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Welcome

Dear Friends,

We are very happy to be hosting once again the **International Primary Care Diabetes Europe Conference**. Barcelona is a city where people are the priority and where government leaders work shoulder to shoulder with citizens to assure a high quality of life. In our area, quality clinical care is as important as a sustained effort of prevention and promotion of healthy values, in which we seek to achieve the maximum involvement of society. We believe that the slogan "Health in all policies" expresses a real possibility – that health can reach all areas of life and every corner of the city, every milieu and every age group. In a special way, we stand by people who live with diabetes and we like to focus attention on this at events such as World Diabetes Day, November 14th, when we meet with the organisations and professionals in this field and symbolically light up the façade of our City Hall.

Working for health is a privilege that we share, especially because every day we are at people's side, dealing with individuals. This is especially true in primary care, where it should be emphasised that we study and attend to patients and the community and not just illnesses. This is why confronting diabetes from this first level of care is decisive in preventing and treating this disorder, in researching and socializing our findings and in the knowledge we acquire.

In Europe today, we look upon diabetes as a health condition that can be successfully controlled and one in which the search for new therapies and the effort to achieve improved levels of diagnosis of our people are priorities. What's more, we share the specific goal proposed to us by the organisers of the Conference: to work harder for better education on the multimorbidity associated with this disorder and for better hypoglycaemic control. This is something that we have to achieve between us all.

Please let me point out that Barcelona is an unquestioned leader in southern Europe in the field of biomedical research and that our city strives for excellence in health care. Innovation in the life sciences, the support of the international benchmark health institutions which we host, and the ongoing improvement of health promotion are aspects to which we attach fundamental importance. We have an essential strength in this respect: the involvement of our people in the fight against the most prevalent chronic disorders, such as diabetes. For this reason the messages from an international conference like this one and the communication of new findings are always a subject of the greatest interest here, reaching the attention of a worldwide audience.

I truly hope that these lines have succeeded in conveying Barcelona's sincere support and acknowledgement of this event, and that once more the Primary Care Diabetes Europe Conference will be an outstanding scientific and social success.

Cristina Iniesta
Delegate for Health, Barcelona City Council

Dear Colleagues,

It is a pleasure to welcome you to the **XIII International Primary Care Diabetes Europe Conference** 2014 to be held in Barcelona.

The number of people with type 2 diabetes is increasing in every country in the world. Most recent estimates indicate that by the end of year 2013, 382 million people had diabetes worldwide, 46% of them undiagnosed, and the number is expected to rise to 592 million in 2035. In Europe, 56 million citizens now have diabetes, and by 2035 about 69 million Europeans will be afflicted by the disease, a 22% increase. Even in Europe, 36% of cases of type 2 diabetes remain currently undiagnosed. In Catalonia, the prevalence of diagnosed diabetes is 7.64% in people over 30, and above 20% in the over 70s, representing a major challenge to our national health system.

The personal, social and economic costs of diabetes and its associated complications are overwhelming. Prevention, early diagnosis, and immediate appropriate treatment of the disease are essential steps in the fight against diabetes. The role of primary care in all these aspects cannot be overemphasized. The International PCDE Conference provides an excellent environment and opportunity to further advance in the promotion of diabetes education and research in primary care and to incorporate the most recent findings into current practice, thereby making an overall contributing to increasing the standards of care for people with diabetes which are key aspects of the PCDE mission. I hope that the XIII International PCDE Conference will fulfil these high expectations, and I wish you a very successful meeting in Barcelona.

Eduard Montanya
President of the Advisory Committee on Diabetes
Department of Health, Catalan Government

Dear Participants,

We are delighted to welcome you to the **XIII International Primary Care Diabetes Europe Conference** which we are holding again here in Barcelona, on 23rd and 24th May 2014.

As a leading pan-European platform for primary care in diabetes, Primary Care Diabetes Europe (PCDE) sees its role in expanding educational activities as increasingly important, particularly now that primary care is supposed to take more and more responsibility in the global burden of (type 2) diabetes from a multidisciplinary approach.

From this perspective, and as PCDE chairman, I can share with you my pride that, building on the success of our 2012 meeting, we have succeeded in again organising a full, stand-alone, two-day conference with delegates from all over Europe in this beautiful city of Barcelona.

Thanks to your growing interest we can offer you valuable lectures by leading authorities in diabetes. You are invited to present your own research outcomes in poster presentations and discuss the results with your international colleagues (during the Poster Walk). Additionally, we offer some interactive workshops on important care-related topics, such as empowerment and self-monitoring of blood glucose for improving your daily practice.

Thanks to the hard work of the whole organising team, it is an honour to announce the EACCME European Accreditation to this conference for up to 9 CME credits.

During this conference, the 5th Paul Cromme award will be handed to Professor Emeritus Jaakko Tuomilehto, editor-in-chief of our highly valued journal *Primary Care Diabetes*, which was recently awarded a first citation index of 1,609.

Thanks to our valued sponsors, we can offer you two additional satellite symposia, as an extension to the conference, both of them focussing on the specific needs of those people living with diabetes and new therapeutic options which aim to overcome the existing barriers to treatment.

It is the PCDE's ambition to increase the number of attendees in the coming years and to extend its scope to other conferences, such as EASD and WONCA-Europe, so that it can accomplish its important mission: to focus on the undeniable role of primary care in addressing the growing burden of (type 2) diabetes.

As a primary health care professional involved in the management of people living with diabetes, this conference is an educational programme you cannot miss.

We hope you will enjoy it.

On behalf of the scientific and organising committees,

Johan Wens
Chair of PCDE

Committees and Speakers

Organizing Committee

Chair:
Johan Wens - *Chair PCDE*

Members:
Xavier Cos - *Vice Chair PCDE*
Pinar Topsever

Host Organizing Committee

Chair:
Xavier Cos

Scientific Committee

Chair:
Pinar Topsever

Members:
Xavier Cos
Martin Hadley-Brown
Luc Martinez
Guusje Neijens
Imre Rurik
Johan Wens

