Letter to the Editor


We thank Kim et al for showing interest in our systematic review and meta-analysis [1]. Several of the concerns raised in their letter are important regarding the application of our results.

First, our results should be interpreted with caution, as the studies included were not free of bias. As Kim et al mention, most were retrospective observational studies and the reference standard was “best value comparator”, which cannot be considered robust for determining bone metastasis, therefore rendering potential for bias. Although our study question was not to “compare” the performance of magnetic resonance imaging (MRI) and bone scintigraphy, had there been randomized controlled trials comparing the two modalities, we could have included them in our meta-analysis and provided more firm conclusions. Furthermore, since comparison between the two modalities was not the purpose of our meta-analysis, we did not consider using statistical methods such as conditional sensitivity and specificity.

Second, clarification regarding interpretation of MRI and the reference standard was requested. (1) The interval between MRI and the reference standard was not reported in most studies. This could be a limitation, as a very long interval may result in bone metastasis that was not present when performing MRI (ie, false negative). (2) The radiologists’ interpretation of MRI was blinded to clinicopathological information, as described in our meta-analysis. (3) The best value comparator included MRI in some of the studies included, meaning that derivation of the reference standard was not always blinded to the index test.

Third, the patients included were heterogeneous, comprising both newly diagnosed and previously treated prostate cancer patients. Owing to significant clinical differences, pooling results from both populations may not be an adequate approach. However, it was not feasible to focus separately on each as there were only ten studies included. Therefore, we performed a sensitivity analysis for each subgroup after providing the pooled results for the whole population.

Fourth, we only assessed the per-patient performance because of the paucity of studies providing per-lesion results. Per-patient analysis could be expected to result in better diagnostic performance than per-lesion analysis, as shown in one of the studies included, in which the per-patient sensitivity was 1.0, compared to 0.56 for per-lesion analysis [2]. However, in a recent meta-analysis assessing the performance of MRI for detection of vertebral metastasis from various tumors, the sensitivity and specificity of per-patient (94.1% and 94.2%, respectively) and per-lesion analysis (90.1% and 96.9%, respectively) were both excellent [3]. Further studies are required to resolve this controversy.

Fifth, Kim et al stated that prostate-specific antigen and Gleason score play an important role in clinical staging for prostate cancer. We agree and do not suggest that MRI replaces these parameters. Rather, MRI should be comprehensively used with them. In fact, a recent study showed that when MRI is incorporated in Partin estimates and CAPRA scores, the performance of clinical staging can be significantly improved [4].

Conflicts of interest: The authors have nothing to disclose.

References

Sungmin Woo*, Chong Hyun Suhb,c Sang Youn Kim**

*Department of Radiology, Seoul National University College of Medicine, Seoul, Korea

bDepartment of Radiology and Research Institute of Radiology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

cDepartment of Radiology, Namwon Medical Center, Jeollabuk-do, Korea

*Corresponding author. Department of Radiology, Seoul National University Hospital, 101 Daehak-ro Jongno-gu, Seoul 110-744, Korea. Tel. +82 2 20722584.
E-mail address: iwishluv@empas.com (S.Y. Kim).

June 16, 2017