

Abstract Title:

Outcome of Premature Infants with Persistent PDA in a Public Hospital with a level 3 NICU where Surgical Closure is not a Therapeutic Option

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Abstract Description:

Background: Large controversy on how to manage the patent ductus arteriosus (PDA) and evidence of poor outcomes with surgical ligation has led many physicians to manage conservatively and/or expectantly the PDA in premature infants.

Objective: The aim of the present study was to characterize the outcome of premature infants with PDA in a level 3 NICU where Bubble CPAP and early surfactant are the predominant mode of ventilatory support for premature infants with respiratory distress syndrome and surgical closure of the PDA is not offered as a therapeutic option.

Study Design: This is a retrospective case review of all premature infant ≤ 32 weeks gestation and/or ≤ 1500 grams with an echocardiographic diagnosis of patent ductus arteriosus (PDA) who were born at the Hospital Universitario de Santander, Bucaramanga, Colombia between January 2013 and June 2016. PDAs were categorized as physiologic, persistent, and symptomatic or asymptomatic.

Results: A total of 154 infants met the gestational age and weight inclusion criteria. Of these infants, 41 had a confirmed PDA (26.6%). Three of the 41 infants had a physiologic PDA during the first week of life that closed and never re-opened (7.31%). The remaining 38 PDAs were categorized as persistent PDA (pPDA). Symptomatic PDA was observed in 50% of infants with pPDA. Patients exposed to a pPDA were managed expectantly in 28/38 infants (73.7%), and with pharmacologic treatment in 10/38 infants (26.3%). Spontaneous closure occurred in only 6/28 infants with expectant management (21.4%); the remaining 22 pPDA stayed open until death or discharge (78.6%). Pharmacologic closure occurred in 7/10 infants (70%). A total of 25/38 infants had pPDA that either did not close spontaneously with expectant management or

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did not respond to pharmacologic treatment (65.7%). Of the 38 infants with pPDA, bronchopulmonary dysplasia (BPD) was observed in 18/38 (47.3%), pulmonary hypertension (PH): 8/38 (21%), BPD + PH: 6/3 (15.7%) and these outcomes were inversely associated with gestational age. Confirmed sepsis was observed in 30/38 infants (78.9%). No differences in outcomes were observed between symptomatic and asymptomatic pPDA.

Conclusions: In this relatively large cohort of infants with pPDA, we observed unexpected high rates of BPD, PH, and BPD+PH. Non-availability of surgical ligation for the pPDA and confirmed sepsis may play a role in the development and severity of these outcomes.