0.8 L/min; transpulmonary gradient (TPG) 11.7 ± 3.9 and 8.7 ± 3.6 mm Hg; and pulmonary vascular resistance (PVR) 3.9 ± 2.1 and 2.4 ± 1.3 wood units (WU), respectively. All patients required inotropes and inhaled nitric oxide (iNO) to be weaned from cardiopulmonary bypass (CPB). Results: Intravenous (IV) or inhaled vasodilators could be weaned using oral **sildenafil** in all patients. The hemodynamic data obtained during IV or inhaled drugs (between postoperative days 5 and 10) compared with those obtained on **sildenafil** therapy alone (about 1 month after transplantation) showed a significant decrease in SPAP (39.0 ± 8.2 vs 32.0 ± 6.5 mm Hg; P = .049). Conclusion: These data suggested that oral **sildenafil** may have a role in the treatment of RVD after heart transplantation. 