Chairs and speakers

Hilde **Bastiaens**	–	*Department of Primary and Interdisciplinary Care of the Antwerp University*
Belén **Benito**	–	*Primary Health Care Diabetes Study Group (GEDAPS)-redGDPS / Primary Care Group of Spanish Society of Diabetes (SED)*
Laura **Brugnara**	–	*CIBERDEM/IDIBAPS - Hospital Clínic, Barcelona*
Carmen **Cabezas**	–	*Program of Preventive Activities and Health Promotion (PAPPS) of the Spanish Society of Family and Community Medicine (semFYC)*
Xavier **Cos**	–	*Primary Health Care Diabetes Study Group (GEDAPS)-redGDPS / Primary Care Diabetes Europe (PCDE) / Primary Care Study Group of the European Association for the Study of Diabetes (EASD)*
Martin **Hadley-Brown**	–	*Primary Care Diabetes Society (PCDS) / Primary Care Diabetes Europe (PCDE)*
Richard **Hobbs**	–	*European Primary Care Cardiovascular Society (EPCCS)*
Arno **Hoes**	–	*Julius Center for Health Sciences and Primary Care of the University Medical Center, Utrecht*
Eugene **Hughes**	–	*Primary Care Diabetes Europe (PCDE) in UK*
Carmen Ioana **Jarca**	–	*Catalan Society of Family and Community Medicine (CAMFiC)*
Kamlesh **Khunti**	–	*Primary Care Study Group of the European Association for the Study of Diabetes (EASD)*
Line **Kleinebreil**	–	*Primary Care Diabetes Europe (PCDE) / Société Francophone de Diabétologie (SFD) / European Association for the Study of Diabetes (EASD) / Diabetes Education Study Group (DESG)*
Luc **Martinez**	–	*French Society of General Medicine (SFMG) / Primary Care Diabetes Europe (PCDE)*
Manel **Mata**	–	*Primary Health Care Diabetes Study Group (GEDAPS)-redGDPS*
Guusje **Neijens**	–	*Dutch Federation of Diabetes Caregivers (EADV) / Primary Care Diabetes Europe (PCDE)*
Frans **Pouwer**	–	*Psychosocial Aspects of Diabetes (PSAD) / European Association for the Study of Diabetes (EASD)*
Daria **Roca**	–	*Diabetes Unit of Hospital Clínic, Barcelona*
Antonio **Rodríguez**	–	*Primary Health Care Diabetes Study Group (GEDAPS)-redGDPS*
Imre **Rurik**	–	*Primary Care Diabetes Europe (PCDE)*
Guy **Rutten**	–	*Primary Care Study Group of the European Association for the Study of Diabetes (EASD)*
Mehmet **Sargin**	–	*Turkish Family Medicine Foundation (TAHEV)*
Pinar **Topsever**	–	*Primary Care Diabetes Europe (PCDE) / Primary Care Study Group of the European Association for the Study of Diabetes (EASD)*
Jaakko **Tuomilehto**	–	*University of Helsinki, Finland*
Johan **Wens**	–	*Primary Care Diabetes Europe (PCDE) / Primary Care Study Group of the European Association for the Study of Diabetes (EASD)*

About PCDE

Primary Care Diabetes Europe (PCDE) exists to provide a focal point for primary care clinicians and their patients. Its purpose is to promote high standards of care for people living with diabetes throughout Europe. Emphasis is placed on incorporating evidence-based medicine into daily practice as well as promoting diabetes education and research in primary care.

PCDE was founded according to the objectives of the Saint Vincent Declaration (1989). A group of interested primary care physicians met in Athens (1995) and established a first meeting in Lisbon (1996), formalising accepted objectives, a constitution, an action plan and a chosen committee. From 2005 onwards, the association was recognised officially by Belgian law as an international non-profit organisation.

Individual membership is open to all professionals working in Primary Diabetes Care. Our current membership stands at about 4,200 members. Membership of the General Assembly is open to all professional members of PCDE by candidacy. As many countries as possible are encouraged to be represented in the General Assembly. The total number of executive committee members is limited to 12. The General Assembly votes for their representation on the Executive Committee.

Through successful activities and a leadership position in the field, PCDE has an interface role between primary and secondary diabetes care organisations regarding research, education, clinical practice and health care governance, aiming for a better quality of diabetes care in the community.

As such, PCDE has the unique opportunity of being the official **Diabetes Special Interest Group of WONCA-Europe**. PCDE also promoted the creation of a Primary Care Research Group with in European Association for the Study of Diabetes (EASD) which was accepted in 2007. These efforts resulted in PCDE's participation in different European research projects such as SWEET, CALLIOPE, IMAGE, DIAMAP, TRANSFORM and others...

To communicate scientific research results, PCDE launched its own research journal *Primary Care Diabetes* which is published by Elsevier and with Jaakko Tuomiletho as editor-in-chief. Only five years after publication of the first issue, the journal is now indexed in Pubmed, PsycInfo and Skopus. The journal was recently awarded a first citation index of 1,609.

In addition to its research activities, PCDE also impacts on European policy level in its **consultancy position** in different national and international organisations. The European Coalition for Diabetes (ECD) has been established since 2010, together with the Federation of European Nurses in Diabetes (FEND), the International Diabetes Federation (IDF) and EURADIA, the coordinating organisation of the EASD. The ECD now is in constant communication with different members of the European Parliament and various partners in the European Commission in charge of all aspects of health care governance and research.

Board members

Chair: Prof. Dr. Johan Wens

Vice Chair: Assoc. Prof. Dr. Xavier Cos

Boardmember Research Dept: Assoc. Prof. Dr. Pinar Topsever

Boardmember Treasurer: Mrs. Guusje Neijens

General Assembly Members: Prof. Imre Rurik
Dr. Luc Martinez
Dr. Martin Hadley-Brown

Operational Manager: Mrs. Ottilia Hoogeslag

More information is available on our websites

- PCDE Website: **http://www.pcdeurope.org**
- PCDE Conference site: **http://www.2014pcdeconference.org**
- Primary Care Diabetes Journal: **http://www.primary-care-diabetes.com**
- The online manuscript submission site for the journal is live at: **http://ees.elsevier.com/pcd/**
- Knowledge Resource Center: **http://www.pcd-glucose-homeostasis.com/**

CME Accreditation

The **XIII International Primary Care Diabetes Europe Conference** was granted **9** European CME credits (ECMEC) by the European Accreditation Council for Continuing Medical Education (EACCME).

European accreditation

European Accreditation is granted by the EACCME in order to allow participants who attend the above-mentioned activity to validate their credits in their own country.

Accreditation statement

The *XIII International Primary Care Diabetes Europe Conference* is accredited by the EACCME to provide the following CME activity for medical specialists. The EACCME is an institution of the European Union of Medical Specialists (UEMS), www.uems.net.

The *XIII International Primary Care Diabetes Europe Conference* is designated for a maximum of 9 hours of European external CME credits. Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity.

Through an agreement between the UEMS and the American Medical Association (AMA), physicians may convert EACCME credits to an equivalent number of AMA PRA Category 1 Credits™. Information on the process to convert EACCME credit to AMA credit can be found at www.ama-assn.org/go/internationalcme.

Live educational activities, occurring outside of Canada, recognized by the UEMS-EACCME for ECMEC credits are deemed to be Accredited Group Learning Activities (Section 1) as defined by the Maintenance of Certification Program of The Royal College of Physicians and Surgeons of Canada.

