Abstract: P3672

Effects of inhaled nitrite in addition to sildenafil in thalassemia patients with pulmonary hypertension

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Topic(s):
Pulmonary Circulation, Pulmonary Embolism, Right Heart Failure: Pharmacotherapy

Citation:

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Background - Pulmonary hypertension is the major morbidity and mortality in patients with thalassemia. Recent studies have found that inhaled nebulized nitrite can significantly decrease pulmonary pressure in immediate response, but data are needed to determine its clinical benefits.

Methods - We conducted a multicenter, randomized, double-blind, placebo-controlled trial including thalassemia patients with symptomatic pulmonary hypertension, diagnosed by right heart catheterization and were currently treated with sildenafil. Patients continued the optimum dose of sildenafil and were randomly assigned into 2 groups; the treatment group and the control group. The treatment group was given 30 mg of inhaled nebulized nitrite twice a day for 3 months while the control group was given inhaled normal saline. The outcomes were the improvement of clinical and echocardiographic parameters at 1 and 3 months.

Results - A total of 12 patients were recruited, 5 were assigned to the treatment group and 7 to the control group. The median of sildenafil in both group were 60 mg/day. Treatment with the inhaled nebulized nitrite in addition to sildenafil significantly reduced the mean pulmonary artery pressure at 3 months when compared to placebo (median -7.30 mmHg in treatment group vs +2.30 mmHg in control group, P = 0.016). In the treatment group, the median 6-minute walk distance was significantly increased from 380 m to 427 m. at 1 month (P= 0.043) but there was no significant difference in the median change of 6-minute walk distance when compared to control group at 3 months (+48 m. in treatment group vs +17.5 m. in control group, P=0.286). No significant difference in NT-proBNP change between the two groups was detected. There were no hypotension or other major adverse effects in the treatment group.

Conclusions - The addition of inhaled nebulized nitrite to sildenafil can decrease mean pulmonary pressure and has a tendency to improve six minutes walk distance in thalassemia patients with pulmonary hypertension.
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