P-60

60 patients with Eisenmenger physiology improve clinical status, hemodynamics and pulmonary endothelial function after 24 weeks of Bosentan therapy

Mebus S. (1), Farahwaschi B. (2), Kreuder J. (3), Peters B. (4), Miera O. (2), Berger F. (2), Lange P. (2), Schulze-Neick I. (5)
German Heart Centre Munich (DHM), Munich, Germany (1), German Heart Institute Berlin (DHZB), Berlin, Germany (2), Kinderherzzentrum University Giessen, Giessen, Germany (3), University Magdeburg (4), Great Ormond Street Hospital, London, UK (5)

Introduction: Pulmonary vasodilative therapy in pulmonary hypertension of the Eisenmenger physiology has been shown to be safe. We show, in the largest cohort to date, improvement of clinical, hemodynamic and pulmonary endothelial function after 24 weeks of Bosentan therapy.
Methods: 60 adult patients (16-51ys, 25m/35f) were recruited and treated for 24 weeks with Bosentan, an endothelin receptor ETA/ETB antagonist. Cardiac catheterisation and acute pulmonary vasoreactivity test, with magnetic resonance and echocardiographic imaging and laboratory markers of cell function (VEGF, BNP, endothelins) was performed before and after Bosentan therapy, which was monitored with 6-MWT, ECHO and clinical status.
Results: Clinical status improved (average NYHA 2.66±0.59 to 2.32 ± 0.51, $p<0.005$) as well as 6-MWD (65.1±14.3m, $p<0.001$). Hemodynamics showed a lowered pulmonary vascular resistance at rest, while maximum pulmonary vasodilation with NO/O2 remained statistically unchanged. Treatment with Bosentan resulted in a significant reduction of pro-BNP ($p=0.0011$) whereas mid region-ANP, selectins and cell adhesion molecules remained unchanged. Levels of big endothelin and endothelin increased, and plasma nitrite, nitrate and ADMA showed enhanced NO production.
Conclusion: 24 weeks of Bosentan-Therapy in patients with Eisenmenger-Physiology was safe and improved clinical and exercise parameters, and hemodynamics. Specifically, data suggest improved pulmonary endothelial function with endothelin handling and vasodilating capacity of the pulmonary vascular system, demonstrating the beneficial effects of bosentan for the first time in these patients both on the clinical and on the pulmonary vascular cellular level.