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THE ADDITIONAL VALUE OF 18F-FDG PET/CT IN EVALUATION OF PATIENTS WITH CHOLANGIOCARCINOMA AFTER THERAPY

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BACKGROUND-AIM

1. Evaluate the usefulness of 18F-FDG PET/CT in identification of relapse of cholangiocarcinoma after surgery.
2. Evaluate if there is a correlation between pre-therapy SUVmax and the response to therapy.
3. Evaluate the response to chemotherapy by EORTC PET/CT criteria.

METHODS

From August 2003 to March 2014, 19 pts with cholangiocarcinoma (CCC), previously treated with surgery and adjuvant chemotherapy, were studied with 18F-FDG PET/CT for suspicious of relapse before and after chemotherapy (CHT).

13 men, 6 women, were included in the current study. 6 pts with ICC (intrahepatic cholangiocarcinoma), 13 pts with ECC (extrahepatic cholangiocarcinoma: 8 distal duct bile cancer, 3 pts with Gall Bladder Cancer and 2 with Ampulla of Vater Carcinoma).

18F-FDG PET/CT during follow-up after radical surgery was performed for confirming a suspicious of relapse on ceCT or MRI. All patients with metastatic disease underwent systemic CHT and a second PET/CT was performed to evaluate the therapy response. Follow-up information was obtained for a minimum 12-24 months period subsequent to the date of PET/CT scan.

As the main criteria to reach the final diagnosis we used visual interpretation. We considered as malignant any uptake higher than background excluding any physiological uptake/obvious inflammatory findings. The maximum Standardized Uptake Values was measured for all lesions. PET/CT true positive findings lasting more than 12 months and/or repeated. PET/CT and ceCT revealing the appearance of further metastatic lesions or the disappearance of metastatic lesions following therapies.

PET/CT assessment after chemotherapy has been performed 1-to 6-months. Response evaluation with PET/CT was performed according to EORTC criteria and classified patients into 4 response categories: complete metabolic response (CR), partial metabolic response (PR), stable metabolic disease (SD) and progressive disease (PD).

RESULTS

The role of 18F-FDG PET/CT:

- in detecting T (intrahepatic disease): 12/19 pts resulted positive on PET/CT and 7/19 pts resulted negative on PET/CT. All PET positive lesions were confirmed to be positive on follow up. No false negative (FN) findings after final diagnosis were found.

- in detecting N (lymph node metastases): 8/19 pts resulted positive on PET/CT and 9/19 pts resulted negative on PET/CT. Two FN findings were detected in hepato-duodenal ligament in patients with ECC.

- in detecting M (distant metastasis): 4/19 pts resulted positive on PET/CT and 13/19 pts resulted negative on PET/CT. Two FN findings were detected in lungs.

The pre-therapy SUVmax value wasn't found to correlate with therapy response ($p < 0.14$). As a consequence of small number of patients and limited follow up it's not possible to correlate SUVmax with overall survival.

After therapy CR was obtained in 4/19 pts; PR 5/19 pts, PD in 7/19 pts, SD in 3/19 pts.

CONCLUSION

This method has a better accuracy in patient with ICC than in patient with ECC. 18F-FDG PET/CT was optimal in the assessment of T status, sub-optimal in the evaluation of N and M status. We haven't found any correlation between pre-therapy SUVmax and therapy response.