SPECT/CT Characterization of Equivocal Osseous Lesions Detected on Tc-99m-MDP Planar Bone Scintigraphy

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Abstract:

Aim: To compare diagnostic performance of SPECT/CT versus planar imaging in characterization of equivocal osseous lesions in cancer patients detected on bone scintigraphy. Materials & Methods: This prospective study recruited patients known to have primary tumor referred for bone scintigraphy with their planar images showing solitary or few equivocal osseous lesions. Every patient underwent planar whole body scan followed by SPECT/CT for the concerned region(s). The gold standard was based on clinical/imaging follow-up for at least 6-12 months. The findings from both modalities were compared for diagnostic performance indices. Results: A total of 150 patients were included in this study (110 females, 40 males) with median age 54 years (range: 7-84). The sensitivity, specificity and accuracy for planar scintigraphy versus SPECT/CT were (72% vs. 85%, 61% vs. 83% & 66% vs. 84%); respectively. The differences in sensitivity & specificity were statistically significant (P = 0.04 & 0.001); respectively. Conclusion: SPECT/CT significantly improved the diagnostic performance of planar bone scintigraphy in characterization of equivocal osseous lesions.

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