Case Report

Postpartum Cardiomyopathy Treated with Bromocriptine

Vikas Ratnaparakhee[1]

ABSTRACT

Peripartum cardiomyopathy (PPCM) is recognized as an important cause of pregnancy related heart failure with high morbidity and mortality. It is a Poorly understood disorder characterized by left ventricular systolic dysfunction and symptoms of heart failure. It usually occurs between the last month of pregnancy and the first 5 months postpartum. Oxidative stress causing increase in a cleaved 16 kDa prolactin is thought to be responsible for PPCM. Bromocriptine that reduces the prolactin production may improve outcomes in patients with peripartum cardiomyopathy. In this case report we have described a case of PPCM successfully treated with bromocriptine.

Introduction :

Peripartum cardiomyopathy (PPCM) is a poorly understood rare disorder. It presents with left ventricular systolic dysfunction and symptoms of heart failure. It occurs between the last month of pregnancy and the first 5 months of postpartum. Postpartum cardiomyopathy (PPCM) is a disease of unknown origin and exposes women to a high risk of mortality after delivery despite optimal medical therapy.[1]

Prolactin is upregulatedin postpartum where it induces lactation and promotes reshaping of the uterus. It exists in at least 2 biologically active forms with opposing effects. The physiological full-length 23 kDa prolactin promotes angiogenesis and protects endothelial cells whereas the cleaved 16 kDa derivate induces endothelial cell apoptosis and disrupts capillary structures. Recent data showed that oxidative stress promotes the postpartum generation of 16 kDa prolactin, which is causally related to PPCM. In turn, prolactin blockade with bromocriptine was successful in preventing onset of PPCM in mice and in patients at high risk for the disease. Here, we evaluated the efficacy of bromocriptine for recovery in patients with acute PPCM.

Case Report :

A 25-year-old female was admitted to a peripheral hospital for caesarian section and was referred to our hospital for shortness of breath after 10 days. She was admitted with heart failure NYHA functional class III. (NYHA is New York Heart Association) On admission her clinical parameters were like this heart rate 110 beats per minute, respiratory rate 28 per minute, blood pressure 120/70 mm Hg, edema feet was noted, patient was anemic her Hb was 8.4 gms% , Xray showed bilateral pleural effusion and mild cardiomegaly,ECG shows sinus tachycardia otherwise within normal limits. 2-D-Echocardiography was done outside which revealed severe left ventricular (LV) systolic dysfunction with ejection fraction of 35% only. Serum prolactin levels were not done. Diagnosis of Postpartum cardiomyopathy was done by ECHO findings.Heart failure therapy was initiated. Anemia correction was done with the help of drugs. She had no pre-existing cardiac disease, exposure to cardio toxic agents, or positive family history of pregnancy-related heart disease. Lactation was stopped by treatment with bromocriptine5 mg/day for 6 weeks LV function and heart failure symptoms improved to completely normal level. ECHO done after 6 months was absolutely normal with normal LVEF 59%. Patient is asymptotic and completely normal.

Discussion :

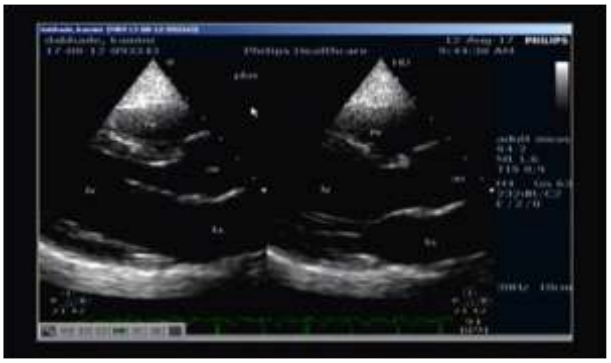
In a small pilot study, bromocriptine prevented the recurrence of PPCM in a subsequent pregnancy in women who survived PPCM. This case reports patient with acute PPCM in whom bromocriptine treatment in addition to standard heart failure therapy was associated with recovery and prevention of chronic heart failure. This observation supports the notion that prolactin, specifically its 16 kDa derivate, seems to play a crucial role not only

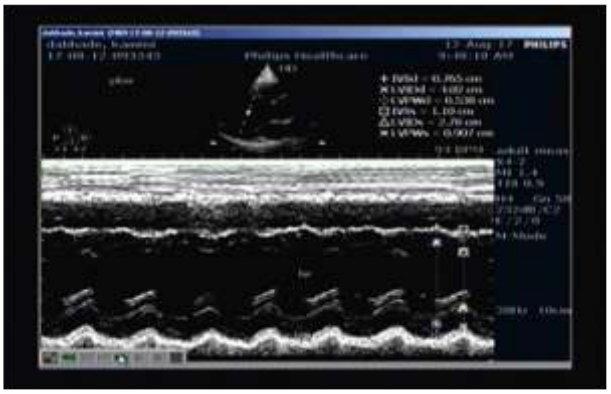
[1]Dr. Hedgewar Hospital, Aurangabad

Address for Correspondence -
Dr. Vikas Ratnaparakhee
E-mail : vikasrr25@gmail.com

Received on 1st February 2018 Accepted on 30th June 2018

Post Treatment Echo of the Patient





for the initiation but also for the progression of PPCM. Experimental data suggest a major protective effect of bromocriptine in PPCM by eliminating 16 kDa prolactin. Previous reports attribute positive effects to bromocriptine treatment in heart failure patients independent from PPCM. These 16 kDa prolactin-independent effects of bromocriptine may include the elimination of the vasoconstrictive 23 kDa prolactin as well as direct agonistic effects of bromocriptine on the dopamine DA2 receptors, which may lower norepinephrine release, antagonize aldosterone, and down-regulate type 1 angiotensin receptors. Therefore, beneficial effects of bromocriptine on the sympathetic nervous system and on hemodynamics may combine to assist recovery of PPCM patients.

The study of role of bromocriptine in management of peripartum cardiomyopathy (PPCM) was done by Yaméogo NV, Kagambèga LJ et al.[2] Ninety six Patients were divided in two groups' bromocriptine non receivers Br-and receivers Br+. The dose was 2.5 mg twice daily for 4 weeks. Both groups received conventional heart failure treatment. Statistically significant long lasting benefits were noted in Br+ group. Consistent results with substantial benefit were seen ina study by Hilfiker-Kleiner D et al[3] who compared long term and short term use of bromocripine in patients with PPCM. Bromocriptine treatment was associated with high rate of full LV-recovery and low morbidity and mortality in PPCM patients compared with other PPCM cohorts not treated with bromocriptine. No significant differences were observed between 1W and 8W treatment suggesting that 1-week addition of bromocriptine to standard heart failure treatment is already beneficial with a trend for better full-recovery in the 8W group.

However, the patient was treated with angiotensin-converting enzyme inhibitors and diuretics before and during bromocriptine therapy, which may limit the mentioned effects of bromocriptine on sympathetic tone and hemodynamics. Nevertheless, it is possible that a multifactorial role of bromocriptine might ultimately account for its beneficial effects.

As a limitation to the present observation, it should be noted that some PPCM patients recover spontaneously. Therefore; a controlled randomized study is needed in order to determine the true value of bromocriptine as a specific novel therapy for PPCM.

References :

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