Why don’t all women with preeclampsia with severe features develop pulmonary edema?

We thank Jha and Jha for their comments on our work. The determinants of myocardial and pulmonary edema, are likely multifactorial. The goal of this study, however, was to address the conflicting results in the echocardiography literature suggesting a degree of reduced left ventricular ejection fraction (LVEF) detected using various methods of LVEF quantification. We selected cardiac magnetic resonance imaging (MRI) to assess the LVEF for its superior volumetric assessment and high degree of interobserver correlation. Currently, MRI-based strain imaging is investigational without a clinical indication for use. Therefore, the finding of a normal LVEF on cardiac MRI in all groups, confirms that overtly reduced LVEF is not the cause of pulmonary edema.

We expected to find a stark difference between women with preeclampsia complicated by pulmonary edema and those without pulmonary edema. Instead, the MRI findings in all women with preeclampsia with severe features were similar, and they differed significantly from women with preeclampsia without severe features and normotensive controls. Jha and Jha note that the left atrial volumes indexed to body surface area (LAVI) were above the echocardiographically derived cutoff of 34 mL/m², which could suggest diastolic dysfunction in the women with pulmonary edema. The left atrial volumes reported were cardiac MRI-derived volumes, however, and the LAVI in all groups fell below 39 mL/m², which is the normal mean LAVI for women on MRI.

The suggestion that pulmonary edema occurs on the basis of the severity of hypertension is not supported by our findings. Women with pulmonary edema had the highest mean systolic pressures, and women with severe features of HELLP (hemolysis, elevated liver enzymes, low platelet count) syndrome and eclampsia had the highest diastolic pressures; however, there was no statistically significant difference between these 2 groups. The difference in blood pressures was driven by the relatively lower blood pressures in the group having preeclampsia without severe features and normotensive controls.

As a condition characterized primarily by endothelial dysfunction, a degree of increased capillary permeability is expected in preeclampsia. Although women having preeclampsia with severe features are thought to have more severe endothelial dysfunction, it is not clear whether endothelial dysfunction and capillary permeability are more abnormal in one manifestation of preeclampsia with severe features than another. We feel that this neither satisfactorily differentiates the groups nor conclusively describes the mechanism underlying pulmonary edema. Indeed, the question may not be why some women with preeclampsia develop pulmonary edema but rather why all women with preeclampsia with severe features do not.

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REFERENCES
1. Jha N, Jha AK. Pathophysiology of pulmonary and myocardial edema in preeclampsia. Am J Obstet Gynecol 2022;228:118.
2. Harkness A, Ring L, Augustine DX, et al. Normal reference intervals for cardiac dimensions and function for use in echocardiographic practice: a guideline from the British Society of Echocardiography. Echo Res Pract 2020;7:G1–18.
3. Kawel-Boehm N, Hetzel SJ, Ambale-Venkatesh B, et al. Reference ranges (“normal values”) for cardiovascular magnetic resonance (CMR) in adults and children: 2020 update. J Cardiovasc Magn Reson 2020;22:87.
4. Erez O, Romero R, Jung E, et al. Preeclampsia and eclampsia: the conceptual evolution of a syndrome. Am J Obstet Gynecol 2022;226:S786–803.

Social media campaign and research program to address COVID-19 vaccine hesitancy in pregnancy: correspondence

TO THE EDITORS: We would like to share our ideas on the publication titled “One Vax Two Lives: a social media campaign and research program to address COVID-19 vaccine hesitancy in pregnancy.” Marcell et al reviewed