# Letter to Editor

# Letter to the Editor: Status of Pulmonary Artery Pressures on Echocardiography among High-Risk New-borns

## Dear Editor,

We read with great interest the original article by Ahmed *et al.*<sup>[1]</sup> in the recent issue of your journal. We would like to commend the authors for their valuable study, but at the same time feel that few clarifications and comments would benefit the general readers of the journal:

While pulmonary hypertension of the new-born (PPHN) has been defined in neonatal medicine text books<sup>[2]</sup> as the failure of normal pulmonary vascular adaptation birth that produces severe hypoxemia and at presents with respiratory distress, labile oxygenation, deferential saturation, and profound hypoxemia despite oxygen and mechanical ventilation, the authors of this study have designed it to assess neonates with the risk factors for PPHN who have some degrees of pulmonary arterial hypertension (PAH) "not significant enough to cause hypoxemia and desaturation." For such purpose, they have defined PPHN as pulmonary artery systolic pressure >50% of systolic blood pressure in addition to patent ductus arteriosus/patent foramen ovale (PDA/PFO) flow,<sup>[1]</sup> while findings that confirm PPHN in echocardiography include bidirectional or predominantly right-to-left shunting across the foramen ovale or ductus arteriosus and other echocardiographic findings only are "suggestive" for PPHN diagnosis.<sup>[2]</sup>

With such definition, it seems to make some dilemmas such as:

- 1. Prevalence: The significant difference between the reported prevalence of PPHN in this study compared to previous studies (13.5% vs. 3%–5%) which use pre-post ductal saturation and shunt in echocardiography as the criteria for PPHN, while even in this study, only 12 cases (3%) have shunt at PDA/PFO which is match with similar previous studies and cases of persistent PPHN at 6 weeks are just seemed in these cases
- 2. Hemodynamic instability and outcome: With such definition authors find, only three risk (perinatal meconium-stained factors asphyxia, amniotic fluid, and respiratory distress) to have significant association with PAH in their study. In these situations, especially birth asphyxia (which has the most association), the hemodynamic of new-born is almost always unstable and systemic

blood pressure (SBP) which has been used as a criterion in this study is low,<sup>[3]</sup> so some normal PAP will be higher than 50% of such low SBPs and prevalence of PPHN been overestimated. This disproportion of considered definition and real shunt through PDA/PFO mentioned in the result section of paper where they mentioned: "So it's not the absolute value of PAP which is important but altered hemodynamics which can vary from one neonate to another and is dependent on various factors such as gestational age."

This hemodynamic instability also became apparent in this research result of outcome where there is a significant difference between so called PPHN group and non-PPHN group which is more obvious in asphyxiated newborns (out of 18 cases with PAH, 12 [66.4%] neonates expired, while in the non-PAH group, only 1 [4.3%] new-born died).<sup>[1]</sup>

3. Not considered confounding factors: The majority of infants in these conditions receive inotropes as part of the management of their unstable hemodynamic<sup>[4]</sup> which raise their SBP compared with infants that did not receive such agents, so with same PAP they have not been diagnosed with PPHN.

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### **Conflicts of interest**

There are no conflicts of interest.

Mohammad Radgoodarzi, Zahra Vahedi<sup>1</sup>, Reza Behmadi<sup>1</sup> Department of Paediatrics, Hazrat-e-Rasool General Hospital, Iran University of Medical Science, <sup>1</sup>Department of Pediatrics, Firoozabadi Clinical Research Development Unit, Iran University of Medical Sciences, Tehran, Iran

> Address for correspondence: Dr. Reza Behmadi, Firoozabadi Clinical Research Development Unit (FCRDU), Firoozabadi Teaching Hospital, Ray Square, Tehran, Iran. E-mail: behmadi.r@iums.ac.ir

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