The Clinical Use of PET-CT in Lower Gastrointestinal Oncology

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FDG-PET/CT is not used as routinely in lower gastrointestinal (GI) cancers as in other malignancies, possibly due to challenges that are indigenous to FDG-PET/CT but more pronounced in GI cancers: Non-specific or physiologic FDG uptake may cause false positive findings and lead to unnecessary endoscopies, e.g. glucose consuming normal bacterial flora, peristalsis, inflammatory processes, and certain medicine. On the other hand, there is a definite potential in various clinical settings of lower GI cancer, including incidental focal bowel uptake and certain aspects of gastrointestinal stromal tumor (GIST) and colorectal cancer[1-5].

So far, the most established use of FDG-PET/CT in GIST is assessment of treatment response of novel tyrosine kinases with different response mechanisms than conventional chemotherapy. A recent meta-analysis found pooled sensitivity and specificity for detecting treatment response of 90% and 62%[6].

In colorectal cancer, the overall relative 5-year survival is about 50%-60%, but it is highly dependent on stage ranging from <10% to >80%. With an increasing role for curative intervention, also for limited metastatic disease to the liver or lungs, accurate preoperative staging is of paramount importance to choose the optimal therapeutic strategy and to avoid futile operations. FDG-PET/CT has a role in clarifying equivocal lesions and to detect liver metastases, but the overall op¬timal imaging strategy remains controversial[7-9]. Less well-established indications are response evaluation, surveillance and recurrence detection which all have shown potential but also pitfalls and the optimal regimen are controversial[10].

This session addresses the current potential and challenges in the use of FDG-PET/CT in lower GI cancer.

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