ZENTRALEUROPÄISCHE DIABETESGESELLSCHAFT

Zentraleuropäische Diabetesgesellschaft
*Central European Diabetes Association*
Föderation der Internationalen Donau-Symposia über Diabetes mellitus
*Federation of International Danube-Symposia on Diabetes mellitus*

P. Diem

# *Liebe Mitglieder und Freunde!*

*Meinen Mitarbeitern und mir ist es eine große Freude, das 31. FID-Symposium in Bern zu organisieren und Sie vom 30. Juni bis 2. Juli 2016 zu diesem Symposium einladen zu dürfen!*

*Wenn Sie sich fragen, was denn Bern mit der Donau zu tun habe und wieso gerade hier ein Donau-Symposium stattfinden soll, darf ich Sie auf die Internetseite aarelauf.ch/geologie-2 (Stichwort Aare-Donau) verweisen. Da werden Sie feststellen, dass vor Jahrmillionen die Aare, Wahrzeichen unserer Stadt, einer der Hauptzuflüsse der Donau war. Die Aare war nämlich im Laufe der geologischen Entwicklung nacheinander der Oberlauf der Donau, der Rhone und später des Rheins. Wahrlich eine zentraleuropäische Region!*
*Wir haben ein Programm zusammengestellt, welches einerseits zahlreiche klinisch hochaktuelle Themen beleuchtet und Ihnen andererseits einen Einblick in die diabetologische Forschung in der Schweiz geben wird. Schon bald finden Sie unter www.fid2016.ch detailliertere Informationen.*
*Auch touristisch und kulturell hat die Schweizer Hauptstadt einiges zu bieten. „Sie ist die Schönste, die wir je gesehen haben", schrieb jedenfalls Johann Wolfgang von Goethe in einem Brief an seine Freundin Charlotte von Stein, als er sich im Jahre 1779 in Bern aufhielt. Ein Besuch in Bern wird auch Ihnen Gelegenheit geben, sich von der homogenen Altstadt (UNESCO-Weltkulturerbe), der charakteristischen Aareschlaufe und dem überwältigenden Alpenpanorama verzaubern zu lassen.*

*Mit herzlichen Grüßen und auf bald in Bern!*

*Prof. Dr. Peter Diem*
*Präsident Organisationskomitee*

## 31. FID-Symposium in Bern vom 30. Juni bis 2. Juli 2016

Central European Diabetes Association (CEDA/FID):
President: Prof. Dr. R. Lehmann (Switzerland)
Vice President: Doz. Dr. I. Konrade (Latvia)
General Secretary: Prof. Dr. T. Stulnig (Austria)

Swiss Society of Endocrinology and Diabetes (SSED):
President: Prof. Dr. E. Christ, Bern
Vice President: Prof. F. Pralong, Lausanne

Congress President:
Prof. Dr. P. Diem, Bern

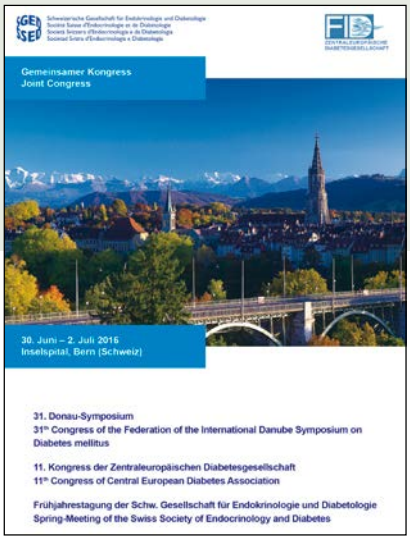
Local Organizing Committee:
Prof. Dr. E. Christ, Bern; PD Dr. M. Laimer, Bern/Innsbruck; Prof. Dr. C. Stettler, Bern; Prof. Dr. Z. Stanga, Bern

Scientific Committee:
Prof. Dr. E. Christ, Bern; Prof. Dr. M. Braendle, St. Gallen; Prof. Dr. P. Diem, Bern; PD Dr. M. Laimer, Bern/Innsbruck; Prof. Dr. R. Lehmann, Zürich; Prof. Dr. J. Philippe, Genf; Prof. Dr. F. Pralong, Lausanne; Prof. Dr. G. Spinas, Zürich; Prof. Dr. C. Stettler, Bern; Prof. Dr. Z. Stanga, Bern; C. Weiss, Bern; I. Zanella, Biel

**Main Topics**

- Novel treatment options
- Diabetes and obesity
- Bariatric surgery in type 2 diabetes
- The role of the alpha-cell in diabetes
- Physiology and pathophysiology of islet function
- Pancreas and islets transplantation
- Sensor augmented pump therapy and closed loop systems
- Diabetes in endocrine disease
- Diabetes update for diabetes nurse educators and dieticians (in German)

**Oral presentations**
**Poster presentations**



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# *Liebe Mitglieder und Freunde der Zentraleuropäischen Diabetesgesellschaft – FID!*

P. Diem

*In diesem Jahr führt die Föderation Internationaler Donau-Symposien ihre Tagung zusammen mit der Schweizerischen Gesellschaft für Endokrinologie und Diabetologie in Bern durch. Die Tagung wird durchgeführt im Inselspital, dem Berner Universitätsspital, dessen Gründung auf das Jahr 1354 zurückgeht. Wenn Sie sich fragen, was denn Bern mit der Donau zu tun habe und wieso gerade hier ein Donau-Symposium stattfinden soll, möchten wir Sie auf http://aarelauf.ch/geologie-2/ (Stichwort Aare-Donau) verweisen. Da werden Sie feststellen, dass vor Jahrmillionen die*

**Präfinales Programm des 31. Donau-Symposiums/11. Kongress der Zentraleuropäischen Diabetesgesellschaft/Frühjahrestagung der Schweizerischen Gesellschaft für Endokrinologie und Diabetologie**

**30. Juni – 2. Juli 2016**

*Opening Session:*
- P. Scherer, Dallas: The role of the adipose tissue in diabetes and obesity
- H. Steinke, Bern: Johann Conrad Brunner and his studies on pancreatectomy

*Update on novel treatment options in diabetes:*
- R. Weitgasser, Salzburg: New insulins
- M. Nauck, Bochum: GLP-1 analogues
- S. Matthaei, Quakenbrück: SGLT-2 inhibitors
- N. C. Schloot, Düsseldorf: Diabetes disease classification: relevance to pathophysiology and treatment

*Hot topics in diabetes:*
- M. Roden, Düsseldorf: Adaptation of energy metabolism in NAFLD
- M. Brändle, St. Gallen: Health economics of diabetes for the beginner
- V. Schwitzgebel, Genf: Monogenic diabetes

*The role of alpha cells in diabetes:*
- B. Thorens, Lausanne: Recognition and reaction to hypoglycemia
- F. Knop, Kopenhagen: Regulation of glucagon secretion from the alpha cells
- T. Vilsboll, Kopenhagen: Interventions to decrease glucagon effects in diabetes
- Y. Gosmain, Genf: The alpha cell in type 1 and type 2 diabetes