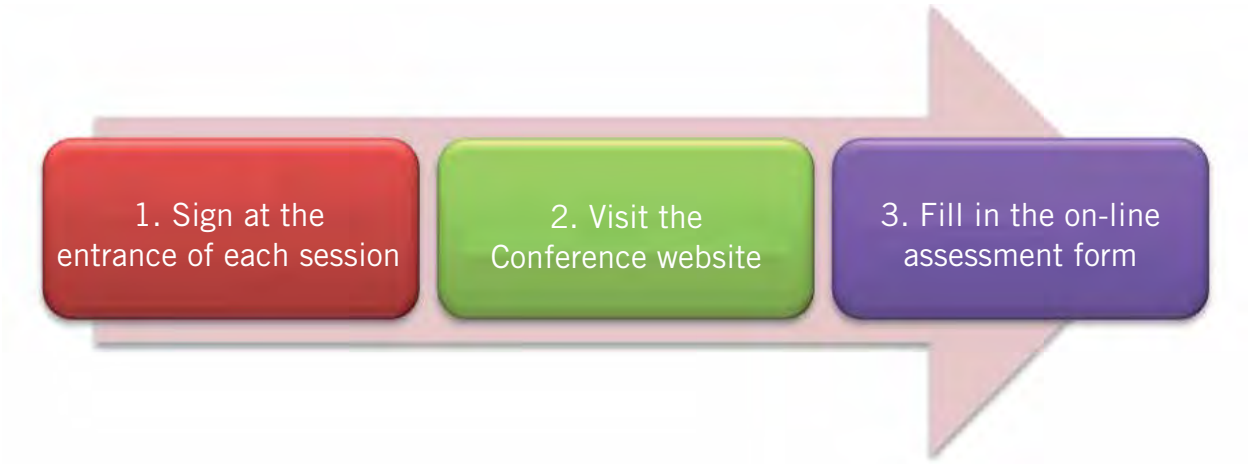
EACCME credits

Each medical specialist should claim only those hours of credit that he/she actually spent in the educational activity. The EACCME credit system is based on one ECMEC per hour with a maximum of three ECMECs for half a day and six ECMECs for a full-day event.

Spanish accreditation

The *XIII International Primary Care Diabetes Europe Conference* is accredited by the Catalan Board for the Ongoing Training of Healthcare Professions (CCFCPS) with 1,5 CME credits (11 hours). A minimum of 80% of attendance to the whole conference will be required to obtain the CFC credits and the certificate.

Process to obtain EACCME accreditation



When do I have to sign?

TIME	PLENARY MEETING ROOM (MR 09)
08.00 - 09.00 h	
09.00 - 09.15 h	Welcome address
09.15 - 10.15 h	SESSION 1 - Type 2 Diabetes Management (Guy Rutten, Manel Mata)
10.15 - 10.45 h	
10.45 - 11.30 h	SESSION 2 - Social Media, Internet 2.0 (Line Kleinebreil, Belén Benito)
11.30 - 13.00 h	SESSION 3 - Multimorbidity (Manel Mata, Frans Pouwer, Arno Hoes, Carmen Ioana Jarca, Mehmet Sargin)
13.00 - 14.30 h	
14.30 - 15.15 h	SESSION 4 - Debate pro Vs con - PRO sulphonylurea (Kamlesh Khunti, Martin Hadley-Brown)
15.15 - 16.30 h	SESSION 5 - Kidney (Imre Rurik, Xavier Cos, Antonio Rodriguez)
16.30 - 17.00 h	SESSION 6 - P.Cromme Lecture

Block 1

Block 2

Block 3

Delegate	Passport nr.	BLOCK 1 09.00 - 10.15h	BLOCK 2 10.15 - 13.00h	BLOCK 3 14.30 - 17.00h
Cahill, Richard	845220019			
Campbell, Susan	755469215			
Castillo, Eduardo	16025478G			
Castle, Henry	245663300			
Castro, Amparo	77053699X			

Fill in the form at:

http://www.2014pcdeconference.org

Daily Planner

FRIDAY, 23 May

TIME	PLENARY MEETING ROOM (MR 09)	WORKSHOPS' MEETING ROOM (MR 06)	SYMPOSIUMS MEETING ROOMS (MR 07 + 08 / MR 10)
08.00 - 09.00 h	**REGISTRATION**		
09.00 - 09.15 h	**WELCOME ADDRESS**		
09.15 - 10.15 h	**SESSION 1** **Type 2 diabetes management** *(Guy Rutten, Manel Mata)*		
10.15 - 10.45 h	**Coffee break & poster walk 1**		
10.45 - 11.30 h	**SESSION 2** **Social media, internet 2.0** *(Line Kleinebreil, Belén Benito)*		
11.30 - 13.00 h	**SESSION 3** **Multimorbidity** *(Frans Pouwer, Manel Mata, Carmen Ioana Jarca, Mehmet Sargin, Arno Hoes)*	**WORKSHOP 1** **Communication skills** *(Hilde Bastiaens)*	
13.00 - 14.30 h	**Lunch**		**LILLY LUNCH SATELLITE SYMPOSIUM** Advances in type 2 diabetes management: one-weekly GLP-1 receptor agonists for optimal patient care (MR 07 + 08)
14.30 - 15.15 h	**SESSION 4** **Debate pro Vs con - PRO sulphonylurea** *(Kamlesh Khunti, Martin Hadley-Brown)*		
15.15 - 16.30 h	**SESSION 5** **Kidney** *(Imre Rurik, Xavier Cos, Antonio Rodríguez)*	**WORKSHOP 2** **Self-monitoring blood glucose** *(Guusje Neijens, Daria Roca)*	
16.30 - 17.00 h	**SESSION 6. 5th Paul Cromme Lecture. Strategy and practice of diabetes prevention in the community** *(Jaakko Tuomilehto)*		
17.00 - 20.00 h			**NOVO NORDISK SATELLITE SYMPOSIUM** Advances in diabetes treatment initiation and intensification – a clinical perspective (MR 10)

SATURDAY, 24 May

TIME	PLENARY MEETING ROOM (MR 09)
09.00 - 10.30 h	**SESSION 7** **Rising star lecture** *(Grigory Sidorenkov)* **Oral presentation of the five best posters**
10.30 - 11.00 h	**Coffee break & poster walk 2**
11.00 - 12.30 h	**SESSION 8** **Cardiometabolic challenges** *(Richard Hobbs, Carmen Cabezas, Laura Brugnara, Arno Hoes)*
12.30 - 13.15 h	**SESSION 9** **New drugs** *(Luc Martinez, Eugene Hughes)*
13.15 - 13.30 h	**CLOSING CEREMONY**
13.30 - 14.00 h	**Reception (Informal drink and "tapas")**

Scientific Programme

FRIDAY, 23 MAY

08.00 - 09.00 h **REGISTRATION**

09.00 - 09.15 h **WELCOME ADDRESS**
Cristina Iniesta (Barcelona City Council)
Johan Wens (Chairman PCDE)
Xavier Cos (Vice Chairman PCDE)

09.15 - 10.15 h **SESSION 1. Type 2 diabetes management** (p. 14)
Chairs: *Xavier Diez and Luc Martinez*

