In-child experience of the selective prostacyclin receptor agonist selexipag in pediatric pulmonary hypertension

Martin Koestenberger[a], MD, Georg Hansmann[b], MD, PhD, on behalf of the European Pediatric Pulmonary Vascular Disease Network

[a] Division of Pediatric Cardiology, Department of Pediatrics, [b] Department of Pediatric Cardiology and Critical Care, Hannover Medical School, Hannover, Germany

Objectives: Pulmonary arterial hypertension (PAH) is a progressive disease with poor prognosis. Dual combination therapy has become standard of care for patients with more than mild PAH, and is increasingly chosen as an upfront approach. Additional PAH drugs such as the selective prostacyclin IP receptor agonist selexipag may get approved in the future for pediatric use. However, emerging therapeutic strategies, such as a triple oral combination therapy, have not been extensively studied in children with PAH. Currently, selexipag is used in only few tertiary PAH centers worldwide off-label in children with severe PAH not responding well to standard therapy ("compassionate use"). The majority of these expert centers administer selexipag to pediatric PAH patients, as add-on drug, i.e. together with a phosphodiesterase 5 inhibitor (PDE-5i), and an endothelin receptor antagonist (ERA), resulting in triple combination PAH-targeted therapy[1]. We present here the PVD network's preliminary data on the add-on use of oral selexipag in children with PAH.

Methods and Results: We report the initial experience in 9 children on selexipag from 2 centers, including the first published pediatric case worldwide[2], describing clinical and hemodynamic improvements by cardiac catheterization in a 12-year old female with PAH associated with congenital heart disease (CHD). Another group recently also published their first experiences of using selexipag in 5 children with PAH[3]. In our pediatric experience, the most common adverse effects of oral selexipag administration are headache, flush, nausea, however, they were mostly transient and did not lead to cessation of drug intake.

Conclusions: Herein, we summarize the sparse available data on the use of selexipag in pediatric populations (at present limited to children with IPAH and PAH-CHD). We emphasize that the add-on use of oral selexipag must still be considered "experimental therapy" and suggest a strict patient selection and enrollment in a future clinical study.

References:

1 Koestenberger M, Hansmann G, on behalf of the European Pediatric Pulmonary Vascular Disease Network. Should we use the oral selective prostacyclin IP receptor agonist selexipag off-label in children with pulmonary arterial hypertension? Pulm Circ 2018; 8(3): 2045894018793580. doi: 10.1177/2045894018793580

2 Geerdink LM, et al. First-in-child use of the oral selective prostacyclin IP receptor agonist selexipag in pulmonary arterial hypertension. Pulm Circ 2017; 7: 551-554.

3 Gallotti R, et al. Single-Center Experience Using Selexipag in a Pediatric Population. Pediatr Cardiol 2017; 38: 1405-1409.