*From islets and transplantation to the artificial pancreas:*
- R. Lehmann, Zürich: Long-term follow-up of simultaneous islet-kidney transplantation
- N. S. Kenyon, Miami: Islet transplantation: from the beginning to the future
- C. Stettler, Bern: Artificial pancreas – role of exercise and food
- J. Bolinder, Stockholm: From pancreas transplantation to diabetes technologies

*Diabetes in endocrine disease:*
- C. Meier, Basel: Diabetes & osteoporosis
- C. Henzen, Luzern: Diabetes & hyperparathyroidism
- S. Bilz, St. Gallen: Diabetes & growth hormone
- P. Wiesli, Frauenfeld: Diabetes & cortisone

*Diabetes-Update für Berater/-innen (deutschsprachige Referate):*
- B. Chappuis, Burgdorf: Neue Insuline
- L. Bally, Bern: Continuous Glucose Monitoring zur Therapieentscheidung

Bern Tourismus

- E. Horat, Bern: Lösungsorientiert kommunizieren
- R. Fricker, Bern: Verschiedene Facetten der Kohlenhydrate

*From obesity to type 2 diabetes:*
- A. Golay, Genf: The double insulin resistance
- M. Donath, Basel: Targeting inflammation in obesity to prevent and treat type 2 diabetes
- P. Gerber, Zürich: Fructose: guilty or innocent?

*Update on pathophysiology of diabetes:*
- N. C. Schloot, Düsseldorf: Autoimmunity in human type 1 diabetes
- P. Maechler, Genf: Mitochondrial function and insulin secretion
- K. Ahmed, Zürich: microRNA and islet function
- J. Krützfeldt, Zürich: microRNA and insulin resistance

Zusätzlich sind „Oral Presentations", Poster-Sessions sowie 4 bis 5 Industrie-Symposien programmiert.

*Aare, Wahrzeichen Berns, einer der Hauptzuflüsse der Donau war. Die Aare war nämlich im Laufe der geologischen Entwicklung nacheinander der Oberlauf der Donau, der Rhone und später des Rheins. Wahrlich eine zentraleuropäische Region!*
*Das Organisationskomitee hat ein Programm zusammengestellt, welches einerseits zahlreiche klinisch hochaktuelle Themen beleuchtet und Ihnen andererseits einen Einblick in die diabetologische Forschung in der Schweiz geben soll. Das präfinale Programm finden Sie unten. Schon bald finden Sie zudem unter www.fid2016.ch weitere Informationen und die Möglichkeit, sich online anzumelden und Abstracts einzureichen.*
*Touristisch und kulturell hat die Schweizer Hauptstadt einiges zu bieten! „Sie ist die Schönste, die wir je gesehen haben", schrieb jedenfalls Johann Wolfgang von Goethe in einem Brief an seine Freundin Charlotte von Stein, als er sich im Jahr 1779 in Bern aufhielt. Heute zählt Bern weltweit zu den Städten mit der höchsten Lebensqualität (Mercer Ranking 2016: Rang 14). Der Besuch der Tagung wird auch Ihnen Gelegenheit geben, sich von der homogenen Altstadt (UNESCO-Weltkulturerbe), der charakteristischen Aareschlaufe und dem überwältigenden Alpenpanorama verzaubern zu lassen.*

*Mit freundlichen zentraleuropäischen Grüßen*

*Peter Diem (Tagungspräsident), Bern, und das lokale Organisationskomitee*

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# 31th Congress of the Federation of the International Danube Symposium on Diabetes Mellitus, 11th Congress of Central European Diabetes Association, Spring-Meeting of the Swiss Society of Endocrinology and Diabetes – 30.6.–2.7.2016, Bern, Switzerland

## OP 1

### GoCARB: a computer vision-based smartphone system for carbohydrate counting

J. Dehais[1], M. Anthimopoulos[1], S. Shevchik[1], R. Botwey[1], D. Rhyner[1,2], L. Bally[2], P. Diem[2], C. Stettler[2], S. Mougiakakou[1,2]

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2) Department of Endocrinology, Diabetes and Clinical Nutrition, Bern University Hospital "Inselspital", Switzerland

Background/Introduction: Estimating a meal's carbohydrate (CHO) counting is of importance in diabetes self-management. However, it remains a challenging task in daily life. GoCARB is a computer vision-based smartphone application designed to estimate meal's CHO content h with an error less than ± 20 grams/meal and minimum user interaction.
Methods: The GoCARB prototype was developed based on the assumptions that the plate is circular and shallow and the food items in the plate are not occluded. In a typical scenario, the user places a reference object (e.g. credit card) next to the plate and acquires two images using a smartphone's camera. Then, the different food items on the plate are segmented and recognized while their 3D shape is reconstructed. Based on the shape, the segmentation results and the reference object, the volume of each item is estimated. Finally, the CHO content is calculated by combining the food type with its volume, and using nutritional databases. GoCARB's validation involved a three-step procedure: i) testing in a laboratory setup with 24 dishes, ii) pre-clinical study involving 19 adults with T1D, and iii) randomized, prospective, single-center, two-period, with cross-over after one week clinical trial involving 20 adults with T1D under sensor-augmented pump therapy.
Results: In the laboratory setup, GoCARB was able to estimate the CHO content of 24 meals with a mean absolute error of 6 ± 8 CHO grams. In the pre-clinical study, each participant was asked to count the CHO content of each meal. Then, he/she was asked to estimate the CHO content by using GoCARB. A total of 114 estimates on 60 meals were used. The mean absolute error was 27.89 ± 38.20 CHO grams of CHO for individuals with T1D and 12.28 ± 9.56 CHO grams by using the GoCARB system. Participants also strongly supported using the software for daily counting. During the clinical trial, the participant's glucose levels, insulin intake, energy expenditure, and eating habits were gathered. These data were then processed to calculate useful diabetes management measures and the effect of GoCARB on them. An early analysis showed a positive influence for the use of GoCARB: the average and standard deviation of glucose level were lower, and so was the average increase in postprandial glucose.
Conclusion: According to the three-step validation procedure the GoCARB system the CHO content errors below 20 grams and is significantly more accurate than the average individual with T1D. Furthermore, it seems that its usage positively impacts the glucose profile.