- Evidence based treatment of hyperglycaemia: from the ADA/EASD statement to a concrete treatment algorithm
  Guy Rutten (Netherlands)
- Combination therapy
  Manel Mata (Spain)

10.15 - 10.45 h ***Coffee break and poster walk 1***

10.45 - 11.30 h **SESSION 2. Social media, internet 2.0** (p. 15)
Chairs: *Xavier Diez and Luc Martinez*

- Social media, internet 2.0
  Line Kleinebreil (France)
- Internet and social media in diabetes
  Belén Benito (Spain)

11.30 - 13.00 h **SESSION 3. Multimorbidity** (p. 17)
Chairs: *Xavier Diez and Luc Martinez*

- Type 2 diabetes and mental health
  Frans Pouwer (Netherlands)
- Cancer and diabetes
  Manel Mata (Spain)
- Type 2 diabetes and syndemia
  Carmen Ioana Jarca (Romania)
- Diabetes and chronic osteoarthritis
  Mehmet Sargin (Turkey)
- Diabetes and hypertension: are blood pressure target levels evidence-based?
  Arno Hoes (Netherlands)

WORKSHOP 1. Communication skills - Communication with people living with diabetes: attention points for health care providers (p. 24)
Hilde Bastiaens (Belgium)

13.00 - 14.30 h ***Lunch***

14.30 - 15.15 h **SESSION 4. Debate pro Vs con - PRO sulphonylurea** (p. 20)
Chairs: *Eugene Hughes and Xavier Mundet*

DEBATE: Clinical controversy. What next after metformin: sulphonylureas or DPP-4 inhibitors?
Kamlesh Khunti (UK) *and Martin Hadley-Brown* (UK)

15.15 - 16.30 h **SESSION 5. Kidney** (p. 21)
Chairs: *Eugene Hughes and Xavier Mundet*

- Diagnosis and follow-up of diabetic patients in the primary care. Available methods, practices and regulations in Europe
  Imre Rurik (Hungary)
- Drug interaction in kidney failure
  Imre Rurik (Hungary)

- Diabetic nephropathy/chronic renal disease in type 2 diabetes
  Xavier Cos (Spain) *and Antonio Rodríguez* (Spain)

WORKSHOP 2. Self-monitoring blood glucose in primary care (p. 24)
Guusje Neijens (Netherlands) *and Daria Roca* (Spain)

16.30 - 17.00 h **SESSION 6. 5th Paul Cromme Lecture. Strategy and practice of diabetes prevention in the community** (p. 23)
Chair: *Johan Wens*
Speaker: *Jaakko Tuomilehto* (Finland)

SATURDAY, 24 MAY

09.00 - 10.30 h **SESSION 7. Rising star lecture and oral presentation of the five best posters**
Chairs: *Pinar Topsever and Xavier Cos*

- **Rising star lecture. Which quality indicators are valid tools for measuring treatment quality in patients with diabetes?** (p. 25)
  Grigory Sidorenkov (Netherlands)
- **Oral presentation of the five best posters** (p. 26)
  The five best abstracts selected from the abstracts accepted by the Scientific Committee of the Conference will be presented orally in this session (5 minutes per abstract).

10.30 - 11.00 h ***Coffee break and poster walk 2***

11.00 - 12.30 h **SESSION 8. Cardiometabolic challenges** (p. 26)
Chairs: *Sara Artola and Imre Rurik*

- Update on lipids and hypertension
  Richard Hobbs (UK)
- Diabetes and smoking
  Carmen Cabezas (Spain)
- Physical activity
  Laura Brugnara (Brazil)
- Heart failure in diabetes
  Arno Hoes (Netherlands)

12.30 - 13.15 h **SESSION 9. New drugs** (p. 30)
Chairs: *Sara Artola and Imre Rurik*

- Safety issues
  Eugene Hughes (UK)
- Efficiency of new antidiabetic agents
  Luc Martinez (France)

13.15 - 13.30 h **CLOSING CEREMONY**

13.30 - 14.00 h ***Reception (informal drink and "tapas")***

Satellite Symposiums

FRIDAY, 23 MAY

13.00 - 14.30 h **LILLY LUNCH SATELLITE SYMPOSIUM. Advances in type 2 diabetes management: once-weekly GLP-1 receptor agonists for optimal patient care** (p. 33)

17.00 - 20.00 h **NOVO NORDISK SATELLITE SYMPOSIUM. Advances in diabetes treatment initiation and intensification – a clinical perspective** (p. 33)

Lecture Summaries

FRIDAY, 23 MAY

■ SESSION 1. TYPE 2 DIABETES MANAGEMENT

Time 09.15 - 10.15
Room MR 09

Lectures:

- **Evidence based treatment of hyperglycaemia: from the ADA/EASD statement to a concrete treatment algorithm**
  Guy Rutten
- **Combination therapy**
  Manel Mata

Evidence based treatment of hyperglycaemia: from the ADA/EASD statement to a concrete treatment algorithm

Speaker

Guy Rutten is professor of diabetology in primary care and director of the training-course for executives in diabetology in primary care at the University Medical Centre Utrecht, Julius Centre Division, Department of General Practice. His research activities focus on screening for diabetes, diabetes and cardiovascular complications and diabetes primary care. He is (co-)author of more than 250 original articles in (inter)national peer reviewed journals and supervised or is supervising 12 RCTs on type 2 diabetes in primary care. He is one of the principal investigators of the ADDITION study. He has also written several books on type 2 diabetes and general practice topics as well. He has been chairing the Dutch General Practice Advisory Group since 1996 and was founder and chair of the EASD Primary Care Study Group from 2006 to 2011. From 2004-2010 he was member of the Scientific Advisory Board of the Dutch Diabetes Research Foundation. He was the first editor-in-chief of *Primary Care Diabetes*. Guy Rutten started working as a general practice in a group practice in 1982. Until now he has continued working as a GP in his practice for two days a week.

Summary

In 2013 the Dutch College of General Practitioners launched its updated guidelines on type 2 Diabetes. Former versions of the guidelines were published in 1989, 1999, and 2006. Taking into account all landmark trials, cohort studies and systematic reviews published between 2006 and 2013, the Dutch college makes explicit choices with regard to treatment targets and medications to be recommended, beyond the EASD/ADA statement on individualised care. These Dutch guidelines will be presented and discussed.

Combination therapy

Speaker

Manel Mata is a family and community medicine specialist and has been working as a general practitioner at La Mina Primary Health Care Centre, Barcelona (Spain) since 1984. He has been tutoring residents in the Family and Community Teaching Unit of Barcelona since 1987.

