2-¹⁸fluoro-deoxy-D-glucose positron emission tomography (FDG-PET) for postchemotherapy seminoma residual lesions: a retrospective validation of the SEMPET trial


BACKGROUND
2-¹ fluoro-deoxy-D-glucose positron emission tomography (FDG-PET) has been recommended in international guidelines in the evaluation of postchemotherapy seminoma residuals. Our trial was designed to validate these recommendations in a larger group of patients.

PATIENTS AND METHODS
FDG-PET studies in patients with metastatic seminoma and residual masses after platinum-containing chemotherapy were correlated with either the histology of the resected lesion(s) or the clinical outcome.

RESULTS
One hundred and seventy seven FDG-PET results were contributed. Of 127 eligible PET studies, 69% were true negative, 11% true positive, 6% false negative, and 15% false positive. We compared PET scans carried out before and after a cut-off level of 6 weeks after the end of the last chemotherapy cycle. PET sensitivity, specificity, negative predictive value (NPV), and positive predictive value were 50%, 77%, 91%, and 25%, respectively, before the cut-off and 82%, 90%, 95%, and 69% after the cut-off. PET accuracy significantly improved from 73% before to 88% after the cut-off (P=0.032).

CONCLUSION
Our study confirms the high specificity, sensitivity, and NPV of FDG-PET for evaluating postchemotherapy seminoma residuals. When carried out at an adequate time point, FDG-PET remains a valuable tool for clinical decision-making in this clinical setting and spares patients unnecessary therapy.
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