## OP 2

### Impaired glucose tolerance in mice with β-cell-specific deletion of PKBα

M.G. Dietrich[1,2], R.A. Zuellig[1], F.C. Lucchini[3], S. Wueest[3], M. Niessen[1,2], D. Konrad[3], G.A. Spinas[1,2], O. Tschopp[1,2]

1) Division of Endocrinology, Diabetes & Clinical Nutrition, University Hospital Zurich, Switzerland

2) Competence Center Personalized Medicine UZH/ETH, Zurich, Switzerland

3) Division of Pediatric Endocrinology and Diabetology, University Children's Hospital Zurich, Switzerland

Background/Introduction: Protein kinase B (PKB)/Akt is considered a key target downstream of insulin receptor substrate 2 (IRS2) in the regulation of pancreatic β-cell mass. There exist three isoforms of PKB, i.e. PKBα/Akt1, PKBβ/Akt2, and PKBγ/Akt3, which are all expressed in pancreatic β-cells. It is however unclear, whether these isoforms exert differential effects with regard to functional β-cell mass. The aim of this study was to investigate in mice the effect of β-cell specific deletion of PKBα (βpkbαKO) on glucose homeostasis, β-cell function and β-cell mass.
Methods: Mice were rendered insulin resistant by feeding a high-fat diet (HFD) and characterized metabolically by intraperitoneal glucose insulin tolerance tests (ipGTT) and hyperglycemic clamps. In addition, glucose-stimulated insulin secretion (GSIS) was assessed in isolated islets and islet morphology was studied in pancreatic tissue sections.
Results: Western blot analysis showed that PKBα was normally expressed in control mice, but absent in β-cells from βpkbαKO mice. Under normal chow diet male βpkbαKO mice exhibited reduced glucose tolerance with significantly increased AUC (+ 22.6 % ± 6.5 %; $p \leq 0.05$) in adult live, i.e. at the age of 26 weeks. HFD accelerated the onset of impaired glucose tolerance with significantly increased AUC (+10.06 % ± 3.6 %; $p \leq 0.05$) already at age of 12 weeks (6 weeks on HFD). Plasma insulin levels during GTT and

hyperglycemic clamps were reduced in HFD-fed βpkbαKO mice. However, GSIS was increased in islets from chow fed but decreased in islets from HFD-fed βpkbαKO mice. Preliminary analyses of pancreas morphology from 28 weeks old mice revealed a 50 % decrease of β-cell area in βpkbαKO mice under chow and HFD as compared to control littermates.

Conclusion: Thus, this study shows for the first time that β-cell specific loss of PKBα results in impaired glucose tolerance, potentially due to reduced β-cell mass. Whether the reduced β-cell mass in adulthood is the result of islet loss or of failure to form new islets, or even caused by impaired embryonic development is currently under investigation.

## OP 3

### Response to SGLT-2 inhibitor may be altered in HNF1A-MODY

J. Hohendorff, M. Szopa, J. Skupien, T. Klupa, M.T. Malecki

Background/Introduction: MODY accounts for 1 – 5 % of all diabetes cases and most of them are HNF1A- and GCK-MODY. Dietary intervention is generally sufficient to maintain good glycemic control in subjects with GCK gene mutation. HNF1A gene mutations affect insulin secretion to a greater extent. For patients with genetically confirmed HNF1A-MODY sulfonylurea therapy should be considered as the first-line treatment. It was shown that HNF1A controls SGLT2 (sodium-glucose co-transporter 2) expression which results in increased glycosuria in HNF1A-MODY patients. Therefore, response to SGLT2 inhibitors in HNF1A-MODY patients may be altered. In this pilot study, we aimed to assess differences in response to a single morning application of 10 mg dapagliflozin in HNF1A- and GCK-MODY patients.

Methods: A total of 21 patients were included in the study: 11 with GCK-MODY and 10 with HNF1A-MODY. Dapagliflozin was added to patients' current treatment regimens – all GCK-MODY subjects were on diet only, whereas HNF1A-MODY patients were on diet (1), SU (6), SU combined with metformin (2) and SU combined with 3 U/d of insulin (1). Fasting plasma glucose (FPG), urine glucose concentration and urinary glucose-to-creatinine ratio (GCR) were measured in the morning of the administration day and the day after. Additionally, patients were asked to perform self-monitoring of blood glucose twice – on the administration day and the day before.

Results: There were no differences in mean $HbA_{1c}$ (6.25; 6.06 %) nor BMI (23.1; 24.6 kg/m$^2$) between the groups. GCK-MODY patients had higher mean FPG (6.81 vs. 5.66 mmol/l, p = 0.0137). Mean reduction in FPG after dapagliflozin administration was 0,63 in GCK-MODY, whereas in HNF1A-MODY patients was 0.24 mmol/l (p = 0.2367). This could suggest altered response to SGLT2 inhibitors in HNF1A-MODY due to impaired SGLT2 function. Moreover, we found a difference in median increment in GCR after SGLT2 inhibitor administration between GCK-MODY and HNF1A-MODY patients (24.5 vs.14.0, p = 0.0447).

Conclusion: To summarize, SGLT2 inhibitors seem to be less efficient in HNF1A-MODY than in GCK-MODY. This finding requires further studies.

Financial support: The study was supported by an EFSD New Horizons Programme award.

## OP 4

### Differential use of insulin pumps in patients with type 1 diabetes of different age groups: analysis of the DPV (Diabetes Prospective Follow-up) initiative with centers from Germany, Austria, Luxemburg and Switzerland

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2) Catholic Children's Hospital, Hamburg, Germany

3) Medical University of Innsbruck, Department of Pediatrics, Innsbruck, Austria

4) Heinrich-Heine University Düsseldorf, German Diabetes Center, Institute for Biometry and Epidemiology, Düsseldorf, Germany

5) Catholic Hospital Bochum, St. Josef Hospital, Bochum, Germany

6) Centre Hospitalier de Luxembourg, Luxembourg

7) Hospital Klagenfurth at Wörthersee, Klagenfurt, Austria

8) Bern University Hospital "Inselspital", Bern, Switzerland

Background/Introduction: Data on therapy options in real-life patient care are important to monitor trends in diabetes therapy as well as adherence to current guidelines together with short-term and long-term outcome. Increasing use of diabetes technology, including insulin pumps and continuous glucose monitoring, is one of the most dynamic trends in type 1 diabetes management during recent years. We investigated age differences in the use of insulin pumps since the year 2000.

Methods: The DPV registry is one of the largest ressources available on care and outcome of diabetes in Germany and Austria, including both pediatric and adult patients, recently centers from Luxemburg (pediatrics) and Switzerland (internal medicine). In total, the registry includes 3.7 million patient visits from 454 645 patients with diabetes. This abstract focusses on type 1 diabetes, with 2 167 530 visits from 108 052 patients. Use of insulin pumps was evaluated by year of treatment and age group. A total of 445 specialized diabetes centers contributed data (258 pediatric, 187 internal medicine). SAS 9.4 was used for data analysis.

Results: In total, 31 188 patients with type 1 diabetes using insulin pumps are included in the DPV registry. In adult patients (age > 18 years), pump use increased from 24.1 % in the year 2000 to 36.2 % in 2015. In adolescents (12 – 18 years), it was even more pronounced (2000: 5.8 %, 2015: 41.6 %). School age patients (6 – 12 years) displayed an increase from 1.1 % of pump use in 2000 up to 53.9 % in 2015. The most striking pattern was observed in preschool children (< 6 years of age): 0.8 % used insulin pumps in 2000, increasing up to 83.1 % in 2015.

Conclusion: The use of CSII increased in all age groups, however there was a clear age difference with later adoption of insulin pumps, but more rapid increase

in this therapy for younger children. Today, the vast majority of toddlers uses insulin pumps. Population-based registries, documenting the process and outcome of diabetes care, are a valuable tool to monitor longitudinal trends in real-life patient care.

