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More research needed on rare, potentially fatal CV disorder that can strike healthy pregnant women

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Peripartum cardiomyopathy (PPCM) is a rare disorder characterized by weakened pumping of the heart, or "left ventricular dysfunction," which results in otherwise healthy pregnant women experiencing heart failure shortly before or up to five months after they deliver healthy babies. Despite the seriousness of this condition, a new study published in the *Canadian Journal of Cardiology* revealed that no significant research has been undertaken to explore how to prevent or treat this disorder. In fact, only three studies of possible treatments have ever been conducted, and only two of those have shown any promise.

"Despite the serious illness and high risk of dying attributed to PPCM in young, otherwise healthy women, the evidence guiding clinicians in the treatment of this dramatic disease is scarce and of poor quality," explained lead investigator E. Marc Jolicoeur, MD, MSc, MHS, Associate Clinical Professor and Director of Research, Adult Interventional Cardiology Program, and first author Olivier Desplantie, MDCM, both of the Montreal Heart Institute, University of Montreal.

PPCM affects from 1 to 5 women per 10,000 live births. Despite current advances in heart failure treatment, mortality related to PPCM at one and ten years can be as high as 4% and 7%, respectively. These young, healthy women typically die from sudden cardiac death or progressive heart failure with 18% of deaths occurring by the first week and 87% by the sixth month after diagnosis. One in ten of these patients will require

heart transplantation.

Following a comprehensive search of the medical literature, investigators identified two randomized controlled trials (RCT) that investigated the effects of the hormone bromocriptine and the drug levosimendan on PPCM, as well as a third, non-randomized prospective study of another drug, pentoxifylline. In the bromocriptine study, 80% of the patients receiving the drug experienced a significant reduction in adverse outcomes compared to10% of the control patients. However, this study included only 20 South African patients.

In the RCT of levosimendan, there were 24 patients enrolled. There was no difference in all-cause mortality and no differences in any other cardiac functional measurements between the therapy and control groups. In the third study reviewed, after providing standard care to 29 patients with PPCM, pentoxifylline was administered to 30 subsequent patients. Failure to improve was found in 52% of the standard care group, while only 27% of the pentoxifylline failed to improve.

For a disorder with such severe consequences, what can explain the apparent lack of interest? In an editorial in the same issue, Ricardo Cardona-Guarache, MD, MPH, and Jordana Kron, MD, of Virginia Commonwealth University, Richmond, Virginia, suggest several reasons.

First, because the pathophysiology of PPCM is not well understood, it is difficult to select potential therapies for trials. While more common treatments for heart failure, such as beta-blockers and ACE inhibitors, might be expected to help, results for women with PPCM have not been favorable.

Further Cardona-Guarache and Kron noted that, "Historically, exclusion of women from clinical trials was common practice, and the lack of data on pregnant women and women of childbearing age can make informed

decision-making difficult for physicians and patients. Because PPCM occurs exclusively in women of childbearing age, it is an extreme example that highlights the systematic problem of gender bias in cardiovascular research." They added that women account for only 29% of patients in heart-failure trials and 25% in coronary artery disease trails.

"PPCM needs further high quality investigation to guide disease-specific therapy recommendations. We feel that the review by Jolicoeur and his co-investigators should serve as a call to action for investigators to renew efforts to further define the benefits of existing therapies and develop novel therapies for PPCM," stated Cardona-Guarache and Kron.

More information: "The Medical Treatment of New Onset Peripartum Cardiomyopathy: A Systematic Review of Prospective Studies" by Olivier Desplantie, MD; Maxime Tremblay-Gravel, MD, MSc; Robert Avram, MD; Guillaume Marquis-Gravel, MD, MSc; E. Marc Jolicoeur, MD, MSc, MHS, FRCP-C, FACC, FSCAI; and Anique Ducharme, MD, MSc, DOI: dx.doi.org/10.1016/j.cjca.2015.04.029

"Treatment of Peripartum Cardiomyopathy: A Call to Action," by Ricardo Cardona-Guarache, MD, MPH; and Jordana Kron, MD, DOI: dx.doi.org/10.1016/j.cjca.2015.05.025

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