He was one of the founders of the Primary Health Care Diabetes Study Group (GedapS) in 1992. It is a working group within the Catalan Society of Family and Community Medicine (CAMFiC) of which Dr Mata was chairman from 2009 to 2013. The group promoted several quality-improvement evaluations of diabetes care in primary care from 1993 to 2007. Dr Mata is also a member of the Barcelona Ciutat Research Support Unit – Jordi Gol Primary Care Research Institute (IDIAP), and the research group on diabetes quality of care through the analysis of the Information System for the Development of Research in Primary Care (SIDIAP) database of electronic medical records of all patients cared for by the Catalan Health Institute (ICS).

Dr Mata has participated in several consensus documents on the management and treatment of type 2 diabetes mellitus in Spain. He was the primary care representative on several advisory boards on diabetes for the Spanish Ministry of Health from 1993 to

1996 and for the Catalan Autonomous Government from 2000 to 2006. He is currently vice-chair of the Catalan Diabetes Association and member of the board of the Spanish Diabetes Society.

Dr Mata is also one of the current editors of the Spanish GedapS *Clinical Guidelines for the Management of Type 2 Diabetes in Primary Care* (last edition, the 5th, 2010). He has written several articles and editorials on diabetes in national and international journals, has been the reviewer of manuscripts for a number of scientific journals, and lectures widely on type 2 diabetes-related topics, mainly in terms of its pharmacological treatment.

Summary

Type 2 diabetes mellitus is an increasingly common medical problem for primary care clinicians to address. Obtaining the suggested glycemic control is the most important achievement in order to prevent chronic complications in patients with type 2 diabetes. Since HbA1c reductions provide meaningful risk reduction as well as improved quality of life, it is worthwhile exploring evolving paths for more efficient use of the currently available pharmacotherapies. Because diabetes is a progressive disease, even transiently successful treatment will likely require augmentation as the disorder progresses[1]. Monotherapy often fails after a period of treatment and multiple drugs with complementary mechanisms of action will be necessary to achieve glycemic goals. Hence, clinicians need to be well informed about the various noninsulin alternatives that have been shown to be successful in glycemic goal attainment.

A number of oral glucose-lowering drugs is now available such as metformin, sulfonylureas, non-sulfonylurea secretagogues (metiglinides), alpha-glucosidase inhibitors, thiazolidinediones (TZD), and the newest agents: dipeptidil peptidase-4 (DPP4) inhibitors[2,3,4], GLP-1 receptor agonists[4,5] and sodium glucose cotransporter-2 (SGLT2) inhibitors[6]. The possible associations of oral glucose- lowering drugs for optimal treatment of type 2 diabetes are reviewed trying to individualize the treatment according to patient clinical characteristics. Limitations of current therapies, suggestions for appropriate combination therapies of the newest agents, and the possible adverse effects derived from the association of different drug classes are also considered. As these agents emerge, clinicians must weigh the risk-benefit of these drugs in deciding which patient types are most likely to benefit from their novel mechanism of action.

References sodium glucose cotransporter inhibitors

1. Inzucchi SE, et al. "Management of Hyperglycemia in Type 2 Diabetes: A Patient-Centered Approach: Position Statement of the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)". *Diabetes Care*. 2012; 35(6):1364-79. Epub 2012 Apr 19. Erratum in: *Diabetes Care*. 2013; 36(2):490.
2. Karagiannis T, Paschos P, Paletas K, Matthews DR, Tsapas A. "Dipeptidyl peptidase-4 inhibitors for treatment of type 2 diabetes mellitus in the clinical setting: systematic review and meta-analysis". *BMJ*. 2012; 344:e1369. doi: 10.1136/bmj.e1369
3. Monami M el al. "Dipeptidyl peptidase-4 inhibitors and cardiovascular risk: a meta-analysis of randomized clinical trials". *Diabetes Obes Metab*. 2013; 15(2):112-20.
4. Deacon CF, Mannucci E, Ahrén B. "Glycaemic efficacy of glucagon-like peptide-1 receptor agonists and dipeptidyl peptidase-4 inhibitors as add-on therapy to metformin in subjects with type 2 diabetes-a review and meta analysis". *Diabetes Obes Metab*. 2012; 14(8):762-7.
5. Shyangdan DS, Royle P, Clar C, Sharma P, Waugh N, Snaith A. "Glucagon-like peptide analogues for type 2 diabetes mellitus". *Cochrane Database Syst Rev*. 2011 Oct 5;(10):CD006423
6. Vasilakou D, Karagiannis T, Athanasiadou E, Mainou M, Liakos A, Bekiari E, Sarigianni M, Matthews DR, Tsapas A. "Sodium-glucose cotransporter 2 inhibitors for type 2 diabetes: a systematic review and meta-analysis". *Ann Intern Med*. 2013; 159(4):262-74.

■ SESSION 2. SOCIAL MEDIA, INTERNET 2.0

Time 10.45 - 11.30
Room MR 09

Lectures:

1. **Social media, internet 2.0**
   Line Kleinebreil

2. **Internet and social media in diabetes**
   Belén Benito

Social media, internet 2.0

Speaker

After qualifying at Paris V University in mathematics, **Line Kleinebreil** graduated as a general practitioner from Paris XIII University. She worked for 30 years as a clinician in different multi-cultural areas in Paris suburbs and, in parallel, part time at Paris Assistance Publique university hospitals where she has been involved in many European research projects. In 2000 she joined the Georges Pompidou European Hospital where she developed the telemedicine and distance-learning department. Since 2008 she has been the vice-president of Université Numérique Francophone Mondiale (UNFM) where she initiated the e-diabetes program, a post graduate distance-training program for developing countries on diabetes and chronic diseases.

Her major clinical interest in diabetes has led to membership of Primary Care Diabetes Europe since the creation of the society, membership of Société Francophone de Diabétologie (SFD), membership of European Association Study for Diabetes (EASD). Her special interest in education has led her to join Diabetes Education Study Group (DESG). She is the current DESG chair.

Summary

The world is rapidly changing and healthcare professionals need to be aware of the wide variety of opportunities for professionals as well as patients and their families. The presentation will be based on examples of applications, serious games, forums, Facebook, Twitter… We shall discuss the benefits / risks for the different groups, (professionals, patients, general population), and also the need to design scientific studies in this area. We shall present international programs such as "Be Healthy Be Mobile" launched by WHO and ITU (International Telecommunication Union) and discuss how mobile phones can help diabetes prevention and control on large scale.

Internet and social media in diabetes

Speaker

After qualifying from the University of Valladolid, in 1993, **Belén Benito** specialized in family medicine. She trained as a family doctor in and around Barcelona.

Her major clinical interest in diabetes has led to her membership of the redGDPS, the Spanish group for the study of type 2 diabetes in primary care. She was elected secretary of the Primary Health Care Diabetes Study Group (GedapS) for the Catalan Society of Family and Community Medicine (CAMFiC) in December 2013.

She published some diabetes guidelines in 2010 and 2011, and articles in international scientific journals. She has also presented papers at local and international congress like EASD or Spanish Society of Diabetes (SED).

She is a member of the SED, and was webmaster of its website (www.sediabetes.org/) from 2006 to 2012.