## OP 5

### Type II muscle fibres have an increased potential for reactive oxygen species production

D. Pesta[1], T. Jelenik[1], M. Roden[1]

1) Institute for Clinical Diabetology, Heinrich-Heine University Düsseldorf, German Diabetes Center, Düsseldorf, Germany

Background/Introduction: Increased reactive oxygen species (ROS) production in skeletal muscle has been associated with the development of insulin resistance and type 2 diabetes (T2D). Preliminary evidence suggests that fast-twitch type II fibres may possess a higher potential for ROS production than slow-twitch type I fibers. First-degree relatives of patients with T2D have ~30 % increased number of type II muscle fibres. Therefore, the connection between oxidative stress, impaired mitochondrial function, and insulin resistance warrants further investigation.

Methods: Site-specific ROS production of three main sites (CIQ, CIIF, CIIIQo) was assessed by superoxide Amplex Red fluorescence assay in two muscles with a different fibre spectrum from slow to fast (soleus, white gastrocnemius) in wildtype mice (C57BL/6J). Mitochondrial content was determined by citrate synthase activity (CSA).

Results: We found that ROS production per wet weight was higher in soleus than in white gastrocnemius at CIQ with a trend at CIIF and no difference at CIIIQo. When ROS production was normalized for mitochondrial content, ROS production at CIQ was 50 % higher in white gastrocnemius than in soleus with a similar strong trend at CIIIQo and no difference at CIIF.

Conclusion: Our results suggest intrinsic differences in the potential for ROS production between fast- and slow-twitch muscle fibres which are independent of mitochondrial content.

## P 1

### Clinical outcomes in Asian and non-Asian people with type 2 diabetes initiating insulin glargine 100 Units/ml (Gla-100) therapy: results of a pooled analysis from 16 RCTs

J. C. N. Chan[1], P. Bunnag[2], S. P. Chan[3], I. Thiele Isip Tan[4], S.-T. Tsai[5], L. Gao[6], W. Landgraf[7]

1) The Chinese University of Hong Kong, Hong Kong Special Administrative Region, People's Republic of China

2) Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

3) University of Malaya Medical Centre, Kuala Lumpur, Malaysia

4) University of the Philippines, Manila, Philippines

5) Cheng Hsin General Hospital, Taipei, Taiwan

6) Analysta Inc., Somerset, NJ, USA

7) Sanofi, Frankfurt, Germany

Background/Introduction: Type 2 diabetes (T2DM) is an epidemic disease in Asia, with a younger age and lower BMI at diagnosis in Asians vs. non-Asians.

Methods: This patient-level analysis compared outcomes in Asians and non-Asians with T2DM from 16 RCTs (target FPG ≤ 100 mg/dl, ≥ 24-week duration) adding Gla-100 to OADs. Data from Asians and non-Asians were compared overall and by concomitant metformin (MET) plus sulphonylurea (SU) therapy at baseline and week 24.

Results: Of 3 586 study participants, 235 were Asian. Among OADs, MET + SU was the most common co-treatment with Gla-100. Outcomes at week 24 for overall and MET + SU subgroups are shown in the Table. Asians were younger, had a lower BMI and FPG, but similar baseline $HbA_{1c}$ vs. non-Asians. Asians had a statistically significant higher adjusted mean $HbA_{1c}$ at week 24 and were less likely to achieve target

| Parameter (SD) | Gla-100 Overall | | | Gla-100 + MET + SU | | |
|---|---|---|---|---|---|---|
| | Asian (n = 235) | Non-Asian (n = 3 351) | P Value | Asian (n = 111) | Non-Asian (n = 1 513) | P Value |
| ***Baseline:*** | | | | | | |
| Age, years | 53.7 (9.0) | 57.9 (9.7) | < 0.001 | 54.1 (8.8) | 58.5 (9.1) | < 0.001 |
| Diabetes duration, years | 8.9 (6.0) | 8.9 (6.2) | 0.92 | 9.6 (4.8) | 9.4 (6.3) | 0.74 |
| Weight, kg | 70.4 (12.6) | 87.3 (18.1) | < 0.001 | 70.1 (13.2) | 88.6 (17.0) | < 0.001 |
| BMI, kg/m² | 27.1 (3.9) | 30.8 (5.3) | < 0.001 | 27.3 (4.3) | 31.2 (4.9) | < 0.001 |
| $HbA_{1c}$, % | 8.6 (1.0) | 8.7 (1.1) | 0.08 | 8.4 (0.9) | 8.6 (1.0) | 0.04 |
| FPG, mg/dl | 169 (46) | 194 (55) | < 0.001 | 160 (38) | 189 (52) | < 0.001 |
| Insulin dose, U/kg | 0.18 (0.04) | 0.16 (0.08) | < 0.001 | 0.17 (0.04) | 0.14 (0.05) | < 0.001 |
| ***Week 24 endpoints:*** | | | | | | |
| Adjusted $HbA_{1c}$, % | 7.42 (0.06) | 7.16 (0.02) | < 0.001 | 7.16 (0.08) | 7.07 (0.02) | 0.27 |
| Adjusted $HbA_{1c}$ change from baseline | –1.30 (0.06) | –1.55 (0.02) | < 0.001 | –1.41 (0.08) | –1.50 (0.02) | 0.27 |
| $HbA_{1c}$ ≤ 7.0 %, n (%) | 90 (41.9) | 1605 (50.7) | < 0.001 | 44 (43.1) | 783 (53.8) | 0.14 |
| Adjusted FPG change from baseline, mg/dl | –78.1 (2.6) | –75.2 (0.7) | 0.27 | –74.4 (3.7) | –68.3 (0.9) | 0.11 |
| FPG ≤ 100 mg/dl, n (%) | 101 (47.6) | 1076 (34.0) | 0.21 | 44 (44.9) | 468 (32.5) | 0.37 |
| Adjusted hypoglycaemia[a], events per patient-year | 4.3 (0.6) | 5.5 (0.2) | 0.09 | 6.5 (1.1) | 7.4 (0.3) | 0.45 |
| Adjusted weight change from baseline, kg | 1.3 (0.2) | 1.9 (0.1) | 0.01 | 1.4 (0.3) | 1.8 (0.1) | 0.25 |
| Adjusted insulin dose, U/kg | 0.47 (0.02) | 0.45 (0.00) | 0.16 | 0.36 (0.02) | 0.41 (0.01) | 0.045 |

Data presented represent mean (SD) for baseline and adjusted mean (SE) for week 24 endpoint, except for items n (%).
[a]Overall hypoglycaemia defined as PG < 70 mg/dl or third-party assistance required.

**P 1, Tab.: Clinical Outcomes in Asian and non-Asian people with T2D initiating Gla-100 therapy.**

$HbA_{1c}$ < 7.0 %, but more Asians had FPG ≤ 100 mg/dl compared with non-Asians. Final Gla-100 doses and hypoglycaemia event rates were similar in Asians and non-Asians. Lower weight gain was observed in Asians (P = 0.01). The results of the MET + SU subgroup reflected those of the overall population.
Conclusion: This post-hoc analysis suggests that at similar Gla-100 doses and hypoglycaemia frequency, $HbA_{1c}$ control in Asian T2DM patients appears poorer compared with non-Asian patients, despite better FPG control. More studies are needed to explore potential differences in treatment responses between Asian and non-Asian T2DM patients.

