Abstract

Prostate cancer (PCA) is the second most common tumour in men worldwide. Whereas prostate specific antigen (PSA) is an established biochemical marker, the optimal imaging method for all clinical scenarios has not yet been found. With the rising number of PET centres there is an increasing availability and use of (18)F-/(11)C-choline or (11)C-acetate for staging of PCA. However, to date no final conclusion has been reached as to whether acetate or choline tracers should be preferred. In this review we provide an overview of the performance of choline and acetate PET for staging the primary and recurrent disease and lymph nodes in PCA, based on the literature of the last 10 years. Although predominantly choline has been used rather than acetate, both tracers performed in a similar manner in published studies. Choline as well as acetate have insufficient diagnostic accuracy for the staging of the primary tumour, due to a minimum detectable tumour size of 5 mm and inability to differentiate PCA from benign prostate hyperplasia, chronic prostatitis and high-grade intraepithelial neoplasia. Regarding lymph node staging, choline tracers have demonstrated a high specificity. Unfortunately, the sensitivity is only moderate. For staging recurrent disease, sensitivity depends on the level of serum PSA (PSA should be >2 ng/ml). This applies to both choline and acetate. However, despite these limitations, a significant number of patients with recurrent disease can benefit from PET imaging by a change in treatment planning.

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