

Title: Echocardiographic assessment of patent ductus arteriosus flow pattern in premature infants

Bai-Horng Su, bais@ms49.hinet.net

Hsiao-Yu Chiu, Hsiang-Yu Lin, and Ming-Hsia Lin,

Professor and Chair, Department of Pediatrics, School of Medicine, China Medical

University and China Medical University Hospital, Taiwan

Dear Editor:

The recent article of retrospective comparison of two methods, colour Doppler ductal diameter and pulsed Doppler flow pattern, as echocardiographic indicator for patent ductus arteriosus (PDA) treatment in preterm infants by Condò et al was well-designed and interested.[1] I agree the conclusion of that both methods are significantly associated, and may use as a cross check to assist in the management of preterm infants with a PDA.

However, the following statement in the Discussion caused a little concern: "If, instead, treatment is indicated by a pulsatile or growing pattern, as was done in another RCT, a substantial proportion of infants may be treated despite having a ductal diameter <2.0 mm". The reference given for this statement is our RCT.[2] Although, as found in their study, 40 of the 83 echocardiographic traces classified as growing or pulsatile had a diameter <2.0 mm, their flow patterns did reveal the significant left to right shunting and did reflect the realistically hemodynamic status of the PDA that deserved treatment.

The authors described that 82.4% of the PH pattern group having ductal diameter values >2.0 mm. However, there was no data showing the percentage of transition from PH pattern to closing or closed pattern. According to our previous reports,[3,4] about 50% of PH patterns remained to be non-significant PDA and changed to closing or closed patterns. And if a ductal diameter >2.0 mm is used as the indicator of treatment as suggested by the authors, 41.2% infants with PDA of PH pattern may be treated unnecessarily despite remaining non-significant and finally closed spontaneously.

The authors indicated that a significant portion (28/197, 14.2%) of echocardiographic studies had a flow pattern could not be clearly classified. These traces appeared intermediate between the pulsatile and closing patterns. We would like to remind that

the classification of PDA flow pattern depends on the profile of the pulsed Doppler wave form as well as the flow velocity, the pulsatile pattern has a left to right shunt with a pulsatile notched contour of peak flow velocity about 1.5 m/second, and closing pattern has a characteristic continuous profile with a peak flow velocity of about 2 m/second.[3,4]

Finally, we would like to highlight the importance of the sequential echocardiographic assessment of hemodynamic status rather than to depend only on a spot time measurement. What is most important is whether the echocardiographically derived index can detect prospectively the development of clinically significant PDA.

REFERENCES

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