**0033**

Unspected high prevalence of possible and probable familial hypercholesterolemia in clinical practice – the DYSIS study

Jean Ferrières’ (1), Lale TokgozGruLu (2), Dominik Lautsch (3), Martin Horack (4), Baishali Ambegaonkar (5), Philippe Brudi (5), Anselm K Gitt (5)

(1) CHU Toulouse, Toulouse, France – (2) Hacettepe University, Ankara, Turkey – (3) Merck Sharp & Dohme, Vienna, Austria – (4) Institut für Herzinfarktforschung Ludwigsafen an der Universität Heidelberg, Ludwigsafen, Allemagne – (5) Merck and Co Inc, Whitehouse Station, Eats-Unix

*Corresponding author: jean.ferrieres@univ-tlse3.fr (Jean Ferrières)

**Introduction**
The recent EAS consensus paper on familial hypercholesterolemia (FH) indicates a higher prevalence of elevated LDL-C due to genetic reasons than previously estimated. We aimed to determine the percentage of patients with very high LDL-C levels in the DYSIS study.

**Methods**
The cross-sectional, observational study DYSIS examined lipid goal attainment among statin-treated patients in Canada, Europe, the Middle East, Egypt and South Africa. In this analysis we evaluated DYSIS patients to determine very high LDL-C with potential genetic background. We examined the number of patients with possible FH (Score 3-5 according to the Dutch Advanced Method) and the number of patients with probable FH (Score 6-8). This score includes several parameters: first degree relative known with premature CHD and/or first degree relative with LDL-C >95th percentile (1 point); first degree relative with tendon xanthomas or children with LDL-C >95th percentile (2 points); the patient has premature CAD (2 points), the patient has premature cerebral or peripheral vascular disease (1 point); the patient has tendon xanthomas (6 points), the patient has corneal arcus below the age of 45 years (4 points); LDL-C >330mg/dL (8 points); LDL-C between 250 and 329mg/dL (5 points), LDL-C between 190 and 249mg/dL (3 points) and LDL-C between 155 and 189mg/dL (1 point).

**Results**
The prevalence of patients with LDL-C >190mg/dL despite statin therapy was 3% (UK 0.8%, France 3.5%, Spain 4.2%). The prevalence of patients with possible FH (Score 3-5) was 6% (UK 4.4%, France 5.9%, Spain 5.7%). The prevalence of patients with probable FH (Score 6-8) was 0.3% (UK 0%, France 0.1%, Spain 0.2%).

**Conclusions**
In this multinational study of statin-treated patients, 2.9% showed an elevated LDL-C above 190mg/dL. Genetic causes may explain the very high LDL-C levels despite statin therapy in the DYSIS study.

*The author hereby declares no conflict of interest*

**0220**

Effectiveness of ezetimibe on blood lipids in real life clinical practice

Michel Rossignol (1), Jean Ferrières (2), Jean Dallongeville (3), Lucien Abenhaim (4), Lamiae Grimaldi Bensouda (5)

(1) McGill University, Montreal, Canada – (2) CHU Toulouse, Rangueil, Toulouse, France – (3) Institut Pasteur, Lille, France – (4) LASER Europe and London School of Hygiene and Tropical Medicine, Londres, Grande-Bretagne – (5) LASER, Paris, France

*Corresponding author: lamiae.grimaldi@la-ser.com (Lamiae Grimaldi Bensouda)

EZE cohort was a 48-month prospective, nationwide study conducted between 2008 and 2013 in Franceat the request of the French Haute Autorité de Santé. Its objective was to assess the real life use and impact of the drug on lipid lowering. Over 700 physicians (94% general practitioners and 4% cardiologists recruited and described 3,395 eligible adult patients who had initiated ezetimibe treatment for no longer than three months, of which 3,215 (94.7%) were entered in the analyses. Patients were naturalistically followed up to 4 years without any visits formally planned. Blood lipids were reported by physicians every twelve months and lipid lowering medications utilization every six months with patient’s telephone interviews between each physician’s visits.

