


Abstract

BACKGROUND: The purpose of our study was to analyze the role of [11C]choline-positron emission tomography/computed tomography (cho-PET/CT) in the management of patients with prostate cancer referred for radiotherapy.

PATIENTS AND METHODS: Inclusion criteria for this retrospective study were (1) presence of prostate cancer, (2) referral for first radiotherapy course (for primary or recurrent tumor) between February 2007 and July 2010, and (3) performance of cho-PET/CT. All cho-PET/CT scans were classified according to whether they were positive in the prostate/prostate bed (T), pelvic lymph nodes (N), and distant metastases (M) or negative. Therapeutic strategy based on the cho-PET/CT evaluation was compared with the strategy that would have been proposed had cho-PET/CT imaging not been available, following international and national prostate cancer guidelines.

RESULTS: Eighty-two cho-PET/CT scans performed in 74 patients were analyzed. Cho-PET/CT was positive in 49 studies (60%): T only in 22 (45% of all positive studies); N only in 4 (8%); T in combination with N in 3 (6%); and M in combination with T or N, or both, in 16 (33%). Treatment after positive cho-PET/CT examination included radiotherapy ± androgen deprivation (29 patients), surgery ± radiotherapy (6 patients), androgen deprivation only (8 patients), and other treatment (6 patients). In 22 cases, cho-PET/CT (27%) altered the treatment approach compared with the treatment that would have been adopted in the absence of cho-PET/CT analysis.

CONCLUSION: Cho-PET/CT is valuable in defining the extent of disease and supporting therapeutic decisions in the management of prostate cancer. The therapeutic strategy turned out to be influenced by cho-PET/CT imaging in about one third of the patients included in this study.

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KEYWORDS: Choline PET, Prostate cancer, Radiotherapy, Recurrent tumor

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