Abstract

OBJECTIVES: The aim of this study is to modify and validate a novel screening tool to determine the necessity of bone scans in Chinese PCa patients at the time of diagnosis.

METHODS: Five-hundred-and-one patients diagnosed with PCa between 2010 and 2013 at Zhongshan Hospital, Fudan University, were included in the study. All received bone scans using technetium 99m methylene diphosphonate (99mTc-MDP) at the initial staging. Age, prostate-specific antigen (PSA) and alkaline phosphatase (ALP) at diagnosis, disease stage, and biopsy Gleason score were collected from all patients. Multivariate logistic regression analysis and discrimination analysis were performed. A validation analysis of this screening tool was performed by Shanghai Cancer Center, Fudan University.

RESULTS: Among the 501 patients, 84 (16.7%) of them had BM. The area under the ROC curve was 0.9006 (95% CI, 0.87-0.93). The sensitivity of the cut-off point was 94.1%, and the specificity was 58.3%. The validation analysis demonstrated an area under the ROC curve of 0.846 (95% CI, 0.805-0.887).

CONCLUSIONS: Study results demonstrated that a baseline bone scan can be safely omitted for cT1-T3 PCa patients who have a PSA ≤39 ng/ml and an ALP ≤88 IU/l. This novel screening tool may help determine the necessity of including a bone scan at the time of initial diagnosis of PCa. © 2015 S. Karger AG, Basel.

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