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Global FHSC registry highlights the challenges of familial hypercholesterolaemia: late detection, undertreatment, and disparities between men and women

First data from the European Atherosclerosis Society (EAS) Familial Hypercholesterolaemia Studies Collaboration (FHSC) global registry of over 42,000 individuals from 56 countries, provides a unique snapshot into the worldwide burden and challenges of FH care. Detection needs to be earlier, with greater use of intensive lipid-lowering therapy, including combination treatment, to attain guideline goals. Treatment of women also lags that of men. The findings were published today in *The Lancet*.

FH is an inherited condition that affects about one in 300 people, more than 25 million people worldwide.[1,2] Without effective lipid-lowering treatment, people with FH are at increased risk of early heart attacks, often in middle-age, due to elevated low-density lipoprotein cholesterol (LDL-C) levels from birth.[3] Early detection is essential to reduce this debilitating burden of disease and to gain decades of healthy life for people with FH.

The FHSC registry was established in 2015 with the mission of empowering the global clinical community to seek change in how FH is detected and managed.[4] According to Professor Kausik K. Ray (Imperial College London, UK), who leads the FHSC registry: "The challenges of FH were highlighted by the World Health Organization (WHO) Report on FH in 1998.[5] However, progress in implementing the recommendations to address these challenges has been limited. First data from the FHSC provide a baseline for current FH care worldwide, critical to understanding the changes needed in public health policy in all WHO regions."

This first report from the FHSC, based on 42,167 adults with heterozygous FH (53.6 percent women), shows that diagnosis of FH is usually delayed, as less than half of patients (about 40 percent) were under 40 years when detected. Among about 30,000 adults with data, the median age of FH diagnosis was 44.4 years; one in six already had heart disease at entry to the registry. Lead author, Dr Antonio J. Vallejo-Vaz, FHSC Chief Scientist (Imperial College London, UK) said: "As an inherited condition, FH is diagnosed too late, on average in the mid-40s, meaning that many years elapse before patients are identified and treatment is started. Late diagnosis also potentially misses out on opportunities to address other cardiovascular risk factors which become more prevalent with increasing age. Identification of FH must be improved to detect those affected much earlier."

Guidelines recommend that combination lipid-lowering therapy is essential to attain LDL-C goal in adults with FH.[6] Among patients in the FHSC registry on lipid-lowering therapy (59.9 percent), most were on a statin (81 percent). Few were on the highest statin doses and only about one in five were on combination lipid lowering therapy. Compared with men, women were less likely to receive the most potent statin doses or combination lipid lowering therapy, despite having higher LDL-C levels from age 50 years. Overall, less than 3 percent of patients on treatment attained LDL-C levels <1.8 mmol/L (<70 mg/dL), less so among women than men.

This FHSC report reinforces the value of early family screening for FH when a person is diagnosed with this condition (index case). Compared with index FH cases, individuals identified by screening were younger, had lower untreated LDL-C levels (by about 1.55 mmol/L or 60 mg/dL), and were less likely to have other cardiovascular risk factors such as high blood pressure or diabetes, or clinical coronary artery disease. Renewed efforts for public health policy for screening for FH is crucial to overcome missed opportunities to identify affected family members and initiate lipid-lowering therapy early.

Professor Kausik K. Ray added: "Over 20 years on from the WHO report, these first data from the global FHSC registry show that there is much to do in all world regions to improve FH care. Action is also needed to correct disparities in treatment between men and women. Findings from this unique registry are crucial for driving improvement in health policy for this common inherited condition across the globe, the mission of the FHSC."

This mission underpins the FHSC - FH Europe Partnership, a network of European FH patients' organisations, working together to achieve the common goal of improving FH care policy. Magdalena Daccord, Chief Executive of FH Europe said: "FH Europe welcomes this important paper from the FHSC. Together with this global FH registry, we strive to improve healthcare policy around familial hypercholesterolaemia, so that individuals and their families impacted by inherited high cholesterol are identified as early as possible and treated optimally. These data will drive innovation and support our advocacy efforts to prevent premature cardiovascular disease and to offer all FH patients an equal opportunity to live longer and healthier lives."

Global perspective of familial hypercholesterolaemia: a cross-sectional study from the EAS Familial Hypercholesterolaemia Studies Collaboration (FHSC). The Lancet 2021; doi: https://doi.org/10.1016/S0140-6736(21)01122-3

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Notes for editors

About the EAS FH Studies Collaboration

The EAS FHSC was launched in 2015 with the mission to empower the medical and global community to seek change in how FH is detected and managed. The ultimate aim is to promote early diagnosis and more effective treatment of this condition.

EASFHSC is a global initiative led by Prof Kausik K. Ray; an International Executive Committee comprising Prof Alberico L. Catapano (Italy), Dr Tomas Freiberger (Czech Republic), Prof John Kastelein, Prof G. Kees Hovingh (The Netherlands), Prof Pedro Mata (Spain), Dr Handrean Soran (UK), Prof Gerald Watts (Australia), Prof Frederick Raal (South Africa), and Prof Raul Santos (Brazil); and an International Steering Committee comprising over 80 national lead investigators from 66 countries. The Coordinating Centre is based at Imperial Centre for Cardiovascular Disease Prevention, Imperial College London, UK.

The key objectives of the EAS FHSC include:

- Generating robust information to accurately and reliably investigate the burden of both homozygous and heterozygous FH, how FH is detected and managed, and the clinical consequences of current practices on delivery of care and outcomes.
- Disseminating the information gained from the registry to an international audience including physicians, other healthcare professionals, policymakers, and patient organizations.
- Consolidating a network of investigators interested in FH, through which collaborative research and networking on FH can be conducted on a large-scale.

For further information: https://www.eas-society.org/page/fhsc

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