Docket #: S17-285

A clinical test for early diagnosis of abdominal aortic aneurysm

Stanford inventors have developed an early-stage screening method to diagnose abdominal aortic aneurysms (AAA). AAA is a common cardiovascular disease with high prevalence in European men 65 years and above. Even though there is a mortality rate of 90%, the current method of diagnosis is often by accidental ultrasound, and usually at very late stages.
Despite a strong genetic component, understanding of AAA is still limited, so there is no effective screening test for AAA in early stages. This invention, as a product from our scientific research, aims to fill this gap and provide an effective solution for early AAA diagnosis and screening.

Stage of Development:

- Proof-of-concept
- Using a novel quantitative machine-learning model, this method achieved an average AUC=0.7 in blind tests using mutation information from specific genome regions alone. When combined with other measurements such as physiology and lifestyle that was increased to AUC=0.8.

Applications

- Clinical Screening for AAA

Advantages

- Genetic-based screening for AAA, allowing for earlier diagnosis.
- Enables effective healthcare practices; targeted approach can pinpoint vulnerable groups of people rather than broad screens

Publications

- Li J, Pan C, Zhang S, Spin JM, Deng A, Leung LLK, Dalman RL, Tsao PS, Snyder M. Decoding the Genomics of Abdominal Aortic Aneurysm. Cell. 2018 Sep 6;174(6):1361-1372.e10.

Patents

- Published Application: WO2019139950
- Published Application: 20210158894
- Issued: 12,387,816 (USA)

Innovators

- Jingjing Li
- Cuiping Pan
- Sai Zhang
- Michael Snyder
- Philip Tsao

Licensing Contact

Hyunjin Kim

Licensing Manager, Life Sciences

Email