Outcomes of Peripartum Cardiomyopathy in the Current Era of Heart Failure Management

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Background: Patients with peripartum cardiomyopathy (PPC) have a better prognosis than other forms of cardiomyopathy. However, historical studies showed that 40 to 50% of patients with PPC do not have a meaningful recovery or experienced a significant deterioration in their cardiac function. These studies were done before the current era of heart failure management. We report the University of Alabama at Birmingham’s experience with this form of cardiomyopathy.

Methods and Results: Thirty-seven patients were referred to our program with peripartum cardiomyopathy between January 1, 1990 and December 31, 2002. The data was extracted from the clinical charts. The age at diagnosis was 28±6.6 years, and on average patients were 33 days postpartum (range 60 days 6-160 days post-partum). Eighty-five percent of the patients were referred because of severe DCM. The mean LVEDD was 57±11.5 mm, the LVEF was 23.5±11.5%. Thirty-two (87%) were treated with ACE inhibitors, 9 (25%) with angiotension receptor blockers and 17 (46%) with beta-blockers. In addition they were also treated with digoxin (78%), diuretics (88%), spironolactone (33%), nitrates (6%) and warfarin (41%).

Patients were followed for an average of 28 (range 1-94) months. Four patients were transplanted, 1 died and 1 was lost to follow-up. The NYHA class improved significantly (P<0.001). More importantly, the NYHA class improved in all but the patients who died or were transplanted, 1 died and 1 was lost to follow-up. The NYHA class III or IV improved from 76% to 81% (P=0.0017). Seventy-two percent of the patients had a significant improvement in the LVEF to >0.25, 0.25-0.72, 0.72-0.92, p=0.0007). A stroke occurred in 65 C and 80 M patients (RR 0.79, CI 0.57-0.92, p=0.03). Of these, 21 and 36 lead to death in C and M respectively. CV death or non-fatal myocardial infarctions were 95.9% and 75.8%. Adverse events would be expected to reflect this advantageous outcome. The alpha-1 and beta-2-blocking effects of carvedilol, which can possibly contributed to its survival advantage, are expected to be reflected in the adverse events profile.

Results: Of 1511 patients allocated to carvedilol 93.6% experienced an adverse event and 73.8% a cardiovascular adverse event. Of 1518 patients allocated metoprolol the figures were 95.8% and 75.8%. Adverse event reports of sudden death (0.5% versus 0.3%) was very low in both groups. MI (4.6% versus 6.3%), unstable angina (3.8% versus 5.1%) and stroke (3.5% versus 4.3%) were less common with carvedilol. Heart failure (42.6% versus 44.9%), dyspnoea (9.7% versus 11.2%) and peripheral oedema (2.6% versus 3.7%) occurred less frequently with carvedilol. No consistent differences existed with regard to bradycardia or heart block. Hypotension (14.2% versus 10.5%), dizziness (12.4% versus 11.7%) and syncope 8.2% versus 6.3% were commoner with carvedilol. Diabetes (11.1% versus 12.5%) and hypertonia (12% versus 3.2%) were less common with carvedilol. The incidence of bronchosospasm (0.7% versus 0.4%) and asthma (0.5% versus 0.3%) was very low in both groups. These differences do not take account of the fact that because of the greater mortality severe DCM. These patients were more prone to events of heart failure. Although 10 of the 11 were treated with corticosteroids, survival rate was significantly worse in CS-HF than DCM (40% versus 72%, p<0.001).

Conclusions: CS-HF had different clinical features and outcomes as compared with DCM. Understanding these features and comprehensive examinations including whole body gallium-67 scan and biopsies from the extra-cardiac tissue are useful for the diagnosis of CS patients presenting as unexplained heart failure and cardiomyopathies.

