Title of Abstract:

Management of Patent Ductus Arteriosus (PDA) in Extremely Low Birth Weight (ELBW) Infants - Single Center Experience

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Abstract Description:

Background: Management of PDA in the ELBW infants has evolved over the years but remains controversial with significant variability in practice among neonatologists. Treatment ranges from conservative management with fluid restriction to targeted pharmacologic therapy with NSAID and surgical ligation when medical management fails.

Objective: To evaluate management approach of PDA and associated morbidities in ELBW infants admitted to a tertiary-quaternary care academic NICU.

Methods: This is a retrospective chart review of infants with birth weight ≤1000 grams who were admitted to the NICU at UCI Medical Center from January 2014-December 2016. Birthweight, gestational age, diagnosis of PDA and treatment modality for PDA were abstracted. Patients were grouped into different management strategies: conservative approach (no treatment), pharmacologic treatment with Indocin or ibuprofen and surgical ligation. Common morbidities of prematurity were noted and compared among the treated and non-treated groups.

Results: Total of one hundred seventeen ELBW infants with birthweight ≤1000 grams were admitted during the study period. Four infants died early in their hospital course and one with congenital anomalies were excluded, leaving 112 infants eligible for final analysis. Thirty out of 112 infants (27%) had no evidence of PDA; 20/82 (24%) with echocardiographic findings of PDA were not treated versus 62/82 (75%) who received pharmacologic treatment; 9 of whom had treatment failure and subsequently underwent surgical ligation. Common morbidities, such as BPD, NEC and IVH are shown below (table).

	No PDA (30)	PDA No Tx (20)	PDA Mx (53)	PDA STx (9)
BPD* – O2@36wks	6/28 (21%)	9/20 (45%)	29/52 (56%)	7/9 (78%)
Confirmed NEC	4/30 (13%)	2/20 (10%)	10/53 (19%)	1/9 (11%)
Severe* IVH	4/30 (13%)	1/20 (5%)	4/53 (8%)	2/9 (22%)
BW• (g + SD)	842 (+ 162)	824 (+149)	736 (+160)	623 (+98)
GA • (wk, + SD)	27.5 (+2.5)	26.8(+1.9)	25.7 (+1.8)	24.5 (+1.2)

*No statistical significance between the PDA groups using X-square testing for (BPD, NEC and severe IVH);

•BW and GA are significantly different by one way ANOVA

Conclusion: Conservative approach to management of PDA in ELBW infants is feasible and does not increase the risk of common morbidities of extreme prematurity. Surgical ligation may increase the risk of BPD.

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