Positron emission tomography with ^{18}fluorine-labelled deoxyglucose: utility in localiced and advanced prostate cancer

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Objective: To determine the role of the positron emission tomography (PET) with ^{18}F-labelled deoxyglucose in the identification of prostatic cancer in the iliac and obturator lymphatic nodes before radical prostatectomy, and in the localization of relapse in patients in biochemical progression.
Patients and methods: Twenty-one patients were divided into two groups. Group A consisted of 11 men diagnosed with organ-confined prostate cancer, where attention was focused on the iliac and obturator lymphatic nodes, the results being compared with the pathological anatomy obtained from surgical procedures. Group B included 10 patients treated by radical prostatectomy, radiotherapy or orchidectomy and who were in biochemical progression, in whom the aim was to identify recurrence of the disease.
Results: In none of the 11 patients of group A who had undergone radical prostatectomy were deposits of radiotracer identified in the area of the iliac and obturator nodes which would indicate node metastases. However, the histopathological analysis of these nodes showed tumour in three patients. In group B the PET scans showed recurrence of prostate cancer (by deposits of radiotracer) more clearly than did computed tomography (CT) in two patients (both with recurrence in soft tissue). In one patient bone scintigraphy identified a lesion compatible with prostatic disease in the bone: this was clinically confirmed but was not identified by PET.
Conclusion: PET, using deoxyglucose labelled with ^{18}F. Cannot reliably identify prostatic adernocarcinoma in the iliac and obturator lymph nodes before surgery: other tracers may give better results. To locate relapses in patients with biochemical progression, PET seems to have better sensitivity than CT when identifying diseases in soft tissues and is possibly inferior to bone scintigraphy in detecting bony metastases.

Key Words: Positron emission tomography, prostate cancer, ^{18}F-deoxyglucose, progression, prognosis

Utility of immunophenotypic and immunogenotypic analysis in the study of necrotic lymph nodes

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We report a case of complete lymph node necrosis. No specific aetiology could be determined by morphology, but a B lymphoid population and clonal rearrangement of the immunoglobulin heavy chain gene were demonstrated in immunophenotypic and immunogenotypic studies performed using DNA extracted from paraffin embedded necrotic tissue. In the setting of lymph node necrosis, we suggest that immunohistochemical and gene rearrangement studies may provide additional diagnostic information.

In situ localization of anion exchanger-2 in the human kidney

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Abstract: Na+-independent anion exchangers (AE) are a family of membrane carriers that mediate the electroneutral exchange of C1- for HCO3-ions across plasma membranes. They are involved in intracellular pH and cell volume regulation as well as in transepithelial acid-base transport. While anion exchanger-1 (AE1) has been localized previously in the human kidney, thus far there has been no definite report on anion exchanger-2 (AE2) in this human tissue. Accordingly, immunohistochemistry was carried out on surgical specimens of the human kidney (fixed in formalin and embedded in paraffin), using a specific AE2 monoclonal antibody. Strong immunostaining was observed at the basolateral membrane of cells of thick ascending limbs and distal convoluted tubules, colocalizing with the basal membranous labyrinth of cellular interdigitations, typical of these segments. In fact, AE2 staining was attenuated at the macula densa, where basal infoldings are scarce. Additionally, in situ hybridization experiments on formalin-fixed tissue demonstrated the presence of AE2 mRNA in the same segments of the distal nephron. On the other hand, control immunohistochemistry with a monocloal antibody against AE1 gave the expected immunoreactivity at the basal pole of the type A intercalated cells of connecting.