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Tytuł pracy: Can PSA level and its change in time predict localization of prostate cancer relapse, assessed by PET-CT with 18F-choline?
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Abstrakt:
Introduction
Patients with prostate cancer after treatment are routinely monitored by Prostate-Specific Antigen
(PSA) level evaluation and occasionally referred to Positron Emission Tomography (PET-CT) for
verification and assessment of relapse and/or metastases. The aim of our study was to evaluate
the value of measurements of PSA level and its changes by quantitative PET parameter Standardized Uptake Values (SUV) in patients with recurrent prostate cancer.
Material and Methods
We retrospectively collected PET-CT, performed using Discovery IQ scanner (GE Healthcare), 3
and 20 min after injection of 18F-choline (3 MBq/kg). Biopsy-proven prostate cancer patients
undergoing a PET-CT scan due to the suspicion of recurrence after treatment were enrolled into
the study and a subgroup of subjects with recurrent disease, confirmed by positive PET-CT were
analyzed. Plasma levels of PSA at the time of PET-CT and PSA level change per month (ΔPSA)
prior to the scan were analyzed, together with SUVmax. Results are shown as median values and
interquartile range.
Results and Discussions
The study cohort included three subgroups, diagnosed by visual PET-CT evaluation: 27 patients
with only local cancer recurrence (R), 110 with distant metastases (M) and 35 subjects with both
local recurrence and metastases (R+M). PSA levels at the time of PET-CT were similar in R and
M groups: 5,00 (2,98-10,30) ng/ml and 3,90 (1,27-14,08) ng/ml, but significantly (p<0,05) lower
than in R+M group: 12,43(6,08-49,36)ng/ml. ΔPSA was similar in R and M groups: 0,63(0,09-
1,00) ng/ml/month and 0,33(0,02-1,73) ng/ml/month, but lower than in R+M: 2,21(0,22-10,34)
ng/ml/month, p<0,05. SUVmax was significantly (p<0,05) lower in R subjects than in

both M and R+M groups: 3,00(2,30-4,00); 4,60(2,70-7,40) and 4,90(3,80-8,00), respectively.

Conclusion

PSA levels and PSA changes in time are higher in patients with simultaneous local recurrence and metastatic spread than in patients with either isolated local recurrence or distant metastases.

Local recurrence presents with lower values of SUVmax than metastases.