ABSTRACT

Role of PET CT in Multiple Myeloma

Key words: Multiple Myeloma, PET CT scan, Plasmacytoma.

Myeloma accounts for thirteen percent of the haematological malignancies and two percent of all malignancies. According to Indian Cancer Registry Program’s consolidated report of population based cancer data (1990-96) the average age of Multiple myeloma diagnosis is 55 years.

Conventionally, the investigations for diagnosis and remission status in MM is a cumbersome and painful procedure involving bone marrow studies, multiple blood investigations and skeletal survey with conventional radiography. In this study we tried to compare the whole body PET CT scan to correlate disease burden in both multiple myeloma and plasmacytoma as measured by PET/CT scan with standard staging and prognostic parameters and also to evaluate response to induction therapy using PET based SUV changes.

In our study we analysed the results of all myeloma patients who reported to our Institute from 1st Jan 2013 to 31st December 2014 and we had done PET scans for willing patients at the time of diagnosis and then at the end of planned induction therapy if they had achieved VGPR or better response.
We had total of 31 patients who underwent PET CT scan as part of the study. Of these three patients were upstaged to MM as they had multiple plasmacytomas and went on to receive treatment as MM. Of the treated cases of MM, 7 patients had VGPR or better response and they went ahead and got an end of treatment PET CT scan. The two patients who had stringent CR as per conventional criteria had no metabolic activity on the PET scan whereas the other two patients with CR response, one had absent metabolic activity while one had faint SUV of 1.2 and taken as CR.

Of three cases with Plasmacytoma who underwent end of treatment PET CT scan, one had metabolic CR on PET while other two had small unicentric activity with SUV of 1 and 1.3 and they were kept under follow up.

The overall survival and Event free survival at a median of 15 months in all the patients (n=112) was 76% and 43.1% respectively, following induction with novel agents.

Although the numbers were very small and the follow up was limited, PET CT scan appears to be a promising investigation in diagnosis and staging MM as well as in establishing the remission status. Further continuation of the study and bigger patient population is required for more detailed analysis.