

## Patterns of Eosinophilia in Cardiac Patients and its Association with Endomyocardial Disease Presenting to Tertiary Care Hospital in Peshawar

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**Abstract :** Introduction: Eosinophilia, which can be categorized as mild, moderate, and severe form on the basis of increasing eosinophil counts, might be responsible for a wide range of cardiac manifestations, varying from a simple myocarditis to a severe state like endomyocardial fibrosis. Eosinophils are involved in the pathogenesis of a variety of cardiovascular disorder like Löffler endocarditis, eosinophilic granulomatosis with polyangiitis (EGPA), and hyper eosinophilic (HES). Among them HES carries and incidence rate b/w 48% and 75% and is the main causes of cardiac motility and mobility due to eosinophilia involvement. Aims and objectives: The aim of this study is to determine the frequency of eosinophilia in cardiac patients and to ascertain the evidence of endomyocardial diseases in eosinophilic patients in a cardiology institution Material and Methods: This cross sectional analytical study was conducted in hematology Department of Peshawar institute of Cardiology after approval from hospital ethical and research committee. All 70 patients were subjected to detailed history and clinical examination. Investigation like CBC, Chest X-ray, ECG, Echo, Angiography findings were used to monitor patient's clinical status. Data is analyzed using SPSS version 25 and MS Excel. Results: Out of 70 patients in our study, a total of 66 patients (94 %) shows evidence of cardiac manifestations. In our study, we have observed a number of abnormal ECG patterns in cardiac patients presenting with eosinophilia, like T wave changes, loss of R wave, sinus bradycardia with LVH strain, and ST wave abnormality. abnormal echocardiographic findings were observed in our patients, like valvular abnormalities (in 45.7%), RWMA abnormalities (in 2.8%), isolated ventricular dysfunction (in 21.4%), and in 10% patients, normal echocardiography. We further noted abnormal coronary angiography findings in cardiac patients with eosinophilia ranging from single vessel to multi vessel occlusions. Conclusions: Eosinophils are involved in the pathogenesis of a variety of cardiovascular disorders which can be detected by various diagnostic means, and the severity of the disease increases with time and with increasing eosinophil count ranging from simple myocarditis to a fatal condition like endomyocardial fibrosis. Thus, increased eosinophilic count as a laboratory parameter in cardiac patients may be a sign of endomyocardial damage which will further help cardiologist to intervene more aggressively than routine approach to a cardiac patient.

**Keywords :** eosinophilia, endomyocardial fibrosis, cardiac, hypereosinophilic syndrome

**Conference Title :** ICHBD 2022 : International Conference on Hematology and Blood Disease

**Conference Location :** Paris, France

**Conference Dates :** December 29-30, 2022