Current Biomarker Findings

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EDITORIAL

Editorial

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With the completion of the human genome project and the explosion of knowledge derived from genomics, proteomics, metabolomics, and other-omics, there are a vast and ever increasing number of potential druggable targets and therapeutic candidates. Each of these targets can be considered a potential biomarker that serves as a risk assessment tool and/or a biological predictor of prognosis and treatment outcome. For example, the risk of developing breast cancer in a woman who has inherited a deleterious breast cancer antigen (BRCA)1 mutation is five times that of a woman in the general population.[1] When cells are damaged by chemotherapy, DNA damages are often repaired by the BRCA pathway. In cells that are deficient in BRCA functionality, an alternative pathway such as the base excision repair pathway is utilized. This pathway is dependent on poly (ADP-ribose) polymerase (PARP) being fully functional.[2] Therefore, BRCA1-deficient cancer cells are exquisitely sensitive to the combination of PARP inhibitor and chemotherapy.[3,4] In this case, BRCA1 serves as a biomarker for both risk of developing breast cancer and favorable outcome to certain treatments.

The escalating number of druggable targets demands a sensible approach to the selection of therapeutic candidates for development and evaluation. Biomarkers can provide preliminary assessment of a novel agent's potential efficacy and safety to form a basis for moving (or not) the agent into a large Phase III clinical trial. This strategy also serves as an engine to move forward the field of personalized medicine. We now can molecularly select appropriate patients for certain clinical trials or certain therapies to enhance their chance of having a beneficial outcome. A couple of examples include the high clinical responses observed with the use of BRAF inhibitors in melanoma patients whose tumors harbored the BRAF mutation V600E[5] or with anaplastic lymphoma kinase (ALK) inhibitors in lung cancer patients whose tumors were positive for ALK.[6]

Biomarkers are not only important and relevant in oncology, but also in every other facet of biomedical research and treatments. Besides traditional biomarkers such as viral loads and CD4+ cell count, recent studies showed that CD163+/CD16+ monocyte subset could be a biomarker for disease progression in HIV (human immunodeficiency virus).[7] For heart disease, the cardiac troponins and natriuretic peptides have long served as biomarkers for acute coronary syndromes and heart failure. Other potential biomarkers for heart failure include chromogranin A, galectin-3, and osteoprotegerin.[8] The field of biomarkers is ever expanding. Not only are there vast genomic biomarker candidates, there are also multiple potential biomarkers derived from our understanding in proteomics, metabolomics, lipidomics, or new imaging techniques.

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To quickly disseminate information and facilitate the exchange of ideas, particularly the translational aspect of biomarker research, among basic and translational as well as clinical investigators, Dove Medical Press has launched a new journal, *Current Biomarker Findings*. In the first issue of the journal, we invite authors to submit articles on all aspects of biomarker research, whether in basic, translational, or clinical areas. As an international and open access journal, your article will be available to a broad audience all over the world. The journal serves as a practical and compelling platform to quickly disseminate and share your research findings or clinical observations, and we are certain that you will find *Current Biomarker Findings* a valuable venue for your publication need. The journal welcomes submission of original research, commentary, reviews, editorials, and expert opinion. We will also consider case reports or case series that provide new insight into the translational aspect of biomarkers and clinical outcome. Our editorial board represents experts from all aspects of biomedical research. We are confident that you will find our turn-around time rapid and our peer reviewers' comments useful and constructive. *Current Biomarker Findings* will be submitted to PubMed Central as soon as it has met the criteria. All of our older journals are indexed on PubMed Central, so we expect *Current Biomarker Findings* to be accepted once the application has been submitted.

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