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Letter to Editor

Prostate-specific antigen for prediction of skeletal metastases on bone scintigraphy in prostate cancer

Dear Editor,

We read with great interest the article by Manohar *et al*.[1] in the July–September 2020 edition of the journal. They conducted a retrospective analysis of medical records on 307 prostate cancer patients referred for ^{99m}Tc methylene diphosphonate (^{99m}Tc MDP) bone scintigraphy in a nuclear medicine department in India and used receiver operator curve analysis to determine the optimal prostate-specific antigen (PSA) cutoff values for predicting skeletal metastases. The authors reported that the optimal cutoff value of serum PSA in the prediction of positive bone scan for skeletal metastases was 29.16 ng/ml, with a sensitivity and specificity of 89.0% and 74.6%, respectively. They reviewed similar studies on the subject from different settings which showed that the PSA cutoff for bone scintigraphy ranged from 10 to >30 ng/ml.[1]

In resource-limited settings where the practice of nuclear medicine remains challenging due to numerous factors including limited facilities and erratic radiopharmaceutical supply,[2] there continues to be a need to identify the predictive factors that will aid the optimal use of nuclear medicine facilities and resources as this will facilitate patient management and improve clinician satisfaction with the services provided by the nuclear medicine. Our group in 2019 published the results of a retrospective study on PSA and the risk of bone metastases in West Africans with prostate cancer in which 96 (26.5%) out of 363 study patients had skeletal metastases on ^{99m}Tc MDP bone scan.[3] In our study, a PSA cutoff value of ≥20 predicted the presence of skeletal metastases with a sensitivity and specificity of 86.5% and 41.2%, respectively. Although a cutoff value of ≥30 predicted the presence of metastases with a lower sensitivity of 72.9%, the specificity was higher at 56.2%, and 60% of cases were correctly classified. Similar to the current study by Manohar *et al*.[1] which reported an accuracy of 87%, we found that PSA had an accuracy of 72% in the prediction of skeletal metastases on bone scan.

Ritenour *et al*.[4] in their study fixed the cutoff point for serum PSA for which bone scans must be acquired at >30 ng/ml, a finding which further supports the 29.16 ng/ml cutoff proposed by Manohar *et al*.[1] The serum PSA cutoff values in the West African population we studied were not so different from that of the Indian population.[1,5] We like Ritenour *et al*.[4] showed that Gleason score ≥8 had an increased specificity for the detection of bone metastases in prostate cancer. We were able to show in our study that both serum PSA and Gleason score were able to predict the presence of metastases with reasonable accuracy at 72% and 68%, respectively.[3]

We agree with Manohar *et al*.[1] that serum PSA is an independent predictor of bone metastases in patients with prostate cancer. Bone scintigraphy may not be useful as a routine staging investigation, especially in asymptomatic low-to-intermediate risk patients with prostate cancer in resource-limited settings.

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Conflicts of interest

There are no conflicts of interest.

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