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Title: Incidental uptake of FDG in the oropharynx on PET: a systematic review and meta-analysis of prevalence and risk of malignancy

Body: Background
Fluorodeoxyglucose (FDG) positron emission tomography (PET) is a commonly used investigation to diagnose and stage malignancy. A systematic review and meta-analysis was conducted to assess the prevalence of incidental FDG avidity in the oropharynx and malignancy risk.

Methods
A comprehensive literature search of PubMed, Embase and Cochrane for studies on incidental FDG avidity in the oropharynx was conducted. Studies including patients undergoing PET-CT for head and neck cancer were excluded. Meta-analysis was performed using random effects model.

Results
The initial search yielded 1362 results and ultimately five studies were included for analysis. To assess prevalence three studies were analysed and included data comprised of 25,173 FDG PET/CT scans of which 693 contained incidental avidity in the oropharynx. A high degree of heterogeneity was observed for prevalence data (I2 of 99.82%), as well as for data on malignancy risk (I2 of 95.8%). The pooled prevalence of incidental uptake in the oropharynx was 5% (range 1-10%) and the pooled prevalence of malignancy in incidental FDG avidity was 6% (range 1-23%).

Conclusions
Incidental uptake in the oropharynx on PET scan is common. There is a lack of high-quality data to inform the management of these patients.

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