Identification of Cardiac Sarcoidosis From the Patients Presenting as Unexplained Heart Failure and Cardiomyopathies

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Background: Diagnosis of cardiac sarcoidosis (CS) is usually confirmed during the follow-up of extra-cardiac sarcoidosis. However, the diagnosis is often difficult when CS patients show heart failure as the first manifestation without evidence of involvement of other organs because endomyocardial biopsy frequently fails to reveal non-caseating epithelioid granulomas. Majority of these patients were diagnosed as idiopathic dilated cardiomyopathy (DCM). Methods: To characterize CS patients presenting as unexplained heart failure (CS-HF), we reviewed 30 consecutive CS patients diagnosed between 1987 and 2002 and identified 11 CS-HF patients. Clinical findings and outcome of the CS-HF were compared to those of 123 DCM patients diagnosed at the same period. Results: Abnormal accumulation of gallium-67 in the heart or extra-cardiac tissue was the first clue to suspect CS in 7 of the 8 CS-HF who underwent the whole body gallium-67 scan. Granulomas were confirmed from the heart in 5 patients, lymph nodes in 4, skin in 1 and skeletal muscle in 1. The CS-HF showed higher incidence of female (70% vs. 22%, p<0.001), complete atrioventricular block (70% vs. 0%, p<0.0001) and sustained ventricular tachycardia (40% vs. 9%, p<0.05), and lower cardiac index (2.0±0.4 vs 2.5±0.5 l/min/m², p<0.05) and left ventricular dimension (58±11 mm vs. 66±8 mm, p<0.05) as compared with DCM patients. Furthermore, a mean follow-up of 80 months, 6 CS-HF died suddenly or of refractory heart failure. Although 10 of the 11 were treated with corticosteroids, survival rate was significantly worse in CS-HF than DCM (40% versus 72%, p<0.001).

Conclusions: CS-HF had different clinical features and outcomes as compared with DCM. Understanding these features and comprehensive examinations including whole body gallium-67 scan and biopsies from the extra-cardiac tissue are useful for the diagnosis of CS patients presenting as unexplained heart failure and cardiomyopathies.

Carvedilol Better Protects Against Vascular Events Than Metoprolol in Heart Failure: Results From COMET

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Background: In COMET carvedilol (25 mg bid) was shown to reduce mortality compared to metoprolol (IR 50 mg bid) (512 deaths/1511 versus 600/1518, p=0.0017) in the treatment of heart failure with a mean follow-up of 57.9 months. Adverse events would be expected to reflect this advantageous outcome. The alpha-1 and beta-2-blocking effects of carvedilol, which can contribute to its survival advantage, are expected to be reflected in the adverse events profile.

Methods: 3029 patients with left ventricular systolic dysfunction and NYHA class II to IV were randomised to double-blind study therapy. Patients were seen every four months over a period of 47 to 71 months. Adverse events as reported by the investigator were recorded on the case record form and analysed centrally.

Results: Of 1511 patients allocated to carvedilol 93.6% experienced an adverse event and 73.8% a cardiovascular adverse event. Of 1518 patients allocated metoprolol the figures were 95.8% and 75.8%. Adverse event reports of sudden death (8.9% versus 12.1%), myocardial infarction (4.6% versus 6.3%), unstable angina (3.8% versus 5.1%) and stroke (3.5% versus 4.3%) were less common with carvedilol. Heart failure (42.6% versus 44.9%), dyspnoea (9.7% versus 11.2%) and peripheral oedema (2.6% versus 3.7%) occurred less frequently with carvedilol. No consistent differences existed with regard to bradycardia or heart block. Hypotension (14.2% versus 10.5%), dizziness (12.4% versus 11.7%) and syncope 8.2% versus 6.3% were commoner with carvedilol. Diabetes (11.1% versus 12.5%) and hypokalaemia (2.0% versus 3.2%) were less common with carvedilol. The incidence of bronchosospasm (0.7% versus 0.4%) and asthma (0.5% versus 0.3%) was very low in both groups. These differences do not take account of the fact that because of the greater mortality severe DCM. These patients were more prone to events of heart failure. Although 10 of the 11 were treated with corticosteroids, survival rate was significantly worse in CS-HF than DCM (40% versus 72%, p<0.001).

Conclusions: The lower number of adverse cardiovascular events with carvedilol reflects the beneficial effect on mortality. Metabolic and haemodynamic adverse events are compatible with the known different properties of these two beta-blockers.