314 person-years of follow-up were accumulated. At inclusion, patients were 61.5 year-old on average (standard deviation (SD): 10.7) and 54.6% were males. Classified by CV risk categories were for primary prevention 29.3% low, 32.4% moderate and 11.4% high, and 26.9% secondary prevention.

Type of ezetimibe exposure at inclusion was 33.1% monotherapy, 13.2% ezetimibe added to a statin, and 53.7% fixed association ezetimibe – simvastatin. Exposure to ezetimibe has been very stable during follow-up of the cohort with treatment interruption rate of 12.5 per 100 person-years of follow-up. LDL-C was 4.1mmol/L (SD: 1.1) at baseline and decreased by 23.8% (SD: 28.8) in the first 12 months, reaching ~27.3% (SD: 28.3) at 48 months. Adjusting for baseline clinical characteristics and risk factors, interruption of lipid lowering treatment at least once during the follow-up was associated with a lower probability for the LDL-C to progress to the lower tertile (OR: 0.38, 95% confidence interval: 0.31 – 0.45). In this population with incident exposure to ezetimibe LDL-C decreased by one quarter in the first year and remained stable over the four-year follow-up.

*The author declares a conflict of interest: Merck funding.*

**0084**

Big data and LDL: heterozygous familial hypercholesterolemia is common in France

Jean Ferrières’ (1), Marie-Sophie Combis (2), Céline Verdier (2), Anne-Lise Genou (2), Safouane Hamdi (2), Bertrand Perret (2), Jean-Bernard Ruidavets (3)

(1) CHU Toulouse, Toulouse, France – (2) CHU Toulouse, Purpan, IFB, Toulouse, France – (3) CHU Toulouse, UMR1027 INSERM, Toulouse, France

*Corresponding author: jean.ferrieres@univ-tlse3.fr (Jean Ferrières)

**Background**
Heterozygous Familial Hypercholesterolemia (HeFH) is a severe autosomal dominant disease which is under-diagnosed. The prevalence of HeFH has rarely been assessed in an unselected sample from the general population.

**Methods**
Based on a huge sample of lipid panels, we assessed the prevalence of individuals classified with definite or probable HeFH (Dutch Lipid Clinic Network (DLCN) criteria) >5 that is to say LDL-cholesterol (LDL-C) >6.5mmol/L (251mg/dL). From 2006 to 2015, 200 620 LDL-C were obtained from 105 398 subjects, in a large database of a French University Hospital. Subjects from 0 to 102 years (53.7±20.5) and of both genders were analysed. LDL-C levels were calculated with the Friedewald or the Planella formula if elevated triglycerides. We also assessed the prevalence of all DLCN LDL-C criteria: 4.0-4.9mmol/L (155-190mg/dL), 5.0-6.4mmol/L (191-250mg/dL), 6.5-8.4mmol/L (251-325mg/dL), >8.5mmol/L (>325mg/dL).

**Results**
The prevalence of LDL-C between 4.0 and 4.9mmol/L was 9.81% (95% CI: 9.68-9.94); the prevalence of LDL-C between 5.0 and 6.4mmol/L was 2.41% (95% CI: 2.35-2.48); the prevalence of LDL-C between 6.5 and 8.4mmol/L was 0.37% (95% CI: 0.34-0.39) and the prevalence of LDL-C >8.5mmol/L was 0.09% [95% CI: 0.08-0.10]. In the first lipid determinations of 105 398 subjects, the prevalence of LDL-C between 4.0 and 4.9mmol/L was 10.77% [95% CI: 10.6-11.0]; between 5.0 and 6.4mmol/L was 2.47% [95% CI: 2.38-2.56]; between 6.5 and 8.4mmol/L was 0.28% [95% CI: 0.25-0.32] and of LDL-C >8.5mmol/L was 0.06% [95% CI: 0.04-0.07]. The prevalence of definite or probable HeFH was 0.46% in 200 620 lipid determinations and 0.34% in 105 398 subjects. The highest prevalence of definite or probable HeFH was in subjects aged between 35 and 55 years.

**Conclusions**
In France, the prevalence of definite or probable HeFH was 1/250 adults, very close to the observed prevalence of 1/200 obtained in the Copenhagen General Population Study.

*The author hereby declares no conflict of interest*