

Decades of increasingly elevated risk of Pulmonary Hypertension following premature birth

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Objectives: Pulmonary hypertension (PH) among children and adults has been linked to premature birth even after adjustments for known factors such as congenital heart disease (CHD) and lung disease. The aim of this population-based registry study was to assess the risk of PH following exposure to premature birth over decades when modern neonatal care was introduced and the survival rates increased.

Methods: Information on PH and perinatal factors was retrieved from the Swedish Pulmonary Hypertension Registry (SPAHR), the Swedish Registry of Congenital Heart Disease (SWEDCON) and the Medical Birth Registry in Sweden. Cases were adults and children over five years of age with PH born in Sweden between 1973 and 2010. Six controls were randomly selected from the Swedish Medical Birth Registry, matched by birth year and delivery hospital to each case. Information on risk factors was retrieved through the registries. Conditional multiple logistic regression was performed adjusting for CHD, gender, chromosomal abnormalities, congenital diaphragm hernia and acute lung disease, for the total study population and by birth grouped in five-year intervals.

Results: The overall adjusted risk of PH was associated with premature birth, OR=4.46 (95%CI; 2.46– 8.11). The risk of PH following premature birth for each five-year period increase several times for children born in 2000's and later, OR=14.44 (95% CI 4.45-45.88).

Conclusion: PH following premature birth has increased over the last decades. Our study indicates that new factors may play a role in the risk of developing PH among preterm born infants.