Evidence Table

Clinical Area: **FDG-PET scan for imaging of patients with a history of cervical cancer.**

Reference: **Belhocine T, Thille A, Fridman V et al. Contribution of whole-body FDG PET imaging in the management of cervical cancer. Gynecol Oncol 2002; 87: 90-97.**

Study Type: Case Series (retrospective)
Study Aim: To assess the role of PET imaging in the management of cervical cancer.

Outcomes

- *Primary*: Correlation of PET findings with diagnosis.
- *Secondary:* Change in treatment plan.

Design

- *Number of subjects:* n=60. n=22 primary cervical cancer. n=38 post-treatment (n=25 clinical suspicion of cervical cancer recurrence, n=13 routine post-treatment surveillance).
- *Description of study population:* Mean age=52 ± 14 years. Reason for PET: pre-therapeutic staging of primary disease (n=22), suspicion of recurrence (n=25), routine post-therapeutic surveillance (n=13).
- *Eligibility criteria:* Adequate PET imaging; confirmation of PET findings or follow-up for at least 12 months for negative findings.
- *Consecutive patients?* No.
- *Intervention*: All patients underwent a whole-body PET scan using a Penn Pet 240H canner (n=41) or a C-Pet scanner (n=19). A single experienced nuclear physician qualitatively evaluated the PET studies in blinded fashion Elevated FDG uptake on at least two consecutive slices was considered pathologic; unclear or equivocal foci were considered negative. Semiquantitative analysis of FDG uptake was also done. PET findings were confirmed by histology or clinical follow-up. In addition to PET, patients received conventional treatment (usual care). For the 38 post-treatment patients, this included physical examination and clinically oriented morphological imaging (chest x-rays, CT or MRI).
- *Source of outcome data*: Imaging, histological samples, medical records.
- *Length of follow-up:* Mean follow-up after PET=12 ± 7 months.

Validity

- *Was population homogenous?* No, the study included patients with initial disease and recurrent disease.
- *Potential selection biases:* Adequate PET images were required for inclusion which could have introduced bias.
- *Were intervention/ care/follow-up similar in each group?* Imaging varied.
- *Did an objective observer assess outcomes?* Yes, for PET images.
- *Completeness of follow-up:* Only mean follow-up was reported.
- **Conclusions regarding validity of methods:** The routine protocol was not consistent, which could introduce observation bias.

Results

Notes:
- The evidence table results reported for the 38 post-treatment patients only
- The authors did not stratify the results for women with and without a clinical suspicion of recurrence.

Correlation of PET findings with final diagnosis (n=38)

	TP	FP	FN	TN	Agreement
PET	25	3	0	10	0.81
Usual care	12	2	13	11	0.27

TP= true positive; FP=false-positive; FN=false-negative; TN=true negative.

25 out of the 38 post-therapy patients had confirmed recurrence.
- PET correctly all 25 of these cases. In addition, PET had 3 false-positive results.
- Usual care identified 12 out of 25 cases. The other 13 patients had equivocal or false-negative results with usual care, most commonly due to post-treatment fibrosis. Conventional care had 2 false-positive results.

10 patients had negative PET findings and 11 patients had negative findings with usual care.

The authors reported that PET findings "induced a treatment" in 24 of the 25 patients with confirmed recurrence, and that PET was "particularly contributive" to the treatment plans of the 13 patients with an equivocal or false-negative result in the routine protocol. Details of treatment plans, changes in treatment after PET and health outcomes were not provided.

Authors' Conclusions

"Whole-body FDG PET appears useful in the management of cervical cancer, in particular for staging extrapelvic metastases or optimally detecting a recurrence. MRI is better indicated for evaluating the loco-regional status of the disease."

Reviewer's Conclusions

There was a higher rate of correctly identifying recurrence with PET compared to usual care. The results section did not differentiate between diagnosis in women with and without a clinical suspicion of recurrence. A limitation of the study is that treatment in the 'usual care' group was not consistent. Given the absence of consistent alternative imaging, and the small sample size, it is difficult to draw conclusions about the diagnostic accuracy of PET for detecting cervical cancer recurrence. In addition, the authors reported insufficient information on the diagnostic impact of PET.