International cooperation in diabetes and obesity in specific populations

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Global initiative on gene-environment interactions in diabetes/obesity in specific populations.

CONFERENCE in 9-10 FEBRUARY 2012

EUROPEAN COMMISSION
Directorate-General for Research and Innovation
Directorate F – Health

DIABESITY - A WORLD-WIDE CHALLENGE
Towards a global initiative on gene-environment interactions in diabetes/obesity in specific populations

http://ec.europa.eu/research/health/events-12_en.html
Background and rationale

In the EU, 32 million people suffer from the diabetes, with about a further 6 million unaware that they are living with it. This figure is set to rise by 25 percent to about 40 million by 2030.

Worldwide, around 350 million people have diabetes according to the World Health Organization, and more than 900 million are expected to be diagnosed with, or as having high risk of developing, type 2 diabetes within the next two decades.
Life-long association of obesity at the start of adult life and constantly elevated risk of developing diabetes

Incidence of diabetes
RR 4.92 (4.14-5.85)

Diabetes in the year preceding death
RR 5.23 (3.63-7.54)

Prevalent diabetes at death
RR 6.83 (4.62-10.09)
Background and rationale (continued)

In Europe, type 2 diabetes is likely to reduce life expectancy by up to 10 years. It is even worse for type 1 sufferers, whose lifespan can be cut by over 20 years.

The disease contributes to coronary heart disease, stroke, peripheral vascular disease and end-stage renal disease, making it the fifth leading cause of death worldwide. Diabetes currently kills 4.6 million people worldwide a year.
Together with other associated conditions, this leads those starting adult life as obese to a lifelong constant 2-fold increased risk of dying.

Relative hazard for death: 2.05 (1.79-2.35)

Almost 10 years lower median survival for the obese.
Background and rationale (continued)

The costs linked to diabetes are spiralling upwards and are estimated to account for 8 to up to 18 per cent of total healthcare costs in European countries.

They include the costs for treatment when diabetes is diagnosed, but more importantly also those caused by side effects and complications such as blindness, limb amputation, or kidney and heart diseases.

At present, most of the resources are dedicated to diabetes treatment and care.
Background and rationale (continued)

Further investment in diabetes research and prevention is needed if we are to drive down the burden associated with diabetes in the long term.

Because of this health imperative, also linked to increasing obesity, participants explored opportunities for greater international cooperation and new partnerships in research.
Key findings and recommendations from the February conference

Genetic aspects of type 1 and type 2 diabetes and obesity in specific populations

Lifestyle and diabetes prevention programmes for minorities

Diabetes diagnosis and management in primary care in specific populations

Challenges of diabetes/obesity in pregnant women
Genetic aspects of type 1 and type 2 diabetes and obesity in specific populations

Type 1 diabetes

• Continue approach of detailed studies in high-risk populations and individuals to identify environmental determinants and triggers prior to multi-population disease endpoint studies

• Birth cohorts to study commonality of pathways to type 1 diabetes, type 2 diabetes and other autoimmune diseases

• Consider preventive randomised controlled trials for low-risk interventions
Genetic aspects of type 1 and type 2 diabetes and obesity in specific populations (continued)

*Obesity*

• Cohorts with emphasis on precise characterisation of environmental factors and obesity phenotypes

• International collaborations for evaluation of extreme phenotypes

*Type 2 diabetes*

• International collaboration in medium-sized cohorts with precise phenotyping of both environmental exposure and disease-related outcomes
Lifestyle and diabetes prevention programmes for minorities

• Develop better understanding of the policymaking dilemma

• Involve sectors outside health care: transportation; food industry; infrastructure

• Link experiences from different researchers and countries (start task force to increase cross-sectoral communication and share experience)

• Undertake more research on costs of lifestyle programmes

• Join up experiences of studies/projects in ethnic minorities to plan future research
GENOMIC AND LIFESTYLE PREDICTORS OF FOETAL OUTCOME RELEVANT TO DIABETES AND OBESITY AND THEIR RELEVANCE TO PREVENTION STRATEGIES IN SOUTH ASIAN PEOPLES [GIFTS]

New genetic approaches in understanding susceptibility for metabolic syndrome in Mediterranean populations

Diabetes and obesity among Ghanaian native & Ghanaian migrants: the RODAM project

Identification of epigenetic markers underlying increased risk of Type-2 diabetes in South Asians

EpiMigrant
Diabetes diagnosis and management in primary care in specific populations

• Develop optimum tools for screening using non-invasive methods

• Develop risk prediction engines for diabetes screening

• Identify barriers to screening

• Develop population-based educational modules to raise awareness
Challenges of diabetes/obesity in pregnant women

• Set up expert reference groups with global representation for worldwide standardisation; link with other groups.

• Promotion of importance of developmental origins

• Agreed action platform for exchange of data, samples and knowledge.

• Link with existing groups and platforms to create a uniform structure

• Develop and validate biomarkers; link with other studies across life course
FP7-HEALTH.2013.4.1-5: Global initiative on gene-environment interactions in diabetes/obesity in specific populations.

Support coordination of currently funded research into diabetes and obesity in specific populations (<2 m€ from EU)

European Commission
Member States and Associated countries
National funding agencies in
• Mexico
• New Zealand
• Canada
• USA
• Australia
Charities
Work programme

• Aligning programmes and policies
• Increase sharing of best practices
• Increase sharing of best use of research
• Increase sharing of public health resources
• Address fragmentation of research
• Develop synergies
• Develop, if possible, common strategic research agenda
• Integrate on-going and planned international projects
• Convene international meetings (like the one in February)
Expected impact

• Improve linking and efficient integration and coordination
• Provide a forum for exchange of information and best practices
• Create a transparent, dynamic and effective governing mechanisms
• Leverage on resources and avoid duplication
• Kept open for extended involvement
• Lead to a self-sustainable network
• Enabling translation of information into policy, social and economic benefits
Let’s hope that international cooperation in diabetes and obesity research in the specific populations - which in fact is the worlds populations outside and within their own premises – starting in FP7, and perhaps continued in Horizon 2020, will contribute to solve one of the greatest societal challenges in the horizon of our time - the diabesity epidemic with its deadly and costly co-morbidities!