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18F-CHOLINE (FCH) PET/CT FOR STRATIFYING PROSTATE CANCER PATIENTS WITH BIOCHEMICAL RELAPSE

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BACKGROUND-AIM

The aim of this study was to evaluate the role of 18F-choline (FCH) PET/CT in the management of patients who comply with prostate cancer relapse after definitive local salvage therapy, such as radical prostatectomy (RP) and/or radiotherapy (RTx). Further local treatment is not envisageable for these patients and androgen deprivation therapy (ADT) remains the only option. However, not all the patients who show biochemical recurrence are allotted to develop recurrence and/or relapse in the meantime. (FCH) PET/CT may help to stratify patients who necessitate ADT from those who do not in order to avoid or delay undue toxicity or hormon-resistance.

METHODS

138 prostate cancer patients (mean age 70,8±8) complying with biochemical relapse (incremental value of PSA) after RP and/or RTx underwent (FCH) PET/CT before starting hormone therapy. Acquisitions were performed using both early pelvic scan and conventional whole-body scan at 1 minute and 90 minutes after the injection, respectively (259–370 MBq; 3-4 MBq/Kg). FCH PET/CT was considered positive according to the presence of residual significant uptake in prostate lodge and/or locoregional lymphnodes and/or distance metastases. The Doubling Time (DT), as per PSA values doubling within six months, was retrospectively computed and patients stratified in two groups (DT+ and DT-). The patients were followed up 12 months thereafter (range 6-20 months).

RESULTS

55 patients were treated by RP, 57 received RP plus RTx and 26 prostate RTx alone. Gleason score was 6,8±1 and mean PSA values 3,8±10. 86 patients were classified as DT+, among them 57 (66%) showed positive FCH PET/CT (FCH+) and received further therapy (hormone or Rtx), whereas 29 (34%) exhibited negative FCH PET/CT (FCH-). In this latter sub-group 20 (69%) patients did not receive adjunctive therapy, thereafter, according to both FCH results and PSA stability adhering to a wait and watch approach. On the other hand, 9(31%) underwent hormone or RTx therapy in reason of PSA increase (they also shown additional FCH+). 52 patients had a DT-, among them 15 (29%) were FCH+ and consequently received rescue therapy, whereas 37 (71%) were FCH-.

CONCLUSION

Patients with negative FCH PET/CT and positive DT after RP and/or pelvic RTx may be considered for watchful waiting irrespective of the biochemical relapse and hormone therapy deferred at least in order to avoid or delay associated toxicities. Conversely, for patients with DT- but FCH + the hormone therapy should be warranted. FCH PET/CT is crucial to both stratify patients who need hormone therapy and timing for it.