

# Comparison of 18F-FDG PET-CT and cardiac MRI in the diagnosis of Inflammatory Cardiomyopathy

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## INTRODUCTION

Inflammatory Cardiomyopathies (IC) - group of myocardial disorders with myocardial inflammation as the primary cause of cardiac dysfunction. Diagnosis and quantification of myocardial involvement in IC: **CMR and PET-CT: complementary or competing modalities?**

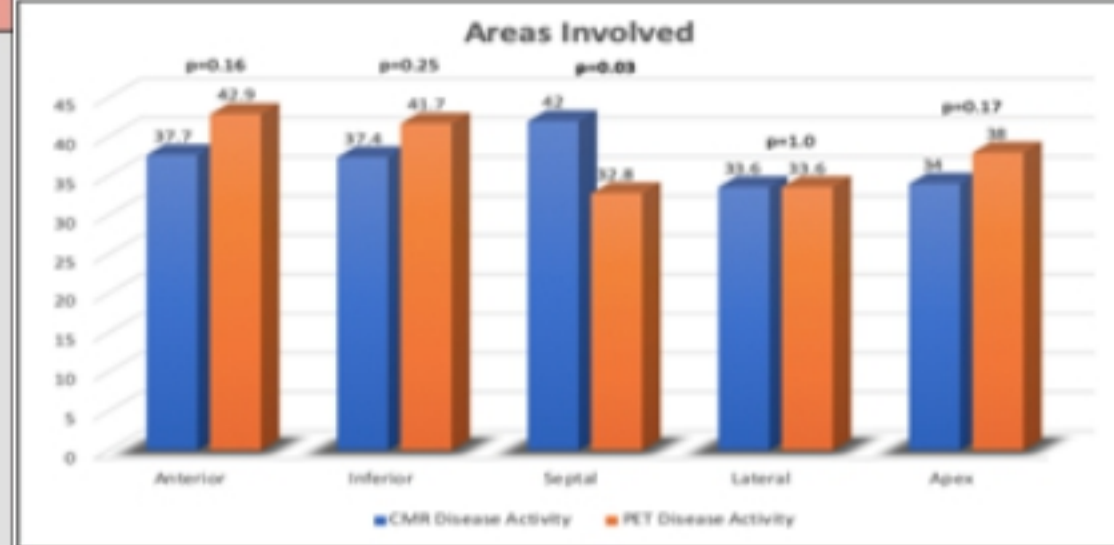
## OBJECTIVE

To compare the presence and extent of inflammation on 18F-FDG PET-CT and CMR in the diagnosis of IC

## METHODOLOGY

Data of 50 subjects who had undergone myocardial perfusion scan and 18F-FDG PET-CT were categorized and segmental comparison was done with Cardiac MR images

