A novel early detection biomarker for risk and severity of cardiac fibrosis

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Technology description

Market Need

Cardiovascular disease (CVD) is the leading cause of death worldwide, accounting for the death of 17.1 million people. Currently patients are assessed for risk of heart disease by simple blood test for biomarkers such as cholesterol, troponin and brain natriuretic peptides. However, the predictive value of these biomarkers and hence the ability to use these to assess risk is limited. Current commonly tested biomarkers can be difficult to detect due to a short life span or are not present until late stages of the CVD.

As such, there is a need for a more accurate biomarker to accurately assess a patient’ s severity and susceptibility in the early stage to increase patient satisfaction and reduce patient morbidity and mortality.

The Technology

Cardiac fibrosis is the abnormal functioning, swelling or thickening of parts of the heart which cause increased stress on the heart muscle and increase risk of CVD. Our researchers have found that high levels of Follistatin-like 3 (FSTL-3) is independently associated with susceptibility and severity of coronary heart disease, myocardial infarction and CVD. This novel biomarker is detectable in the early stages of disease progression as FSTL-3 regulates the binding and regulates growth factors in cell development; high levels of FSTL-3 lead to an increase in binding of growth factors and increase of cell growth and rate.

The technology has shown promising preliminary results as a risk prediction tool, in a pilot study of approximately 80 patients. The marker has the potential to be developed into a diagnostic, therapeutic or indicator in response to cardiac resynchronization therapy, subject to additional investment and experimentation.

Institution

The University of Adelaide

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com