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Title Criteria for appropriate use of Fludeoxyglucose Positron Emission Tomography (FDG-PET) in head and neck cancer

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Aim

To define criteria for appropriate use of FDG-PET for patients with head and neck cancer. The criteria reported in this document are to be intended as guidance for programs of clinical governance aimed at: supporting clinicians on the use of FDG-PET; post hoc analyses of appropriate use of FDG-PET; contributing to the planning of the regional health service.

Conclusions and results

The panel examined and assessed the role of FDG-PET for the following nine clinical indications. This included 101 studies.

Recommendations

Criteria for appropriate use of FDG-PET in head and neck cancer:

Appropriate (level of evidence: moderate)
- detection of unknown primary head and neck cancer in patients with metastatic cervical lymph nodes
- N staging of patients with head and neck cancer
- M staging and detection of synchronous second primary tumor in patients with locally advanced head and neck cancer
- diagnosis and staging of suspect distant recurrence

Inappropriate for lack of diagnostic role of FDG-PET
- diagnosis of head and neck cancer

Inappropriate (level of evidence: low)
- follow up in patients with no suspicion of recurrence

Uncertain (level of evidence: low);
- evaluation of response to chemotherapy or radiotherapy at the end of treatment

Uncertain (level of evidence: very low)
- target volume definition of curative radiation treatment

Indeterminate for lack of studies
- evaluation of early response to neo-adjuvant/induction therapy

Methods

A panel of 26 experts, comprising methodologists, nuclear physicians, radiologists, radiotherapists, surgeons, oncologists, ENT specialists, hematologists and health directors working in Health Trusts and Teaching Hospitals of Emilia-Romagna was convened to discuss and agree on the methodology for a research program aimed at defining the criteria for appropriate use of FDG-PET in oncology. For each indication a systematic review was performed. The GRADE approach was applied to assess the level of evidence of included studies. The RAND method was used to vote the appropriateness criteria.

To assign a level of appropriateness to the use of FDG-PET, the working group agreed on the following definitions:

Appropriate Clinical indications for which there is a rationale for change in management related to a patient-important clinical outcome, there is a high or moderate level of evidence for diagnostic accuracy of PET and the presumed benefit - resulting from the test results - is greater than the presumed harm.

Uncertain Clinical indications for which there is a rationale for change in management related to a patient-important clinical outcome, but there is a low or very low level of evidence for diagnostic accuracy of FDG-PET and balance between harms and benefit is unclear.

Inappropriate Clinical indications for which there is no rationale for change in management related to a patient-important clinical outcome or clinical indications for which there is a rationale for change in management related to a patient-important clinical outcome, there is a high or moderate level of evidence on poor diagnostic accuracy of FDG-PET and/or the presumed harm - resulting from the test results - is greater than the presumed benefit.

Indeterminate Clinical indications for which there is a rationale for change in management related to a patient-important clinical outcome, but there are no data on diagnostic accuracy of FDG-PET

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