

Clinical Area: PET for melanoma
Keywords: PET, melanoma secondary, neoplasm recurrence, local
Reference: Schwimmer J, Essner R, Patel A, Jahan A, Shephard JE, Park K et al. A review of the literature for whole-body FDG PET in the management of patients with melanoma. *Q J Nucl Med* 2000; 44: 153-67.

Study Type: Meta-analysis

Study Aim: To estimate the sensitivity and specificity of FDG PET for melanoma.

Outcomes

- *Primary:* sensitivity, specificity
- *Secondary:* change in patient management

Design

- *Focused on a discrete clinical question:* Yes.
- *Explicit description of literature search:* Yes.
- *State methodological standards used to select studies for inclusion in meta-analysis:* Yes, stated criteria but related to content of articles (e.g. included FDG PET imaging results) rather than methodological quality.
- *Description of study populations:* Not discussed.

Validity

- *Is the study type appropriate for the question(s) being asked?* Yes.
- *Data tested for homogeneity and analyzed appropriately?* Not tested for homogeneity but not as important because uses similar data.
- *How did the authors address possible publication bias?* Not addressed.

Conclusions regarding validity of methods:

This was primarily a literature review and the meta-analysis was marginal methodologically. It did not include standard features of meta-analyses e.g. a discussion of the quality of selected articles and publication bias. Few studies were combined in the PET meta-analysis of sensitivity and specificity.

Results

Meta-analysis of sensitivity and specificity data for whole-body FDG PET

Patient/ Lesion method	Calculation Total n (No. studies)	Sensitivity % (95% CI)	Specificity % (95% CI)
Lesions Pooled data	290 (3)	92.1 (88.4-95.8)	89.7 (83.3-96.1)
Weighted avg*	92.2		87.3
Patients Pooled data	274 (2)	77.3 (68.5-86.0)	93.5 (90.0-97.1)
Weighted avg*		78.1	93.5

* Weighted average was calculated by multiplying the sensitivity and specificity values from individual studies by their respective N values and dividing by the total N for the studies combined.

Note: Regional lymph node evaluations are not included in the above combined statistics.

Not enough studies were found to pool data regarding change in management following FDG PET for melanoma.

Authors' Conclusions

“Although the literature can be improved with regards to reporting of data, there is evidence to support the sensitivity, specificity and change in management when using FDG PET.”

Reviewer's Conclusions

The primary intention of this article was to review the available literature, not to conduct a combined quantitative analysis of sensitivity and specificity data. This was a methodologically weak meta-analysis, but is the only article to attempt to pool data from the small case series and cross-sectional studies on PET for melanoma. The meta-analysis combines studies on melanoma staging and restaging; sensitivity and specificity appear low compared to estimates in the prospective studies evaluated for this MTAC review. The authors did not comment on the level of sensitivity and specificity.