

## Peer Review File

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Comment 1: Research on the bone microenvironment and its role in metastasis suggests a complex role in tumor growth. What role do auxiliary bone-targeted drugs play in preventing metastasis and avoiding bone loss caused by cancer treatment?

Reply 1: Thanks for the suggestion. Bone-targeted drugs in preventing metastasis was discussed by the expert's committee, consensus has been reached that this part should not be presents in the manuscript due to the inconsistent results of studies. Bone-targeted drugs in avoiding CTIBL has been presented in 5.7 part.

Comment 2: How should the treatment be given to women who have only abnormal bone scans but no bone destruction due to imaging examinations or local pain?

Reply 2: Experts have reached consensus that women with only abnormal bone scans are not recommended with BTA treatment because of the high false positive rate of bone scan.

Comment 3: Regarding local events in breast cancer research, how to define and reach consensus on the second primary breast cancer, regional and remote events?

Reply 3: Experts discussion was more focused on the bone metastasis lesion of breast cancer. Second primary breast cancer, regional and remote events were not discussed in experts meeting.

Comment 4: For patients with bone metastases, what methods should be adopted for pain management and the social, psychological and spiritual aspects of nursing?

Reply 4: Thanks for the suggestion. The current experts committee does not involve experts in psychology or nursing. We hope to have other experts to comment on this point to form another contribution.

Comment 5: How to further study the effect of bone targeted therapy on the interaction between

tumor and immune cells in the bone microenvironment?

Reply 5: Thanks for the suggestion. Current studies have indicated that RANKL pathway may function through the occurrence and progression of breast cancer bone metastasis, RANKL inhibition could improve the effects of immune-checkpoint inhibition. This part will be present in the expert's comments.

Comment 6: How to determine the best endpoints and new efficacy measures for future clinical trials?

Reply 6: The endpoint SREs is widely accepted for evaluation of BTA efficacy. Surrogate endpoint like percent decrease of uNTX may have relevance to reduced risk of SREs, but further clinical evidence is still needed. Expert consensus does not recommend the routine use in clinical practice.

Comment 7: How to change the clinical status of breast cancer bone metastasis in my country?

Reply 7: Experts committee have thorough discussion on this point, Practical concerns of medical education in primary medical institutions may not suitable for the present consensus paper.

Comment 8: What is the status of imaging in the diagnosis and efficacy evaluation of breast cancer bone metastases? The role and prospect of bone metabolism markers in the prediction and efficacy evaluation of bone metastasis should be added.

Reply 8: Thanks for the suggestion. The status of imaging in the diagnosis of breast cancer bone metastases are presented in the manuscript. Consensus was not reached over the value of imaging in efficacy evaluation. The role and prospect of bone metabolism markers will be discussed in the expert's comments.