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**Fetal and neonatal modified myocardial performance indices in preeclamptic versus normotensive pregnancies: A prospective cohort study**

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**Objective:** To compare fetal and neonatal cardiac functions in term of global, systolic and diastolic function between the preeclampsia and normotensive blood pressure of pregnancies.

**Methods:** A prospective cohort study was conducted at a university hospital in Northeast Thailand. Twenty-nine pregnancies diagnosed as preeclampsia with or without severe features were compared with 29 normotensive pregnancies. Global cardiac, systolic and diastolic function were assessed at prenatal and postnatal period, by a professionally trained Obstetrician and Pediatric cardiologist, respectively.

**Results:** Fetal left modified myocardium performance index (Mod-MPI) in preeclampsia and normotensive blood pressure were  $0.60 \pm 0.08$ , and  $0.59 \pm 0.08$  (p value = 0.341), respectively, while fetal right Mod-MPI were  $0.57 \pm 0.16$  and  $0.54 \pm 0.21$  (p value = 0.861), respectively. There were no statistically significant differences in terms of fetal isovolumic contraction time (ICT), isovolumic relaxation time (IRT), ejection time (ET), aortic peak systolic velocity (Ao PSV), pulmonary artery peak systolic velocity (PA PSV), mitral valve (MV) E:A ratio and tricuspid valve (TV) E:A ratios between the two groups. Neonatal mitral valve E peak systolic velocity (MV-E PV) in preeclamptic and normotensive blood pressure groups were significantly different at  $51.1 \pm 8.02$  cm/sec and  $43.56 \pm 5.21$ cm/sec (p value = 0.036), respectively whereas neonatal left Mod-MPI, mitral valve A peak systolic velocity (MV-A PV), MV E:A ratio and Ao PSV were not significantly different (p value = 0.436, 0.119, 0.379 and 0.709), respectively.

**Conclusions:** Neonatal MV-E PV of the preeclampsia group was significantly higher than the normotensive blood pressure group while no statistically significant differences in term of global cardiac and diastolic functions during the fetal period between two groups.

**Keywords:** fetal Mod-MPI, neonatal Mod-MPI, preeclampsia, normotensive.