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Review Article

Cancer Bone Metastasis, Circulation Biomarker Profiling

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Abstract

Cancer bone metastasis was common features for cancer patients. It is very painful for patients and therapeutic resistance in the clinic. Drug treatment needs to improve for both growth inhibition and symptom management. To promote therapeutic paradigms, clinical drug treatment should be personalized by different platforms and paradigms. This editorial discusses bone cancer metastasis treatment in personalized medicine.

Keywords: *Bone Cancer; Neoplasm Metastasis; Drug Treatment; Clinical Trial*

Introduction

Cancer is the secondary leading mortality for all diseases worldwide [1-4]. 70 - 90% cancer death is caused by neoplasm metastasis. Cancer bone metastasis is one of frequent cancer metastasis events in the clinic [5-9]. Drug treatment needs to improve for both growth inhibition and symptom management to avoid this devastating incidence and human mortality, drug treatment study should be specified. This editorial discusses the landscape of drug treatment in the clinic.

Clinical dilemma

There are a lot of different anticancer drugs in the clinic. How to determine drug responses in individual patients is challenging [10-18].

Experimental Study

Vast tumor models and technology *in vivo* and *in vitro*

Drug evaluation for neoplasm metastasis progressed a lot [10,11]. There are a lot of different tumor models *in vitro* [12-19] and *in vivo* [20-26]. There has been evolving in technology of miniature and in living animals [26-28]. Thus, treatment progress has been made. Yet, there is little progress in clinical trials. Several reasons are attributed.

Clinical utility

Clinical treatment evaluation is very different from experimental study. In experimental study, we can receive data of drug responses from animal at any times and any organs.

However, these processes are not allowed at clinical evaluation. Biopsy is the common procedure for pathological and diagnostic evaluation in the past. This procedure is relative difficult to perform in bone metastases evaluation. Facing with this dilemma, blood circulatory tumors or their biomarkers are new hopes for therapeutic selection and successes [26-28]. They can be determined for herbal medicines or other types of clinical cancer treatment [29-31]. This diagnostic new trend is useful for further treatment updating.

Personalized medicine

In the future, by utility of circulatory biomarkers, personalized medicine for bone metastasis can be practiced. Personalized medicine is a useful drug selection paradigm that may optimize drug treatment [32-37]. This is a new trend for clinical cancer trials. This emerging medical system is progressing rapidly.

Drug combination commonly promotes clinical outcomes yet mechanisms are obscure. In the past decade, several pathways and mechanisms are proposed [37-39]. Large volume of such research may be followed in upcoming decades. Including many pharmaceutical progresses [40], clinical cancer treatment will be disciplinary changes.

Conclusion

Experimental and clinical study of cancer bone metastasis should be emphasized for patient's survival benefiting. New knowledge should be received and utilized, like circulatory tumor cells or biomarker diagnostics and drug sensitivity testing. Many new discoveries could be obtained by these experimental and clinical investigations.

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