The Economist INTELLIGENCE UNIT

Predicting heart disease: The future of CVD risk assessment

Cardiovascular disease (CVD) is the leading global cause of mortality[1-3]

Ischemic heart disease (IHD, also termed coronary artery/heart disease) accounts for half of CVD deaths[4]

50% of all IHD deaths are not preceded by any disease symptoms[5]

Global IHD in 2019[4]

197 million cases

9 million deaths

182 million DALYs*

*Disability-adjusted life years

Areas with the highest burden:

Central and South Asia
Eastern Europe
Pacific Islands
North Africa
Middle East

Current screening strategies assess overall CVD risk, none are specific to IHD[1,6]

Over 350 risk stratification models have been developed globally:[7]

- The CVD endpoint predicted is defined in >70 different ways[7]
- The risk factors assessed range from 2-80[7]
- The most commonly assessed risk factors include:[7]

Age | Sex | Blood pressure | Cholesterol | Smoking status | Diabetes

- The predictive accuracy is roughly 75%[7]
- Few are valid for use in South American, African, Asian and disadvantaged populations[7,8]

Potential circulatory biomarkers to improve risk prediction

Markers of arterial inflammation
- High sensitivity C-reactive protein (hs-CRP)

Oxidised lipid particles that trigger atherosclerosis
- Apolipoprotein A (ApoA)
- Apolipoprotein B (ApoB)
- Lipoprotein (a) or Lp(a)

Markers of arterial thrombosis
- Lipoprotein-associated phospholipase A2 (Lp-PLA2)
- Homocysteine

Markers of myocardial damage
- High sensitivity cardiac troponin (hs-cTn)

Conclusion

hs-cTn appears to have the potential of improving risk prediction when added to standard models due to its cardiac specificity and strong risk association with IHD/ CVD development.

Further research is needed to refine understanding around its use and see whether it could be a viable addition to CVD screening and risk stratification. This includes ensuring accessibility and that it is cost-effective across diverse economies.

Sponsored by Abbott

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