CaRi-Heart for predicting cardiac risk in suspected coronary artery disease (CAD)

CaRi-Heart is an imaging analysis technology that could be used for predicting cardiac risk in people with suspected coronary artery disease (CAD). It uses artificial intelligence to analyse coronary computed tomography angiography (CCTA) images and quantify the amount of inflammation in the coronary arteries. Coronary inflammation causes changes in the size and composition of perivascular adipose tissue surrounding the coronary arteries. Inflammation can cause plaque rupture in arteries, potentially causing a blockage leading to heart attack or death. CCTA scans do not identify inflammation around arteries, only abnormalities such as plaque build-up.

CaRi-Heart is indicated for use in people undergoing CCTA for chest pain assessment. No modification of or additional CT hardware is required. It measures the perivascular fat attenuation index (FAI) which is integrated with clinical factors to generate an 8-year cardiac risk estimate. It is claimed that CaRi-Heart can detect coronary inflammation before artery narrowing has developed, years before a heart attack may occur. Clinicians can use the CaRi-Heart report to inform and guide individual treatment decisions, potentially leading to a reduction in heart attacks and cardiac death.

The NICE diagnostics assessment programme will evaluate CaRi Heart in an early value assessment pilot. The assessment will map the evidence that is available on the technology, assess the potential clinical and cost-effectiveness and identify evidence gaps to help direct data collection and further research.