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Tailored Therapy on the Basis of Screening for Therapeutic Targets for Advanced Solid Sarcoma

Patients

Jun-qiang Yin, Jian Tu, Jin Wang, Jing-nan Shen*

Bone and Soft Tissue Tumor Center, First Affiliated Hospital of Sun Yat-Sen University, Guangzhou, China

*To whom correspondence should be addressed. Dr. Jing-nan Shen, Bone and Soft Tissue Tumor Center, First Affiliated Hospital of Sun Yat-Sen University, Guangzhou 510080, China; Tel.: +86 20 87335039; Fax: +86 20 87332150;

Email: shenjn01@hotmail.com

E-mail address of each co-author:

Junqiang Yin: yinjunqiang77@163.com

Jian Tu: jiantu@foxmail.com

Jingnan Shen: shenjn01@hotmail.com

Background: Although the great progress of treatment for solid sarcomas had been achieved during the recent years, there are still some patients suffering from metastasis and recurrence. The introduction of target therapy had revealed survival benefit for patients with many other cancers. However, it is still unclear how to choose patients with advanced solid sarcomas for target therapy.

Purposes: We aimed to investigate a “bed to bench” method to guide target therapy for patients with advanced solid sarcoma.

Patients and Methods: Patients with solid sarcoma insensitive to neo-adjuvant chemotherapy, such as increasing tumor volume or metastasis sites, were selected to this study. Liquid chip method was performed on the fresh tumor and serum samples to assess the potential targets for tailored therapy. The chosen of targeted drugs and chemotherapy agents were based on the screening targets and patients’ situations. The survival outcomes were evaluated by the Kaplan-Meier method of SPSS.

Result: A total of 9 patients were prospectively detected and analyzed. The liquid chip method demonstrated that PDGFR β or VEGFR1/2/3 were over-expression in 5 of 9 patients. Additionally, VEGFR2 was obviously over-expression in all of these 5 patients. Combined with patients’ situations, 4 patients were advised to take sorafenib, which has a strong inhibition effect on VEGFR2. Two of these 4

patients interrupted the administration of sorafenib within three months, because severe diarrhea and rash. However, they got stable diseases during the target therapy. The other 2 got complete response during following therapy. The first patient, a 65-yr man, was diagnosed as osteosarcoma with multiple lung metastases. He was advised to take sorafenib without other chemotherapy, and had a progress free survival (PFS) of 12 months during 16-months therapy period until now. It was shown that the metastasis lesions in the left lung shrunk obviously in the X-ray scan of lungs. The metastasis lesions in the right lung started to enlarge during the last 4 months (Figure 1). But, he is still alive without any symptoms. The other patient, a 40-yr man, was diagnosed as relapsed and metastasis synovial sarcoma. He had a PFS of 12 months after taking sorafenib in combination with chemotherapy containing doxorubicin, vincristine and ifosfamide.

Conclusion: The “bed to bench” method to guide individual target therapy for patients with advanced solid sarcoma is feasible, and need further study. Sorafenib is safe and effective for selected advanced solid sarcoma patients.