Study supported by Sanofi

Data were presented at ADA 2016, Saturday, June 10 – 14, 2016, New Orleans, Louisiana

| Parameter | Frequency of hypoglycaemic events during titration (Week 0 – 8) | | | |
|---|---|---|---|---|
| | 0 n = 2573 | 1 – 3 n = 732 | 4 – 6 n = 152 | > 6 n = 92 |
| Duration of diabetes, years | 8.6 (6.0) | 9.5 (6.4) | 10.2 (6.5) | 9.9 (7.4) |
| Baseline body weight, kg | 87.7 (18.5) | 83.3 (17.4) | 77.4 (14.6) | 77.8 (15.1) |
| Baseline BMI, kg/m² | 31.0 (5.3) | 29.6 (4.9) | 28.3 (4.5) | 28.4 (4.5) |
| Baseline FPG, mg/dl | 194 (54) | 187 (52) | 186 (64) | 184 (55) |
| Baseline $HbA_{1c}$, % | 8.8 (1.1) | 8.6 (1.0) | 8.5 (1.0) | 8.5 (0.9) |
| Baseline insulin dose, U/kg | 0.2 (0.1) | 0.2 (0.1) | 0.2 (0.1) | 0.2 (0.1) |
| Week 24 $HbA_{1c}$, %* | 7.2 (1.04) | 7.0 (0.95) | 7.1 (0.87) | 7.0 (0.91) |
| $HbA_{1c}$ change from BL to week 24, %* | –1.5 (1.2) | –1.5 (1.1) | –1.4 (1.0) | –1.5 (1.0) |
| Insulin dose change from BL to week 24, U/kg† | 0.31 (0.26) | 0.20 (0.19) | 0.12 (0.16) | 0.07 (0.14) |

*0: n = 2486; 1 – 3: n = 718; 4 – 6: n = 152; > 6: n = 91; †0: n = 2573; 1 – 3: n = 732; 4 – 6: n = 152; > 6: n = 92; data presented represent mean (SD); SD: standard deviation, BL: baseline

**P 2, Tab.: Patient characteristics stratified by frequency of hypoglycaemic events during Gla-100 titration.**

## P 2

### Patient characteristics and clinical outcomes associated with hypoglycaemia frequency during titration of insulin glargine 100 units/ml (Gla-100) in people with type 2 diabetes (T2D)

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Background/Introduction: Hypoglycaemia during insulin initiation and intensification can be a barrier to dose optimization and achievement of glycaemic control targets.
Methods: This post-hoc subject-level analysis examined standardized data from 16 RCTs (FPG target ≤ 100 mg/dl, ≥ 24 weeks duration) adding Gla-100 to OADs in insulin-naive people with T2D. The impact was studied of overall hypoglycaemia frequency (confirmed PG < 70 mg/dl or assistance required, stratified according to 0, 1 – 3, 4 – 6, or > 6 events during titration from weeks 0 – 8) on glycaemic outcomes and insulin dose at week 24.
Results: Data from 3 549 participants were analyzed. Group size declined as hypoglycaemia frequency increased but mean age was similar (58 years) across all groups. Those with > 4 hypoglycaemic events during titration had the lowest baseline body weight, FPG, and $HbA_{1c}$, and longer diabetes duration (Table). In contrast, those experiencing less hypoglycaemia (≤ 3 events) had higher BMI, FPG and $HbA_{1c}$ at onset with a greater change in insulin dose from baseline to week 24.
Conclusion: Lower hypoglycaemia incidence occurs during insulin titration in people with T2D with a greater insulin resistance (higher insulin dose requirement and smaller $HbA_{1c}$ reduction), in contrast to people experiencing more hypoglycaemia during titration with greater $HbA_{1c}$ reduction.

Study supported by Sanofi

Data were presented at ADA 2016, Saturday, June 10 – 14, 2016, New Orleans, Louisiana

## P 3

### Effect of glucose lowering treatment on lipid profile in people with type 2 diabetes (T2DM): relationship to lipid lowering therapy

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Background/Introduction: Dyslipidaemia is a major risk factor for cardiovascular disease (CVD), being the major cause of mortality in T2DM.
Methods: This post-hoc patient-level analysis included data from 11 RCTs (target FPG ≤ 100 mg/dl, ≥ 24 week duration) conducted with insulin glargine 100 units/ml (Gla-100) vs. comparator antihyperglycaemic drugs from 1999 to 2008. The effects of pooled glucose lowering therapy (GLT) on lipid status at baseline and 24 weeks were examined in patients with diagnosed CVD at BL and receiving lipid lowering therapy (LLT) at discretion of physicians, patients with CVD not receiving LLT and control people without CVD, not receiving LLT.
Results: Only 41 % (n = 1 940) of all T2DM study participants ± CVD (n = 4 768) were treated with LLT despite being considered at high CV risk and 2 828 did not receive LLT. LLT included statins (88 %), fibrates (11 %), and others (10 %). 97 % (with LLT) and 63 % (without LLT) had CVD at study entry with LDL cholesterol, non HDL cholesterol, triglycerides

(TG) levels above lipid targets recommendations at baseline and week 24, whatever LLT (Table). After 24 weeks of GLT, non HDL cholesterol and TG slightly improved; LDL cholesterol, HDL cholesterol levels remained almost unchanged, irrespective of LLT use. Importantly, only 51 % of those with T2DM and CVD received LLT as recommended (AHA/ADA 2015).

Conclusion: Our data suggest modest improvement on non HDL cholesterol, TG levels with GLT in T2DM study participants with CVD and the need to treat people with T2DM optimally with LLT according to current recommendations.

| | Lipid-lowering therapy during trial | | No lipid-lowering therapy during trial | | | |
|---|---|---|---|---|---|---|
| | Diagnosed with CVD at baseline (n = 1885) | | Diagnosed with CVD at baseline (n = 1787) | | Without CVD diagnosis at baseline (n = 1041) | |
| **Glucose lowering treatment** | **Gla-100: 51 %, other insulins: 16 %, NPH: 14 %, OADs: 19 %** | | **Gla-100: 53 %, other insulins: 10 %, NPH: 17 %, OADs: 20 %** | | **Gla-100: 54 %, other insulins: 7 %, NPH: 24 %, OADs: 15 %** | |
| | **Baseline** | **Change from baseline to week 24** | **Baseline** | **Change from baseline to week 24** | **Baseline** | **Change from baseline to week 24** |
| $HbA_{1c}$, % | 8.7 (1.02) | –1.4 (1.13) | 8.8 (1.05) | –1.5 (1.19) | 9.0 (1.09) | –1.6 (1.24) |
| Non-HDL-C, mg/dl | 142.85 (48.42) | –9.10 (39.67) | 159.78 (41.92) | –5.20 (29.57) | 151.04 (50.31) | –3.85 (43.34) |
| LDL-C, mg/dl | 99.94 (37.05) | –0.98 (30.48) | 120.83 (36.39) | 1.51 (27.42) | 116.31 (32.96) | 0.51 (25.96) |
| HDL-C, mg/dl | 43.83 (11.42) | 0.32 (7.17) | 45.69 (13.30) | 0.56 (10.12) | 45.27 (13.08) | 0.36 (10.58) |
| Triglycerides, mg/dl | 241.40 (247.69) | –51.20 (220.81) | 210.99 (163.16) | –38.84 (141.93) | 181.51 (129.15) | –25.83 (106.05) |
| C-Peptide (nmol/l) | 1.19 (0.60) | | 1.15 (0.59) | | 1.00 (0.60) | |