Belén is also a medical teacher, GP trainer and undergraduate specialist tutor at the University of Barcelona, and tutors resident doctors in family medicine.

Summary

In the 21st century technology and communications have greatly influenced the relationship between patients and professionals or between both revolutions. The appearance of Google, Facebook, Twitter, YouTube, smart phones, medical applications, has created the widest network of diabetes knowledge ever seen to date. Healthcare professionals should use these new media globally, to disseminate knowledge to treat our patients, who increasingly have become e-patients.

With over 400 million registered users worldwide, this is an important online meeting place for the social network. Outside of the internet, the social network has been shown to improve disease management.

Patients with diabetes use the internet more often than they communicate with their doctors, and also meet and interact with a community of patients with the same problems.

But the internet is becoming an unmonitored medium for the treatment of various diseases through advertising. There are web pages selling products that haven't been subjected to the necessary trials, and this means that medical professionals must know and prescribe the best pages for our patients.

■ SESSION 3. MULTIMORBIDITY

Time 11.30 - 13.00
Room MR 09

Lectures:

- **Type 2 diabetes and mental health**
  Frans Pouwer
- **Cancer and diabetes**
  Manel Mata
- **Type 2 diabetes and syndemia**
  Carmen Ioana Jarca
- **Diabetes and chronic osteoarthritis**
  Mehmet Sargin
- **Diabetes and hypertension: are blood pressure target levels evidence-based?**
  Arno Hoes

Type 2 diabetes and mental health

Speaker

Professor **François Pouwer**, PhD (1968), is programme leader in diabetes and hypertension, Centre for Research in Psychology in Somatic Diseases (CoRPS), Department of Medical and Clinical Psychology, Tilburg University, The Netherlands. He is chair (2011-2014) of the Psychosocial Aspects of Diabetes (PSAD) study group (www.psad-easd.eu) of the European Association for the Study of Diabetes (EASD) and past chair of the European Depression in Diabetes (EDID) research consortium (2007-2012). He has published over 100 papers in peer-reviewed scientific journals, including *Nature Reviews Endocrinology*, *Diabetes Care*, *Diabetologia* and *Diabetic Medicine*, on topics related to mental health and diabetes.

Summary

Results from studies that have been conducted in the past decades clearly show that type 2 diabetes is associated with mental health problems in several ways. Most research has focused on depression. The association between depression and type 2 diabetes is complex and probably bidirectional. To date, depression is associated with an increased risk of the development of type 2 diabetes, but the mechanism that links depression with the onset of type 2 diabetes is still unclear. Furthermore, persons with type 2 diabetes have an increased risk of depression, particularly those with complications from diabetes. Results from other epidemiological studies suggest that different forms of chronic stress, sleeping problems, anger, and hostility are associated with an increased risk of the development of type 2 diabetes. Conflicting results were found for other forms of stress: childhood neglect, life events, and work stress. The results of several trials that have tested different treatment modalities for depression in diabetes will be presented: cognitive behavioural therapy, anti-depressant medication, web-based therapy, mindfulness, fish oil and stepped care. In the literature, there is also a debate whether we should screen for depression in diabetes. The pros and cons will be discussed in the presentation.

Cancer and diabetes

Speaker

Manel Mata *(see in page 14)*

Summary

Recent studies suggesting an increased cancer risk with glucose-lowering agents have received widespread publicity in the last 5 years[1]. The evidence of this relationship and the consequences for the management of type 2 diabetes will be reviewed.

Diabetes and cancer share such modifiable risk factors as overweight, obesity, and possibly weight change; diet; physical activity; tobacco smoking; and alcohol[2]. There are also some biological links between diabetes and cancer risk. In particular, diabetes might promote the neoplastic process through hyperinsulinemia, hyperglycaemia, and chronic inflammation.

Some medications used to treat diabetes might affect cancer risk. Metformin, the most common therapy in patients with type 2 diabetes, is associated with reduced cancer risk when compared with other glucose-lowering therapies in observational studies[2]. Although the evidence is limited, exogenous insulin is associated with increased cancer risk[3]. The results of the ORIGIN study have discarded some previous observational studies showing an increase of cancer risk with insulin glargine[4].

In recent years, some of the newest antidiabetic drugs have been associated with cancer: pioglitazone with bladder cancer[5], some incretins (sitagliptin and exenatide) with pancreas cancer[6], and dapaglifozine with bladder and breast cancer[7]. These signals emerged from clinical trials or observational studies but the absolute risk is relatively low. However, in the context of an extensive population of patients exposed to them, the risk-benefit balance is now difficult to assess. Much larger studies are needed to evaluate the potential effect of these drugs on the risk of cancer.

References

1. Giovannucci E, Harlan DM, Archer MC, Bergenstal RM, Gapstur SM, Habel LA, et al. "Diabetes and cancer: a consensus report". *Diabetes Care*. 2010; 33(7):1674-85.
2. Currie CJ, Poole CD, Gale EAM. "The influence of glucose-lowering therapies on cancer risk in type 2 diabetes". *Diabetologia*. 2009; 52:1766-77.
3. van Staa TP, Patel D, Gallagher AM, de Bruin ML. "Glucose-lowering agents and the patterns of risk for cancer: a study with the General Practice Research Database and secondary care data". *Diabetologia*. 2012; 55(3):654-65.
4. ORIGIN Trial Investigators, Gerstein HC, Bosch J, Dagenais GR, Díaz R, Jung H, Maggioni AP, et al. "Basal insulin and cardiovascular and other outcomes in dysglycemia". *N Engl J Med*. 2012; 367(4): 319-28.
5. Faillie JL, Petit P, Montastruc JL, Hillaire-Buys D. "Scientific Evidence and Controversies About Pioglitazone and Bladder Cancer: Which Lessons Can Be Drawn?" *Drug Saf*. 2013 Jul 20. [Epub ahead of print]
6. Halfdanarson TR and Pannala R. "Incretins and risk of neoplasia. An association exists but causality has not yet been proved". *BMJ*. 2013; 346: f3750.
7. Vasilakou D, Karagiannis T, Athanasiadou E, Mainou M, Liakos A, Bekiari E, Sarigianni M, Matthews DR, Tsapas A. "Sodium-glucose cotransporter 2 inhibitors for type 2 diabetes: a systematic review and meta-analysis". *Ann Intern Med*. 2013; 159(4): 262-74.

Type 2 diabetes and syndemia

Speaker

After qualifying in medicine from Iuliu Hatieganu University, Cluj-Napoca, Romania, in 2002, **Carmen Ioana Jarca** obtained the Spanish equivalent of her degree in 2004. She completed her general practice training at the Barcelona Ciutat ICS Teaching Unit, Catalan Institute of Health (Bon Pastor Primary Health Care Centre and Vall d'Hebron Hospital) in 2010.

