

Pulmonary vasodilator therapy in preterm children with bronchopulmonary dysplasia; a nationwide study

Ida Jeremiasen¹, Karin Tran-Lundmark¹, Mikaela Dolk¹, and Estelle Naumburg²

¹Skånes universitetssjukhus Lund

²Umeå universitet Institutionen för Klinisk vetenskap

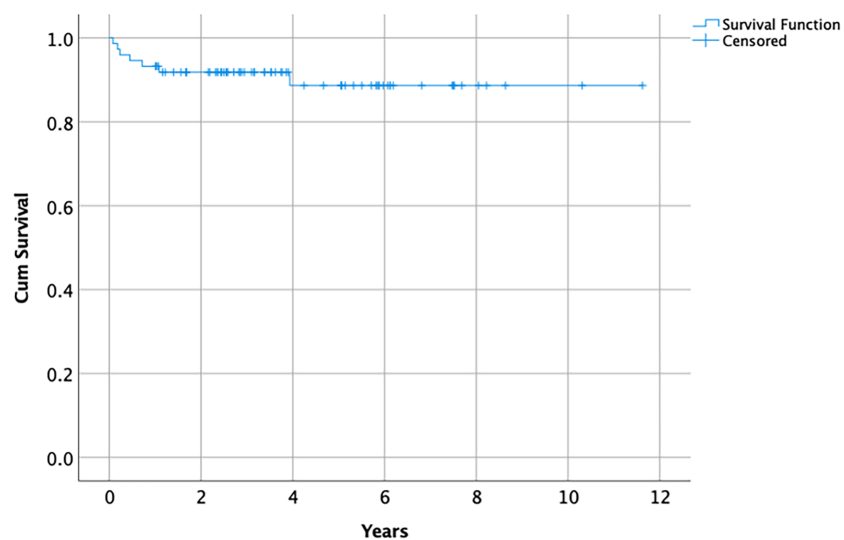
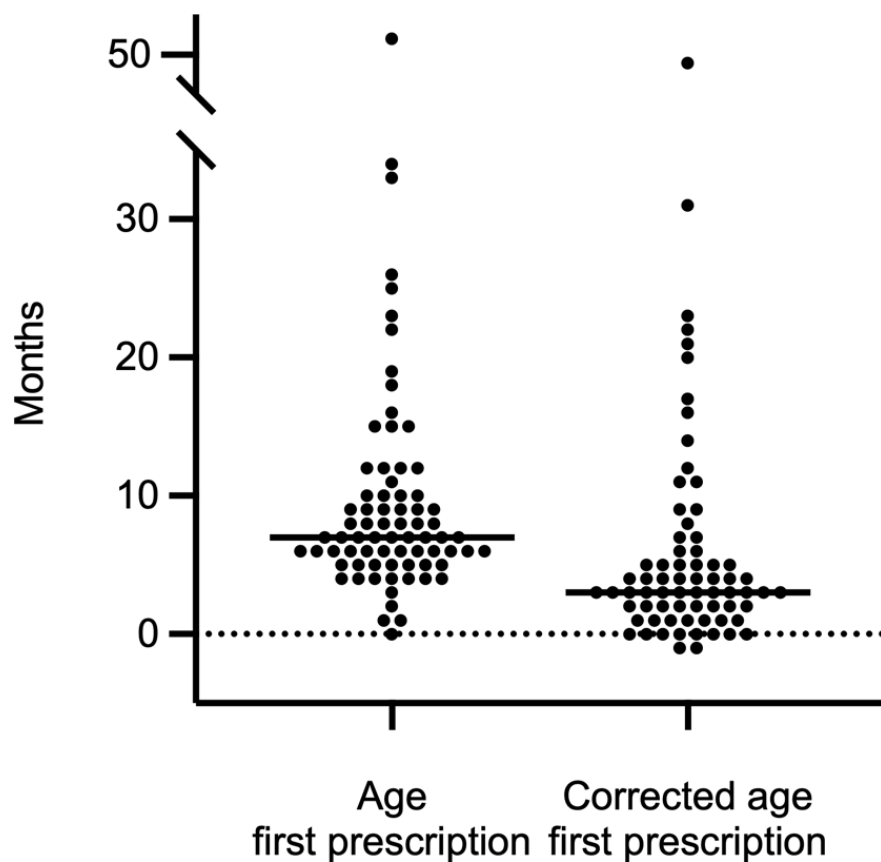
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Abstract

Objectives: This study aimed to map prescription patterns of pulmonary vasodilator therapy in children with bronchopulmonary dysplasia (BPD). *Working hypothesis:* Pulmonary vasodilator drug therapy is used in children born preterm suffering from BPD-associated pulmonary hypertension, but patient selection, extent of diagnostics with catheterization and co-morbidities are largely unknown. *Study design:* A descriptive national registry-based study. *Patient selection and methodology:* All children below seven years of age who had been prescribed a pulmonary vasodilator during a ten-year period, 2007-2017, born preterm (gestational age, GA <37 weeks) and classified as BPD, were included. Information on prescriptions was retrieved from the Swedish Prescribed Drug Register and information on patient characteristics and comorbidities was retrieved by linkage to national registers held by the National Board of Health and Welfare. *Results:* In total, 74 children were included, 54 (73%) born at GA 22-27 and 20 (27%) at GA 28-36. Single therapy was most common, N=64 (86.5%), and sildenafil was most frequently prescribed, N=69 (93%). Bosentan, iloprost, macitentan and/or treprostinil were mainly used for combination therapies, N=10 (13.5%). Patent ductus arteriosus (PDA) or atrial septal defect (ASD) was present in N=29 (39%) and N=25 (34%) children respectively, and N=20 (69%) versus N=3 (12%) underwent closure. Cardiac catheterization was performed in N=19 (26%) patients. Median duration of therapy was 4.4 (0.5-14.1, 95% percentiles) months. Total mortality was N=7 (9%). *Conclusions:* Preterm children with BPD are prescribed pulmonary vasodilators, often without prior catheterization and sildenafil was most common. Diagnostic tools, effects, and drug safety needs further evaluation.

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