Data represent mean (SD); HDL-C: high-density lipoprotein cholesterol, LDL-C: low-density lipoprotein cholesterol;
$p < 0.05$ between patients treated with lipid lowering therapy vs. not treated for $HbA_{1c}$ and all lipid parameters at baseline and change to week 24, except for triglycerides which was significant ($p < 0.05$) at baseline only

**P 3, Tab.: Effect of glucose lowering treatment on lipid profile in people with type 2 diabetes.**

Study supported by Sanofi

Data were presented at ADA 2016, Saturday, June 10 – 14, 2016, New Orleans, Louisiana

## P 4

### Biomarkers of subclinical inflammation are associated with cardiac autonomic dysfunction in recent-onset type 2 but not type 1 diabetes

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#) M. R. and D. Z. contributed equally to this work

Background/Introduction: Cardiovascular autonomic neuropathy is a common but underestimated diabetes-related disorder. Associations between cardiovascular autonomic dysfunction and subclinical inflammation, both risk factors of diabetic comorbidities and mortality, have been proposed in non-diabetic populations, while data for type 1 and type 2 diabetes are conflicting. Our aim was to investigate associations between inflammation-related biomarkers and cardiac autonomic dysfunction in recently diagnosed diabetes patients.

Methods: We characterised the associations between seven biomarkers of subclinical inflammation and cardiac autonomic dysfunction based on heart rate variability (HRV) and cardiovascular autonomic reflex tests (CARTs) in 161 individuals with type 1 and 352 individuals with type 2 diabetes (time since diagnosis of diabetes < 1 year). Analyses were adjusted for age, sex, anthropometric, metabolic and lifestyle factors, medication and cardiovascular comorbidities.

Results: In individuals with type 2 diabetes, higher serum interleukin (IL)-18 was associated with lower vagal activity ($P \leq 0.015$ for association with CARTs), whereas higher levels of total and high-molecular-weight adiponectin showed associations with very-low-frequency power, an indicator of reduced sympathetic activity ($P \leq 0.014$). Higher levels of soluble intercellular adhesion molecule-1 were associated with indicators of both lower vagal ($P = 0.025$) and sympathetic ($P = 0.008$) tone, soluble E-selectin with one indicator of lower vagal activity ($P = 0.047$). Serum C-reactive protein and IL-6 were also related to cardiac autonomic dysfunction, but these associations were explained by confounding factors. No consistent associations were found in individuals with type 1 diabetes.

Conclusion: Biomarkers of inflammation were differentially associated with diminished cardiac autonomic dysfunction as early as in recent-onset type 2 but not type 1 diabetes.

## P 5

### Online adaptive models for personalized prediction of glucose profile in individuals with type 1 diabetes

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Background/Introduction: The use of personalized, data-driven models for the real-time prediction of glucose profile in

individuals with type 1 diabetes (T1D) under sensor-augmented pump (SAP) therapy is of imminence importance for diabetes self-management. Scope of the present research is to investigate how to tackle issues related to the accuracy of the glucose predictions and time-lags (TL) between predicted and measured signals especially in higher prediction horizons (PHs).

Methods: Sensor glucose (G), insulin pump (I), food intake (CHO), and physical activity (PA) data from six individuals with T1D under SAP were used (age: 22–29 years; $HbA_{1c}$: 6.83 ± 0.75 %; body mass index: 24.79 ± 4.71 kg/m²). The data provided input to a computational framework composed by two layers: Prediction and correction. The prediction layer involves two data-driven models (corrected ARX model – cARX; Recurrent Neural Network trained by Unscented Kalman filter – uRNN). All models are online adaptive and can be personalized to each individual with T1D. The outputs of all models are corrected by an extreme learning machine (ELM) constituting the correction layer. The different models were evaluated on the basis of root mean square error (RMSE) and TL between predicted and real signals for PH = 15, 30 and 45 minutes.

Results: The results indicate that the use of lifestyle information (CHO and PA) along with data from the SAP therapy improves the glucose predictions especially in terms of TL and in the case of increased PH. Furthermore, ELM independently of the used model, positively impacts the prediction accuracy and reduces the TL for all the PHs. Finally, the cARX model fed with lifestyle and SAP data, along with an ELM, achieved lower TL over all the examined models and for all PHs with mean RMSE values of 9.4 (1.52) mg/dl and mean TL of 4.2 (2.04) min for PH = 15 min, 19.2 (5.02) mg/dl and 10 (3.16) min for PH = 30 min and 23.4 (5.20) mg/dl and 9.2 (5.85) min for PH = 45 min.

Conclusion: The finding of the presented work needs to be confirmed in a larger dataset. The best performing setup will be integrated to a system for alarm generation whenever a hypoglycaemic event is predicted.

## P 6

### Impact of OADs on hypoglycaemia frequency during titration with insulin glargine 100 units/ml (Gla-100) in type 2 diabetes (T2D)

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Background/Introduction: Hypoglycaemia during insulin initiation and intensification can be a barrier to dose optimization and achievement of glycemic control targets.

Methods: This post-hoc subject-level analysis examined standardized data from 16 RCTs (FPG target ≤ 100 mg/dl, ≥ 24 weeks duration) adding Gla-100 to OADs in people with T2D. The impact of metformin (MET), sulphonylurea (SU), or MET + SU on overall hypoglycaemia frequency (confirmed PG < 70 mg/dl or assistance required) stratified according to 0, 1–3, 4–6, or > 6 events during insulin dose titration from weeks 0–8 was assessed; efficacy and insulin dose change at week 24 were also examined.

Results: Data from 3 153 people receiving either MET (n = 623), SU (n = 906), or MET + SU (n = 1 624) in combination with Gla-100 for 24 weeks were analyzed. The concomitant OAD to which Gla-100 is added has a differential effect on $HbA_{1c}$ reduction. MET-treated subjects had the shortest diabetes duration and highest baseline BMI; the longest diabetes duration and lowest BMI were seen in the SU-only treated group (Table). In all OAD subgroups the majority experienced ≤ 3 hypoglycaemic events during titration. The frequency of hypoglycaemia was inversely related to the baseline BMI in all but the MET + SU-treated group with > 6 events. The adjusted insulin dose change from baseline was lowest in those with more hypoglycaemic events, irrespective of OAD treatment.

Conclusion: In people with T2D, OADs co-administered with basal insulin therapy influence efficacy outcomes and overall hypoglycaemia risk during the early period of insulin dose titration.

