Annals of Oncology

abstracts

119P Role of immune checkpoint inhibitors in bone sarcomas and future aspects

A.N. Mishra¹, S. Medhashri², Y. Mishra³

¹Orthopaedics, Indian Spinal Injuries Centre, New Delhi, India, ²Clinical Research, Burkatullah University, Gurgaon, India, ³PCMS, Bhopal, India

Background: The most common subtypes of bone sarcomas are osteosarcoma and Ewing sarcoma. They are rare and heterogeneous form of cancers of mainly mesenchymal origin. Neo-adjuvant chemotherapy followed by wide surgical resection followed by adjuvant chemotherapy and radiotherapy are the main treatment options for these tumors. But despite all measures, mortality rates have not come down in last few decades. Immunotherapies with various vaccines and cytokines had limited success in clinical trials. This has led to the need of novel therapies like PD-L1 immune checkpoint inhibitors for the treatment of bone and soft tissue sarcomas, which have shown promising results in other malignancies like metastatic melanoma, renal cell carcinoma, lung cancer, and breast cancer.

Methods: PubMed was searched to identify relevant clinical studies of PD-1/PD-L1targeted therapies in soft tissue and bone sarcomas. A review of data from the current trials on clinicaltrial.gov was incorporated, as well as data presented in abstracts in annual meetings of American Society of Clinical Oncology and European Society for Medical Oncology were included in the study and analysed.

Results: 23.7% of osteosarcomas demonstrate high expression and 50% show intermediate expression of PD-L1 at tissue level which is clinically significant, as it correlates with tumor-infiltrating lymphocytes (TILs), which often mark metastasis and poorer outcomes. Other studies and clinical trials support these findings. In a systematic metaanalysis of 11 studies with 661 total patients, osteosarcoma had 14–75% higher PD-L1 expression in tumor tissues and significantly correlated with high mortality rate, metastasis and poor overall survival. Other studies have also shown higher PD-L1 expression in metastatic tumor tissues, especially within the lung, compared to primary tumor tissues.

Conclusions: Immune checkpoint blockade therapy has demonstrated remarkable clinical results in other malignancies but they have yet to show positive results in bone and soft tissue sarcomas. Though early clinical trials have shown promising results in using anti-PD-1/PD-L1 therapy either alone or with other treatment options, continuous clinical trials and studies with long term results are necessary to have conclusive results.

Legal entity responsible for the study: Barkatullah University.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.