

Diabetes and pre-diabetes are associated with cardiovascular risk factors and carotid/femoral intima-media thickness independently of markers of insulin

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Background

Impaired glucose regulation (IGR) is associated with detrimental cardiovascular outcomes such as cardiovascular disease risk factors (CVD risk factors) or intima-media thickness (IMT). Our aim was to examine whether these associations are mediated by body mass index (BMI), waist circumference (waist) or fasting serum insulin (insulin) in a population in the African region.

Methods

Major CVD risk factors (systolic blood pressure, smoking, LDL-cholesterol, HDL-cholesterol,) were measured in a random sample of adults aged 25-64 in the Seychelles (n=1255, participation rate: 80.2%). According to the criteria of the American Diabetes Association, IGR was divided in four ordered categories: 1) normal fasting glucose (NFG), 2) impaired fasting glucose (IFG) and normal glucose tolerance (IFG/NGT), 3) IFG and impaired glucose tolerance (IFG/IGT), and 4) diabetes mellitus (DM). Carotid and femoral IMT was assessed by ultrasound (n=496).

Results

Age-adjusted levels of the major CVD risk factors worsened gradually across IGR categories (NFG < IFG/NGT < IFG/IGT < DM), particularly HDL-cholesterol and blood pressure (p for trend <0.001). These relationships were marginally attenuated upon further adjustment for waist, BMI or insulin (whether considered alone or combined) and most of these relationships remained significant. With regards to IMT, the association was null with IFG/NGT, weak with IFG/IGT and stronger with DM (all more markedly at femoral than carotid levels). The associations between IMT and IFG/IGT or DM (adjusted by age and major CVD risk factors) decreased only marginally upon further adjustment for BMI, waist or insulin. Further adjustment for family history of diabetes did not alter the results.

Conclusions

We found graded relationships between IGR categories and both major CVD risk factors and carotid/femoral IMT. These relationships were only partly accounted for by BMI, waist and insulin. This suggests that increased CVD-risk associated with IGR is also mediated by factors other than the considered markers of adiposity and insulin resistance. The results also imply that IGR and associated major CVD risk factors should be systematically screened and appropriately managed.



Research Day

January 17, 2008
César Roux Auditorium

Regenerative Medecine

Unil

UNIL | Université de Lausanne

Faculté de biologie
et de médecine



CHUV RESEARCH DAY 2008
Thursday, January 17th, 2008
“Regenerative Medicine”

08:30 Presentation of the 2008 Research Day
Professor Ivan Stamenkovic, Vice Dean for Research

08:45 **Keynote
speaker 1**



Professor Philippe Menasché
Department of Cardio-Vascular Surgery
Hôpital Européen G. Pompidou, Paris
“Promises and pitfalls of skeletal myoblast therapy”

09:30 **Coffee & Posters**

10:30 6 short talks

12:00 **Keynote
speaker 2**



Professor Giulio Cossu
Stem Cell Research Institute, Milano
“Towards a cell therapy for muscular dystrophy”

12:45 **Lunch, Coffee & Posters**

14:00 **Keynote
speaker 3**



Professor Michele De Luca
Department of Biomedical Sciences, Modena
Epithelial Stem Cell Research Centre, Venice
“Epithelial stem cells and regenerative medicine”

14:45 6 short talks

16:15 **Coffee & Posters**

17:00 **Keynote
speaker 4**



Professor Lior Gepstein
Dept of Physiology & Biophysics, Technion – Haifa,
Israel
*“Myocardial Regeneration by Human Embryonic
Stem Cells”*

17:45 Poster Prizes Ceremony

18:00 **Apéritif & Buffet**

ATTENDANCE IS FREE - NO REGISTRATION IS NECESSARY

NOTE: Posters will be displayed from
Wednesday January 16st early morning to Friday January 18th early morning.

12 short talks

Schedule	Names, departments	Titles
Morning		
10h30 - 10h45	Boris Hinz Laboratoire de biophysique cellulaire - EPFL	<i>"The myofibroblast - friend and foe in tissue regeneration"</i>
10h45 - 11h00	Matthias Lutolf Laboratoire de cellules souches et bioengineering - EPFL	<i>"Bioengineering artificial stem cell niches".</i>
11h00 - 11h15	Corinne Kostic Unité de thérapie génique et biologie des cellules souches – Hôpital Ophtalmique	<i>"Gene therapy preclinical studies for Leber congenital amaurosis"</i>
11h15 - 11h30	Anne Zurn Chirurgie expérimentale - CHUV	<i>"Delayed peripheral nerve priming improves regeneration of sensory axons into the spinal cord following dorsal root injury."</i>
11h30 - 11h45	Meta Djojosebroto Unité de thérapie génique et biologie des cellules souches – Hôpital Ophtalmique	<i>"Increased chromosomal aberrations and transformation of adult mouse retinal stem cells"</i>
11h45 - 12h00	Paola Bonfanti Chirurgie expérimentale - CHUV & Laboratoire de dynamique des cellules souches - EPFL	<i>"Thymic epithelial cells have skin potency"</i>
Afternoon		
14h45 - 15h00	Dominique Pioletti Laboratoire de biomécanique en orthopédie - EPFL	<i>"In Vivo evaluation of human fetal cells as allogenic cell source for tissue engineering"</i>
15h00 - 15h15	Mikaël Martino Laboratoire de médecine régénérative et de pharmacobiologie - EPFL	<i>"Controlling mesenchymal stem cells response to biomaterials with recombinant integrin- specific fibronectin fragments"</i>
15h15 - 15h30	Dela Golshayan Néphrologie et Centre de Transplantation d'organes - CHUV	<i>"Mechanisms of Allograft rejection and tolerance in transplantation"</i>
15h30 - 15h45	Jonathan Bloch Médecine Interne - CHUV	<i>"Spleen derived vascular progenitor cell transfer restores metabolic and vascular insulin sensitivity in high-fat diet insulin resistant mice"</i>
15h45 - 16h00	Marc-Etienne Roehrich Cardiologie – CHUV	<i>"Immunophenotypical analysis of putative cardiac progenitor cells isolated based on high ALDH activity from adult mouse and human hearts"</i>
16h00 - 16h15	Mohamed Nemir Dpt de Médecine - CHUV	<i>"Control of cardiac integrity via the Notch1 receptor pathway".</i>