Data were presented at ADA 2016, Saturday, June 10–14, 2016, New Orleans, Louisiana

| Parameter | Glargine + OAD subgroup | Frequency of hypoglycaemic events (PG < 70 mg/dl) during titration (week 0–8) | | | |
|---|---|---|---|---|---|
| | | 0 | 1–3 | 4–6 | > 6 |
| Number of people, N (%) | MET<br>MET + SU<br>SU | 535 (85.9)<br>1 047 (64.5)<br>683 (75.4) | 75 (12.0)<br>421 (25.9)<br>168 (18.5) | 6 (1.0)<br>100 (6.2)<br>35 (3.9) | 7 (1.1)<br>56 (3.4)<br>20 (2.2) |
| Duration of diabetes, years | MET<br>MET + SU<br>SU | 6.9 (5.3)<br>9.2 (6.0)<br>9.5 (6.6) | 9.1 (6.9)<br>9.8 (6.3)<br>9.6 (6.8) | 11.4 (8.8)<br>10.0 (6.4)<br>10.2 ( 6.6) | 11.5 (6.9)<br>10.6 (8.4)<br>8.0 (5.2) |
| Baseline BMI, kg/m² | MET<br>MET + SU<br>SU | 31.8 ( 5.7)<br>31.4 (5.0)<br>29.6 (5.2) | 29.3 (4.9)<br>30.4 (4.8)<br>27.7 (4.6) | 27.6 (5.0)<br>28.7 (4.4)<br>27.0 (3.9) | 26.0 (4.4)<br>29.7 (4.5)<br>25.9 (4.1) |
| Baseline FPG, mg/dl | MET<br>MET + SU<br>SU | 187 (54)<br>192 (52)<br>202 (57) | 177 (53)<br>180 (48)<br>206 (58) | 152 (28)<br>176 (63)<br>222 (66) | 178 (49)<br>163 (41)<br>242 (59) |
| Baseline $HbA_{1c}$, % | MET<br>MET + SU<br>SU | 8.7 (1.1)<br>8.7 (1.0)<br>9.0 (1.1) | 8.4 (1.0)<br>8.4 (0.9)<br>8.9 (1.0) | 8.5 (0.8)<br>8.4 (0.9)<br>9.1 (1.1) | 9.0 (1.0)<br>8.2 (0.8)<br>9.3 (0.7) |
| $HbA_{1c}$ change from baseline to week 24, % | MET<br>MET + SU<br>SU | –1.7 (1.2)<br>–1.5 (1.1)<br>–1.4 (1.2) | –1.6 (1.3)<br>–1.5 (1.0)<br>–1.5 ( 1.3) | –1.1 (1.0)<br>–1.4 (1.0)<br>–1.6 (1.2) | –1.4 (1.5)<br>–1.4 (0.8)<br>–2.1 (1.1) |
| Insulin dose change from baseline to week 24, U/kg | MET<br>MET + SU<br>SU | 0.37 (0.28)<br>0.31 (0.26)<br>0.26 (0.22) | 0.20 (0.19)<br>0.20 (0.19)<br>0.16 (0.19) | 0.08 (0.06)<br>0.16 (0.15)<br>0.02 (0.15) | 0.07 (0.09)<br>0.08 (0.13)<br>-0.01 (0.17) |

Data presented represent mean (SD) unless otherwise specified; SD; standard deviation, SE: standard error

**P 6, Tab.: Patient characteristics stratified by frequency of hypoglycaemic events and concomitant OAD during Gla-100 titration.**

## P 7

### Comparable effects of high-intensity interval training and detraining on physical capacity and pulmonary function in obese glucose-tolerant persons and patients with type 2 diabetes

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Background/Introduction: Observational studies have shown that type 2 diabetes (T2D) is associated with reduced pulmonary function. Moreover, interventional studies have shown that exercise can improve lung function in patients with T2D. The present study tests the hypothesis that low-volume high-intensity interval training (HIIT), as an effective and time-efficient alternative to conventional exercise programs, improves physical capacity and pulmonary performance in T2D.

Methods: Twelve sedentary male volunteers with T2D (age: 57 ± 5 years, body mass index (BMI): 31.6 ± 2.2 kg/m², known diabetes duration: 6 ± 2 years, $HbA_{1c}$: 55.0 ± 10.5 mmol/mol) and 5 sedentary male glucose-tolerant controls (CON) (age: 55 ± 2 years, BMI: 30.7 ± 2.3 kg/m², $HbA_{1c}$: 36.0 ± 2.4 mmol/mol) underwent a 12-week HIIT using bicycle ergometers with a subsequent 4-weeks detraining period. Both groups did not differ in age, sex and BMI. Physical capacity was assessed from oxygen consumption at maximum ($VO_{2max}$), peak oxygen pulse (CO) and maximum performance ($Watt_{max}$). Lung function was assessed by determining forced vital capacity (FVC), forced expiratory volume in one second ($FEV_1$), maximum ventilation (VE), and breathing frequency (BF).

Results: Compared to CON, patients with T2D showed no difference in parameters of physical capacity (e.g. $VO_{2max}$ or $Watt_{max}$) and lung function (e.g. $FEV_1$ or FVC) at baseline, except for a reduced VE ($P < 0.05$). After 12 weeks of HIIT, patients with T2D increased their lung function (FVC (+0.47 ± 0.36 l), $FEV_1$ (+0.27 ± 0.19 l), VE (+19 ± 17 l/min) and BF (+8 ± 6/min), all $P < 0.01$) and physical capacity ($VO_{2max}$ (+4.4 ± 1.8 ml/min/kg), $Watt_{max}$ (+35 ± 11 W) and CO (+2.5 ± 2.5 ml/beat), all $P < 0.01$), but showed no altered training response compared to CON. Four weeks of training pause showed no difference of detraining effect in parameters of physical capacity and lung function between CON and patients with T2D.

Conclusion: In conclusion, 12-weeks HIIT improves physical and pulmonary performance in T2D and these changes show no difference compared to CON, even after 4 weeks of detraining.

## P 8

### In conclusion, 12-weeks HIIT improves physical and pulmonary performance in T2D and these changes show no difference compared to CON, even after 4 weeks of detraining

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Background/Introduction: Wasting is associated with increased adiponectin (ADN), an anti-inflammatory, insulin-sensitizing adipokine. Cystic fibrosis (CF) is a multi-organ disease characterized by inflammation, wasting and impaired insulin production. We assessed ADN and its high molecular weight (HMW) multimer form, and we measured venous plasma glucose (PG), serum insulin and free fatty acids (FFA) during an oral glucose tolerance test (oGTT) in patients with CF suffering from end stage lung disease.

Methods: Over 10 years, consecutive CF patients were included and had evaluation with regard to lung transplantation. Patients (unless known for previous fasting PG (FPG) ≥ 7 mM or insulin treatment, or on corticosteroids) and a control group of healthy subjects underwent an oGTT, and the insulinogenic index (IGI) was calculated as proposed by Wareham. Whole body and especially adipose tissue insulin sensitivity was estimated by calculating insulin resistance/sensitivity indices as proposed by Matthews ($HOMA_1$-IR), Matsuda and DeFronzo ($ISI_{comp}$) and by Belfiore ($ISI_{fat}$). ADN and its HMW form were measured by EIA, insulin by RIA, and FFA by a colorimetric assay. Data are expressed as mean ± SD.

