

PLASTIC-study: protocol FDG-PET/CT

Patient preparation and scan acquisition / reconstruction

Preparation of patients for FDG-PET/CT, scanning and image reconstruction may all be performed according to the institutional protocols of the participating centres, preferably incorporating EANM and/or NVNG guidelines¹³.

In general, patients will have to refrain from strenuous exercise and fast for at least 4 to 6 hours before the injection of FDG. Patients should be prehydrated by drinking approximately 1 L of water in the 2 h before injection. Fasting blood glucose should preferably be below 11 mmol/L. After the injection of FDG, patients should remain seated or lying and silent for 1 h in a warm room. The acquisition of a PET scan from eyes to thighs should be started 60 min (range 55 - 75 min) after the injection of FDG, being accompanied by a low-dose CT of the same scanning range.

In some institutions, all PET scans are made with a standard-dose diagnostic CT with intravenous contrast. This is allowed in this study, although it is not preferable from a perspective of radiation protection and kidney protection, since all patients have already undergone a diagnostic CT shortly before the PET/CT for standard staging of their gastric cancer.

Scan interpretation and follow-up

Scans are read, interpreted and reported by the nuclear medicine physicians of the respective participating centres. The report generally includes information regarding:

- primary tumor visible on PET: yes / dubious / no, SUVmax (if the tumor is not visible, the SUVmax of the stomach wall can be reported), and location.
- locoregional lymph nodes visible on PET: yes / dubious / no, and location
- suspicion of distant metastases: yes / dubious / no, and location

The results of the PET/CT are discussed in the institutional MDT. If PET/CT identifies new lesions that are possible metastases, biopsy and/or additional imaging of a lesion is advised to confirm or exclude metastasis.