## RESULTS

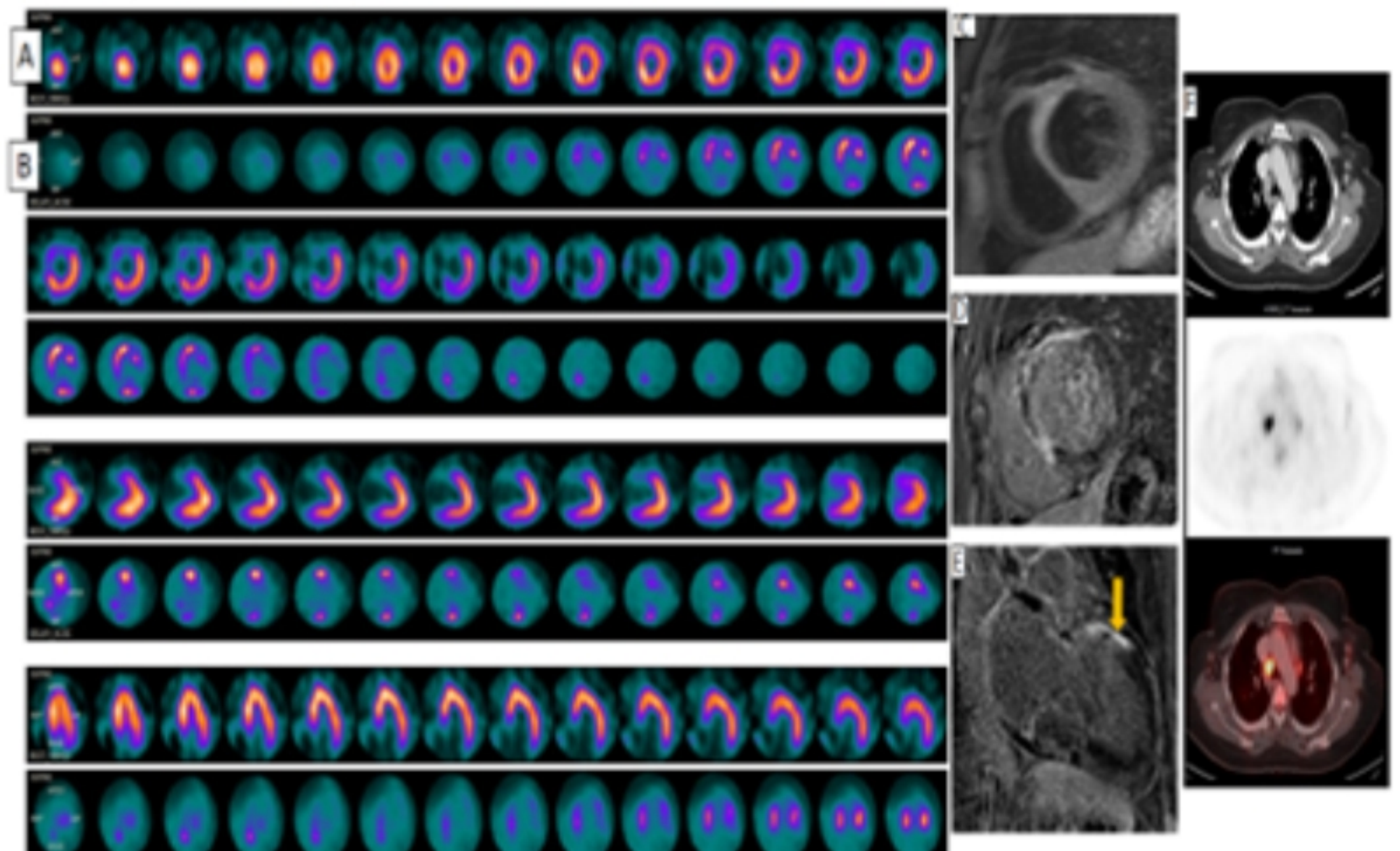


Stage	Perfusion defect	FDG Uptake	n(%)
I (early)	None	Increased	29(58%)
II (peak active)	Mild to moderate	Increased	16(32%)
III (progressive myocardial impairment)	Severe	Increased	3(6%)
IV (fibrosis)	Severe	Low	2(4%)

## DISCUSSION

PET showed myocardial involvement in early stages of the disease as compared to CMR.

Parameter	CMR	PET	Comment
LGE + Edema	Positive in 86% patients	NA	
Increased 18F-FDG uptake	Positive in 86% patients	Present	
Staging of the disease	Not done	Done with help of comparison of perfusion (SPECT) and metabolic (PET) findings	No standard methodology available to stage IC on CMR
Disease activity in patients with normal LVEF (>50%)	Lower detection compared to the patients with low LVEF (≤40%)	Similar detection as compared to the patients with low LVEF (≤40%)	CMR may detect disease activity in later stages of the disease
Segmental Disease activity	Significantly Higher detection of septal disease activity	Numerically higher detection of disease activity in anterior, inferior and apical segments	
Lymphadenopathy	Lower sensitivity	Higher sensitivity	



46yr/F, a K/C/O DM, with h/o syncope, ECG:intermittent complete heart block; Echo-RWMA; Normal coronary angiography. SA, VLA, HLA views of MPS(A) show severe perfusion defect in the mid to basal anterior wall and anteroseptum with increased FDG uptake on PET/CT (B); edema(C) & LGE on cardiac MRI (D, E - yellow arrow) - (progressive impairment). Focal FDG uptake in basal inferior wall with no corresponding perfusion defect on MPS or LGE on MRI - (early phase). FDG avid mediastinal nodes (F) on PET-CT; Biopsy - Granulomatous lymphadenitis

**CONCLUSION** 18F-FDG-PET/CT complements CMR in diagnosing disease activity, particularly in the early stages with a supplemental detection of extra-cardiac involvement