Use of Sildenafil in Pulmonary Hypertension associated with Bronchopulmonary Dysplasia in Premature Infants. Single Center Experience

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Pulmonary hypertension (PH) is an emerging potentially lethal complication of bronchopulmonary dysplasia (BPD) of prematurity (O2 dependency at 36 weeks GA), Its incidence is unknown and treatment is not yet standardized. We present retrospectively the experience with sildenafil (S) in a single large Center

We analyzed all very low birth weight (VLBW) infants admitted at our Neonatal Intensive Care Unit (NICU) between 01/2007 and 12/2011 who developed BPD and PH and were treated with S for PH defined as systolic PA pressure (PAP) above 40 mmHg by Echo (mean >25 mmHg). S was discontinued when PAP was normal at 2 subsequent evaluations. Safety was assessed by adverse events while on S and the discontinuation of treatment for reasons other than improvement. Data were analyzed with SPSSv 18. Continuous variables are expressed as mean ± standard deviation and dichotomic variables as number (percentage).

Between 2007 and 2011, 649 VLBW infants were admitted to our center. Mean gestational age (GA) and birth weight were 29 ± 2.8 weeks and 1136 ± 274 grams respectively. 45 patients (pts) died before 36 weeks GA, Of the 605 survivors, 87 (14,2%) developed BPD, severe in 51 (8,4%). PH was detected in 14/51 (27%) pts with severe BPD (14 % of all BPD), and they were treated with S (2.5 ± 1.25 mg/kg/day) Mean GA at diagnosis was 46 ± 9.7 weeks and mean systolic PAP 53 ± 16 mmHg. Three pts (21%) died before discharge because of chronic respiratory failure and PH. Three patients (14,3%) recovered for PH during hospital stay and discontinued S before discharge. Eight patients (57%) were discharged on S and O2 therapy and monitored as outpatients. Sildenafil was successfully weaned by 5.2 ± 4.7 months of corrected age in 5 patients. Three patients are still under treatment age 18, 22 and 39 months.

There were no adverse effects related to S treatment PH is emerging as a serious common problem in pts with severe BPD of prematurity Chronic use of S seem to be safe in these pts, although larger series will be needed to establish this firmly.