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A Short Commentary on Biomarkers and Types

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DESCRIPTION

A biomarker, also known as a biological marker, is a "cellular, biochemical, or molecular change in molecules, tissues, or fluids which can be measured to indicate regular biochemical mechanisms, clinical, or pharmacologically how it reacts to a therapeutic treatment." Biomarkers characterize progression of the disease beginning with the cancer's earliest natural history. Genetic markers evaluate disease incidence and intensity, allowing one to predict the outcome, choose interventions, and assess treatment response. Biomarkers provide unique insight into the relationships among environmental risk factors in forensic evidence and epidemiology. Through screening, diagnosis, and disease monitoring, prognostic biomarkers provide intervention-independent information about the disease status. Individuals in the latent period of a disease's evolutionary biology can be identified using prognostic biomarkers, enabling for optimal treatment and prevention until the disease is eradicated. Prognostic biomarkers provide illness information and updates by measuring internal precursors that affect the likelihood of developing a disease. Cholesterol and blood pressure, for instance, are cardiovascular biomarkers. Prognostic biomarkers can be either active or passive to the cancer's transmission route. If a prognostic biomarker is a direct step in the causal pathway, it is one of the disease's factors or products. A predictive biomarker may be affiliated with a disease indirectly if it is connected to a change will cause by the exposed or an unknown factor related to the exposure or illness. Predictive biomarkers observe the impact of a drug and indicate whether it is performing as expected, but they do not provide any direct knowledge about the disease. Because predictive biomarkers are highly sensitive and specific, they improve the diagnosing validity of a drug's or toxins site-specific effect by removing recall bias and subjectivity from someone who has been exposed. When a person is exposed to a drug as well as toxin, the concentration of the that drug or toxic substances inside the body, or even the biological amount of drug, gives a more precise prediction of the drug or toxin's effect than an estimation or quantification of the toxic substance from the source or physical factors. Predictive biomarkers observe the impact of a drug and indicate whether it is living up to expectations, but they do not provide any direct knowledge about the disease. Because predictive biomarkers are highly sensitive and specific, those who improve the diagnosing validity of a drug's or toxins site-specific effect by removing recall bias and subjectivity from someone who has been exposed. When a person is exposed to a drug as well as toxic substances, the concentration of the that drug or toxic substances inside the body, or even the physiological amount of drug, gives a more precise prediction of the drug or toxin's impact than an estimation or quantification of the toxic substance from the source or physical factors. Pharmacodynamics (PD) biomarkers can assess the direct contact of a drug with its receptor. Pharmacodynamics biomarkers expose drug processes, such as whether the drug has the desired impact on disease biology, optimal biological dosing concentrations, and physiologic response/resistance mechanisms. Pharmacodynamics biomarkers seem to be especially important in malignant cells drug mechanisms, in which pharmacodynamics endpoints for drug interventions could be evaluated straight on tumour tissues. Protein phosphorylation biomarkers, for example, indicate changes in target protein kinases and initiation of downstream second messengers.

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CONFLICT OF INTEREST

We have no conflict of interests to disclose and the manuscript has been read and approved by all named authors.

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