

EFFECTS OF A PATENT DUCTUS ARTERIOSUS ON POSTPRANDIAL INTESTINAL BLOOD FLOW IN EXTREMELY LOW BIRTH WEIGHT (ELBW) NEONATES

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Background: Patent ductus arteriosus (PDA) affects superior mesenteric artery blood flow velocity (SMA BFV) in fasting neonates. Recently, it has been reported that PDA affects postprandial mesenteric perfusion in premature baboons; however, the effects of PDA on postprandial mesenteric perfusion in preterm neonates have not been evaluated.

Aims : To determine whether PDA affects postprandial SMA BFV in ELBW neonates.

Methods: Appropriate for gestational age, ELBW preterm neonates, tolerating bolus enteral feedings were enrolled in this prospective observational study. Pulsed Doppler was used to measure preprandial and postprandial (at 30-min and 60-min) time-averaged mean, peak and end diastolic velocities (TAMV, PSV, EDV) once during the day of life 5 to 7; at the same time, PDA size was estimated using the PDA:left pulmonary artery (LPA) ratio : 0.5 (i.e., moderate/large PDA) and < 0.5 (i.e., small/no PDA). Mean values across time were graphed to illustrate relative changes in moderate/large and no/small PDA groups. Repeated measures ANOVA was used to compare SMA BFV changes between the groups from preprandial to 30-min and 60-min postprandial for each type of measured velocity (TAMV, PSV, EDV).

Results: Of the 38 infants studied, 16 were in the no/small PDA group; 22 were in the moderate/large PDA group. Postprandial TAMV, PSV and EDV were not different between these two groups (p values were 0.798, 0.315 and 0.59, respectively).

Conclusions: Changes in postprandial mesenteric blood velocity did not differ between infants with no/small PDA versus moderate/large PDA in this study's cohort of 38 ELBW neonates.