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Editorial

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Bone Metastasis and Circulation Biomarkers Profiling Towards Personalized Cancer Medicine

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Cancer is the secondary leading cause of human mortality for all diseases worldwide [1,2]. Furthermore, 70-90% cancer death is caused by neoplasm metastasis. Cancer bone metastasis is one of the highest frequent cancer metastasis events for human deaths worldwide [3-5]. To avoid this devastating incidence of human mortality, drug treatment study should be specified. There are a lot of different anticancer drugs in the clinic. There are approximately 200 anticancer drugs licensed worldwide. However, no anticancer drug is suitable for all patients (one-fit-all). Most anticancer drugs have great undesired side effects and drug resistance. If a cancer tissue is not well diagnosed by proper ways, best suitable anticancer drugs may not be selected for specific patients. This is very harmful. How to determine drug responses in individual patients is challenging [6,7].

Clinical cancer treatment evaluation is very different from experimental study. In experimental study, we can receive data of drug responses from animals at any times and any organs. However, these processes are not allowed at clinical evaluation. Surgical or biopsy of tumor samples is the common procedure for pathological and diagnostic evaluation in the past. This procedure is relatively difficult to perform in bone metastases evaluation. Facing with this dilemma of easy tumor sample acquiring, blood circulatory tumors or their biomarkers are new hopes for therapeutic selection and successes more recently [8,9]. Blood cancer biomarkers can provide the information of oncology property and drug response prediction in personalized medicine. They are much easier to be detected than tumor surgical samples or biopsy in the clinic. This diagnostic new trend is useful for further treatment updating. It is a promising pathway for treating patients with bone metastasis.

Cancer is different diseases with same pathogenesis of unlimited growth, survival and metastasis. Thus, cancer should be treatment variability from patient to patient. Personalized medicine is a useful drug selection

paradigm that may optimize drug treatment [6,7]. This includes for testing drug sensitivity, biomarkers or pharmacogenomics [10-13].

Experimental and clinical study of bone metastasis treatment should be transformed into personalized medicine. New knowledge should be accumulated and utilized, like circulatory tumor detecting, biomarker diagnostics and drug sensitivity testing. They can improve drug response by finding tumor biomarkers and targeting them with relevant drugs. Many new discoveries, techniques and drug delivery could be vehicles to achieve personalized treatment via clinical investigations and applications [14].

Conflict of Interest

Declaration of conflict of interest.

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