Between 2009 and 2010 she was spokeswoman for the Board of Resident Doctors of the Catalan Society of Family and Community Medicine (CAMFiC - www.camfic.org) and liaised with the Board of Research at the Spanish Society of Family and Community Medicine (semFYC - www.semfyc.es).

Dr Jarca completed her MA in Primary Health Care in 2011 at the Autonomous University of Barcelona and worked as a GP at Trinitat Vella Primary Health Care Centre in Barcelona until January 2012. Since then she has worked as an emergency doctor at the Emergency Primary Health Care Centre (CUAP), Horta, Barcelona.

Since 2008 she has been a member of the CAMFiC's working group on infectious diseases (GERMIAP), specialising in urinary tract infections. She is also interested in cardiovascular pathology and multimorbidity.

She is currently working on her doctoral thesis at the Autonomous University of Barcelona.

Summary

A syndemic is the aggregation of two or more diseases in a population in which there is some level of positive biological interaction that exacerbates the negative health effects of any or all of the diseases.

Syndemics tend to develop under conditions of health disparity, caused by poverty, structural violence, or stress, and contribute to a significant burden of disease in affected populations.

It is demonstrated that diseases are not independent and that synergistic disease interactions are of considerable importance for prognosis. Several different kinds of interactions among diseases have been described.

Different mechanisms are described in the syndemic interactions of type 2 diabetes. It is known that the risk of serious infections increases significantly with poor diabetes control. Urinary tract infections in these patients are frequent and the mechanism of the pathogenicity is not well understood.

Given the nature of syndemics, we need to promote research with a biocultural-social approach that attends to both clinical and social processes.

Diabetes and chronic osteoarthritis

Speaker

Mehmet Sargin is associate professor of family medicine at the Endocrinology Outpatient Clinic of the Diabetes Unit, from 2006, and Family Medicine Department of the Dr Lütfi Kırdar Kartal Training and Research Hospital in Istanbul, from 2009. He was assistant doctor at the hospital from 1994 to 1998. From 1996 to 1997, he was a doctor at the Diabetes Research and Practice Unit of Istanbul University and from 1997 to 1998 he worked at the Diabetic Foot Unit in the Surgery Department of the Medical Faculty of Istanbul University.

He worked as a specialist at the Diabetes Unit of the Endocrinology and Metabolic Diseases Outpatient Clinic at the Kartal Training and Research Hospital from 1998 to 2006. He was sub-coordinator of the Family Medicine Department of the Kartal Training and Research Hospital from 2006 to 2009. In 2013 he was appointed coordinator of the hospital's Endocrinology and Metabolic Diseases Department.

Dr Sargin is a member of the European Association for the Study of Diabetes, the American Diabetes Association, the Turkish Diabetes Foundation and the Turkish Family Medicine Foundation.

Summary

Osteoarthritis (OA) is considered to be a non-inflammatory, degenerative joint disease in which the aging process and repeated mechanical loading on the articular cartilage are major contributors but may have a systemic metabolic component. In addition, studies have demonstrated associations linking osteoarthritis to several components of the metabolic syndrome, such as hypertension and type 2 diabetes, independently from obesity or any of the other known risk factors for osteoarthritis. Both in vitro and in vitro findings indicate a deleterious effect of lipid and glucose abnormalities on cartilage homeostasis. Chronic low-grade inflammation is a feature shared by osteoarthritis and metabolic disorders and may contribute to the genesis of both. Thus, osteoarthritis is emerging as a disease that has a variety of phenotypes including a metabolic phenotype, in addition to the age-related and injury-related phenotypes.

Diabetes mellitus is an enormous menace to public health globally. Some studies have suggested that diabetic patients are at higher risk of developing rheumatic disorders; some have reported a correlation of OA with longer DM duration and poor glycemic control. Furthermore, the presence of peripheral neuropathy in DM patients may increase the risk of aggressive forms of OA. However, it is still unclear if diabetes mellitus is a risk factor for OA. Several discrepancies in previous works such as definitions for OA, and study limitations such as not including non-diabetic control groups or examining potential confounders have precluded the establishment of a definitive association. Furthermore, diabetes will adversely affect the skeleton if not controlled. High glucose levels may affect cell function and alter extracellular matrix components of the connective tissue producing damage. In fact, a higher prevalence of connective tissue and musculoskeletal conditions occurs among diabetic patients. Although there is a multi-morbid clustering of diabetes and OA, the pathophysiology leading to musculoskeletal disorders in patients with diabetes is not well understood, and thus, adisease index cannot be identified.

Diabetes and hypertension: are blood pressure target levels evidence-based?

Speaker

Arno W. Hoes studied medicine at the Catholic University Nijmegen and graduated in 1986. From 1987 he worked at the Department of Epidemiology and Biostatistics at the Erasmus Medical Centre in Rotterdam, where he trained in clinical epidemiology. He obtained his PhD in 1992. In 1991 he was appointed assistant professor of clinical epidemiology and general practice at the Department of Epidemiology and Biostatistics and the Department of General Practice at the Erasmus Medical Centre. At the latter department he headed the research strand "Cardiovascular disease in primary care". In 1996, he moved to the Julius Centre for Health Sciences and Primary Care at the University Medical Centre in Utrecht, where he was appointed professor of clinical epidemiology and general practice in 1998. He is currently the chair of the Julius Centre.

His clinical research topics include the diagnosis and prognosis of and therapeutic interventions in cardiovascular disease, including coronary heart disease, thromboembolism and, in particular, heart failure. Many of his studies in heart failure have been conducted in the primary care setting and focus on improving early diagnosis and prognosis of heart failure. More recently, several studies on the impact of co-morbidity on the management of heart failure were completed.

He has (co-)authored over 500 papers in peer-reviewed journals (Hirsch index 56) and more than 30 PhD students have completed their PhD thesis under his supervision.

Summary

Target blood pressure levels in patients with hypertension remain subject to vigorous debate. For example, the higher threshold, also for patients with diabetes, recommended in the JNC guidelines published in December 2013 is highly controversial. In some, but not all guidelines, target blood pressure levels in hypertensive patients with diabetes are lower than in those without diabetes. The currently available evidence for the target blood pressure level in patients with diabetes and hypertension is discussed critically in the introduction. Is there enough evidence to guide daily practice?

■ SESSION 4. DEBATE PRO VS CON - PRO SULPHONYLUREA

Time 14.30 - 15.15
Room MR 09

Debate: Clinical controversy. What next after metformin: sulphonylureas or DPP-4 inhibitors?

