

CORONARY HEART DISEASE MORTALITY IN SEVERE AND NON-SEVERE FAMILIAL HYPERCHOLESTEROLAEMIA : DATA FROM THE UK SIMON BROOME FH REGISTER.

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Background: In 2016 the International Atherosclerosis Society proposed that patients with “severe” FH (SFH) should be identified since they might warrant early and more aggressive cholesterol-lowering treatment (eg, with PCSK9 inhibitors). SFH is diagnosed if LDL-cholesterol (LDLC) >10 mmol/L, or LDLC >8.0 mmol/L plus one high-risk feature, or LDLC >5 mmol/L plus two high-risk features. High-risk features include age >40 years without treatment, smoking, male sex, lipoprotein(a) >75 nmol/L, hypertension, diabetes mellitus, family history of early CHD in first-degree relatives. Here we compare CHD mortality in SFH and non-SFH patients in the UK prospective Simon Broome Register since 1991, when statin use became routine.

Methods: Analysis used 2929 Definite or Possible PFH patients (51% women) aged 20-79 years, recruited from 21 lipid clinics in the UK and followed prospectively between 1992-2016. The excess CHD standardised mortality ratio (SMR) compared to the population in England and Wales was calculated (with 95% Confidence intervals).

Results: Of the registered patients 1982 (67.7%) met the SFH definition. Compared to the non SFH, significantly (all $p < 0.001$) more of those with SFH had diagnosed CHD (24.6% vs 17.5%), were current smokers (21.9% vs 10.2%) and had a BMI > 30kg/m² (14.9% vs 7.8%). The prevalence of diabetes was low in both groups (1.0% vs 0.6%). In those with SFH the SMR for CHD mortality was 220(184-261) (34,134 person years, 129 deaths observed, vs 59 expected) compared to non-SFH of 144(98-203) (15,432 years, 32 observed vs 22 expected) ($p=0.007$).

Conclusions: The data show that, despite current treatments, CHD mortality remains elevated in FH patients and supports the view that, especially in those with SFH, attaining optimal lipid lowering, as well as management of other risk factors will be of clinical benefit.