Results: oGTT was performed in 47 CF patients (22 male; age 26 ± 9 y) and 34 controls (19 male; age 31 ± 10 y). CF patients had lower BMI (18.6 ± 3.5 kg/m²) than the controls (23.5 ± 4.4 kg/m²). FPG, $HOMA_1$-IR and $ISI_{comp}$ were similar in patients and in controls. IGI was lower and the 2hPG was higher in CF patients than in controls (18.6 ± 12.3 vs. 62.2 ± 39.2 pM/mM; 10.1 ± 4.5 vs. 6.0 ± 1.3 mM). During oGTT, FFA decreased from 0.59 ± 0.32 (fasting) to 0.13 ± 0.09 mM (after 2 h) in CF patients and from 0.60 ± 0.44 to 0.12 ± 0.10 mM in controls. $ISI_{fat}$ was 1.04 ± 0.27 in CF patients and 1.00 ± 0.34 in controls. Total (and especially HMW-)ADN was higher in CF patients than in controls (10.4 ± 3.8 vs. 7.9 ± 3.5 mg/l; HMW% of total, 51±10 vs. 38±11). There was a positive correlation of total adiponectin and its HMW form ($p < 0.0001$).

Conclusion: ADN (particularly HMW-ADN) levels are higher in CF patients than in controls. Despite markedly impaired insulin secretion, FFA were suppressed to a similar extent in CF patients as in the controls. Residual insulin (in the face of apparently normal insulin sensitivity and in the context of increased energy expenditure) appears to be sufficient for maintaining FFA homeostasis in patients with CF.

ZENTRALEUROPÄISCHE DIABETESGESELLSCHAFT

Zentraleuropäische Diabetesgesellschaft
*Central European Diabetes Association*
Föderation der Internationalen Donau-Symposia über Diabetes mellitus
*Federation of International Danube-Symposia on Diabetes mellitus*

# Nachlese zum 31. Internationalen Donausymposium über Diabetes mellitus

## (11. Kongress der Zentraleuropäischen Diabetesgesellschaft)

Vom 30. Juni bis 2. Juli 2016 fand am Inselspital in Bern das diesjährige Donausymposium statt. Wer sich fragt, wieso gerade in Bern ein Donausymposium stattfinden solle, darf darauf verwiesen werden, dass vor Jahrmillionen die Aare, Wahrzeichen Berns, einer der Hauptzuflüsse der Donau war! Die Aare bildete nämlich im Laufe der geologischen Entwicklung nacheinander den Oberlauf der Donau, der Rhone und zuletzt des Rheins – wahrlich ein geeigneter Ort für einen zentraleuropäischen medizinischen Kongress. Das Inselspital bietet mit seinen modernen Räumlichkeiten und seiner exzellenten Gastronomie einen ausgezeichneten formalen Rahmen für die Tagung. Zudem sollten sich Diabetologen und Diabetologinnen per se an einem Inselspital wohlfühlen.

Zum diesjährigen Donausymposium konnten 200 Teilnehmer, worunter fast 50 Referenten waren, begrüßt werden. In zahlreichen Sitzungen und Symposien wurden den Teilnehmern ein breites wissenschaftliches Programm und Updates zu mehr klinischen Fragen geboten.

Der wissenschaftliche Teil der Tagung wurde mit einem Referat des letztjährigen Banting-Medaillenempfängers Philip Scherrer zum Thema „The role of the adipose tissue in diabetes and obesity“ eröffnet. Der Grenzbereich zwischen Diabetes, Adipositas und Stoffwechsel wurde auf faszinierende Weise ausgeleuchtet und blieb durch die weitere Tagung ein wichtiges und aus verschiedensten Blickwinkeln beleuchtetes Thema.

Eine mit der Schweizerischen Diabetes-Stiftung gemeinsam organisierte Sitzung thematisierte verschiedene Hot Topics der Diabetologie. Die in Zusammenarbeit mit der Schweizerischen Gesellschaft für Endokrinologie und Diabetologie durchgeführten klinisch ausgerichteten Sitzungen widmeten sich dem Diabetes im Rahmen anderer endokriner Erkrankungen sowie einem Diabetes-Update für Diabetesberater(innen).

Die Sitzung „From islets and transplantation to the artificial pancreas“ sollte zum einen mit „State of the art“-Vorträgen ein Update geben über die Fortschritte der letzten Jahre. Andererseits gab es Gelegenheit, einige wissenschaftliche Aktivitäten der Schweizer Professoren Giatgen A. Spinas und Peter Diem, welche beide in diesem Jahr emeritiert werden, Revue passieren zu lassen.

Speziell zu erwähnen sind auch die in Zusammenarbeit mit der Industrie durchgeführten Symposien, welche sich mit ausgezeichneten Referaten auf hochaktuelle Themen fokussierten und durchwegs ausgeglichen und neutral blieben, so dass die wissenschaftliche Unabhängigkeit auch in diesen Teilen der Tagung in höchstem Maße gewahrt blieb.

Wie bereits in früheren Jahren konnten die besten eingereichten wissenschaftlichen Arbeiten mit Preisen ausgezeichnet werden. Der erste Preis für Oral Presentations ging an Dominik Pesta, Düsseldorf, der zweite an Maren Dietrich, Zürich, und der dritte an Reinhard Holl, Ulm. Die Preise für die besten Posterpräsentationen gingen mit dem ersten Preis an Marie-Angela Schnyder, Zürich, mit dem zweiten an Christian Herder, Düsseldorf, und mit dem dritten an Martin Röhling, Düsseldorf. Die Preise sind wie folgt dotiert: 1. Preis: 500 Euro, 2. Preis: 2 Jahre freie Registration und 3. Preis: 1 freie Registration während der nächsten 4 Jahre.

Auch das Rahmenprogramm mit der Welcome Reception und einem Gala-Dinner auf dem Berner Hausberg Gurten trug wesentlich zum Gelingen des Symposiums bei. Während die Welcome Reception wegen der unsicheren Wetterlage noch in einen Innenraum verlegt werden musste – und den Teilnehmern der Blick vom Bettenhochhaus des Inselspitals (siehe Abb. 1) verwehrt blieb –, war der Wettergott am Folgetag gnädiger. So konnten die Teilnehmer die einzigartige Aussicht auf die Stadt Bern und das spektakuläre Alpenpanorama voll genießen.

Ein großer Dank geht an die Teilnehmer, die Referenten, die Mitglieder des Organisationskomitees, die unterstützende Industrie sowie die vielen Heinzelmännchen und -frauen vor Ort (Gastronomie, Hörsäle, Empfang), welche mit ihrer tatkräftigen Unterstützung dafür sorgten, dass das Symposium durchwegs reibungslos ablaufen konnte.

*Prof. Dr. Peter Diem*
*Tagungspräsident*