Use of bromocriptine for the treatment of peripartum cardiomyopathy: a meta-analysis of randomized controlled trials

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Background Peripartum cardiomyopathy is a rare, pregnancy associated cause of left ventricular heart failure in previously healthy women. It remains an important cause of cardiac-related maternal morbidity and mortality worldwide. Half of the patients will recover left ventricular function after 6 months. However, in the remainder of patients who do not recover cardiac function, they will require advanced heart failure therapies. Bromocriptine, a dopamine agonist which inhibits prolactin release, has demonstrated improvement in left ventricular recovery and clinical outcome. We sought to determine the effect of adding Bromocriptine to standard heart failure therapy on the improvement and recovery of left ventricular function of these patients.

Inclusion Criteria. Studies were included if they satisfied the following criteria:1) Randomized Controlled Trials; 2) Pregnant patients who fulfilled the criteria for diagnosis of peripartum cardiomyopathy and 3) Reported data on improvement in left ventricular ejection fraction and clinical outcomes.

Methods. Using PUBMED, Clinical Key, Science Direct, Scopus, and Cochrane databases, a search for eligible studies was conducted from June to December 31, 2018. The quality of each study was evaluated using the Cochrane Risk of Bias Tool. The primary outcome of interest is on the effect of Bromocriptine on the improvement of left ventricular function and clinical outcome among these patients. Review Manager 5.3 was utilized to perform analysis of random effects for continuous outcomes.

Results. We identified 2 randomized controlled trials of 58 pregnant patients diagnosed with peripartum cardiomyopathy, showing that among those who received Bromocriptine on top of standard heart failure therapy, there is a significant improvement in the left ventricular ejection fraction at 6 months [mean difference 15.14 (95% CI, 6.53 to 23.75) p <0.05] compared to standard heart failure therapy alone. It was also observed that those who received Bromocriptine had better clinical outcomes.

Conclusion. The addition of Bromocriptine on top of standard heart failure therapy significantly improved the left ventricular ejection fraction of patients with peripartum cardiomyopathy at 6 months post-partum. This novel therapy may be considered to improve the management of these patients.