Speakers

Kamlesh Khunti is professor of primary care diabetes and vascular medicine at the University of Leicester, UK. He leads a research group undertaking research into the early identification and interventions in people with diabetes. His work has influenced national and international guidelines on the screening and management of people with diabetes. He is director of the East Midlands Collaboration for Leadership in Applied Health Research and Care (CLAHRC) and co-director of the South East Midlands Diabetes Research Network where he is a director of a clinical trial unit. He is a principal investigator on several major studies. He is currently an advisor to the Department of Health's National Screening Committee on Vascular Risk, clinical advisor on the Diabetes NICE-led QOF Panel, secretary of the Primary Care Study Group of the European Society of Diabetes (EASD). He is past chair of the Department of Health-RCGP Committee on Classification of Diabetes, chair of the NICE Guidelines on Prevention of Diabetes. He is co-director of the Diabetes MSc at Leicester University and the BMJ Diabetes Diploma.

After qualifying at St. Thomas' Hospital Medical School, London, in 1983, **Martin Hadley-Brown** trained in general medicine in and around London before moving from the Renal Unit at St. Thomas's to Dorset to complete GP training. He moved from there to take up a partnership in Thetford, Norfolk in 1989 and became senior partner in the town's eight-doctor School Lane Practice in 1998.

His major clinical interest in diabetes has led to membership of the Professional Advisory Council of Diabetes UK from 2001 to 2006 and to his being a founder member of the Primary Care Diabetes Society in 2003. He was elected chairman of the Society in November 2005, completing his term at the end of 2012. He remains a member of the PCDS Executive Committee. He was a member of the UK NICE Guideline Development Groups for the Type 2 Diabetes Guidelines CG66 and CG87 published in 2008 and 2009, and continues to advise both NICE and the Royal College of GPs on diabetes issues.

He is also an experienced medical teacher, being a GP trainer and a specialist clinical tutor at the University of Cambridge Clinical School, and at Hughes Hall, Cambridge. He was elected a Fellow of the Royal College of General Practitioners in 2012.

Summary

According to the recent ADA/EASD position statement, patients whose type 2 diabetes is not controlled by lifestyle intervention and metformin should receive an additional therapy, with the most common oral therapy options being sulphonylureas and DPP-4 inhibitors. First generation sulphonylureas, introduced in the 1950s, have largely been abandoned in favour of more potent second- and third-generation drugs. There is extensive clinical experience with these drugs, which are effective at reducing blood glucose, and are generally well tolerated, beside the risk of weight gain and hypoglycaemia. In contrast, DPP-4 inhibitors have the advantage of being weight-neutral and associated with a low incidence of hypoglycaemia. However, are these sufficiently important to justify replacing an established treatment? Furthermore, the ultimate goal of treatment is to reduce cardiovascular events. What is known about the effects of these agents on cardiovascular risk, and should this cause us to re-evaluate our treatment choices? Join us for this debate as we endeavour to settle this clinical controversy.

■ SESSION 5. KIDNEY

Time 15.15 - 16.30
Room MR 09

Lectures:

- **Diagnosis and follow-up of diabetic patients in primary care. Available methods, practices and regulations in Europe**
  Imre Rurik
- **Drug interaction in kidney failure**
  Imre Rurik
- **Diabetic nephropathy/chronic renal disease in type 2 diabetes**
  Xavier Cos and Antonio Rodríguez

Diagnosis and follow-up of diabetic patients in primary care. Available methods, practices and regulations in Europe

Speaker

Professor **Imre Rurik** MD, PhD, MSc in health services management has been chair of the Department of Family and Occupational Medicine at the University of Debrecen, Hungary since 2008. In 1992 he was the first GP appointed to a leading academic position in Hungary.

He also runs his practice in Budapest, now on a part-time basis. His main research topics are nutrition and related metabolic diseases (diabetes, obesity), andrology, geriatric, "aging male", sexual medicine and primary care health service research. He established the first doctoral (PhD) programme for family physicians in Hungary. He is acting vice-chair of the Hungarian Association for the Study of Obesity.

Since 2011, he has been a European SCOPE fellow (Specialist Certification of Obesity Professional Education) recognized by the International Association for the Study of Obesity (IASO) and member of the European Academy of Nutritional Science since 2010. He is a direct member of WONCA, invited speaker and chair of its World and European Conferences, an academic adviser to the European General Practice Research Network (EGPRN), one of the contributors to its European Research Agenda for FM/GP. In 2006 Utrecht, he joined the European Forum for Primary Care and in 2013 was elected a member of its Advisory Board. Since 2003 he has been a member of the Executive Committee of the PCDE (Primary Care Diabetes Europe) and since 2011 has sat on its General Assembly. He has been a national coordinator of a number of EU FP7-funded projects (QUALICOPC, APRES, SWEET). He has also led many Hungarian primary care research and epidemiological projects. He is a founder and recent coordinator of the CENAPC initiative (Central European Network of Academic Primary Care). Between 2010-2013, Imre Rurik was an editor-in chief of the Hungarian Forum for Family Physicians and editorial board member of three international and many Hungarian primary care journals. In 2012, he was invited to be primary care editorial advisor on the *British Medical Journal*. He has received many Hungarian professional and state awards.

Summary

Diabetes mellitus (DM) is usually diagnosed at primary care level. Paediatricians are expected to find children with type 1 DM; primary care providers usually recognize type 2 DM.

Screening is an accepted method for diagnoses at individual and population level as well. Regulations are different between countries and methods for prescription are also not uniform.

Based on international data collection, the presentation will compare the available methods and practices within Europe.

Drug interaction in kidney failure

Speaker

Imre Rurik *(see previously)*

Summary

The detection of acute kidney injury and the monitoring of chronic kidney disease are becoming more important in order to monitor their treatment and realize when they occur in time. Because of the direct connection between kidney damage and the increasing age of the population, as well as its links to other diseases like diabetes mellitus and

congestive heart failure, renal diseases/failure has increased in the last decades. In addition, drug-induced kidney injury, especially among patients in intensive care units, is very often a cause of acute injury.

There are many drugs with known nephrotoxicity and there are others where nephrotoxicity occurs only in different levels of kidney failure. Kidney failure can also be caused by simple interactions.

Diabetic nephropathy is a dangerous condition which also has unexpected interactions.

The most common nephrotoxic agents, the expected interactions and the new available methods for early detection will be presented with a special focus on diabetes.

Diabetic nephropathy/chronic renal disease in type 2 diabetes

Speakers

Francesc Xavier Cos has been a GP in Barcelona (Spain) since 1997 and currently works as a director of Sant Martí Primary Health Centres (Catalan Health Institute in Barcelona, managing over 100 professionals with 27 GPs).

He has been a member of the Primary Health Care Diabetes Study Group (GedapS) since 1997 (www.redgedaps.org) founded in 1993 by professor JF Cano (GP and endocrinologist), together with an enthusiastic group of GPs from the Catalan Society of Family and Community Medicine (CAMFiC - www.camfic.org). He has been a member of the Primary Care Diabetes Research Network (Fundació Jordi Gol i Gurina) since 2001 and a member of the Endocrinology Division of the Spanish Primary Care Diabetes Research Network (redIAPP) since 2001. He has been its European representative since 2004.

Antonio Rodríguez Poncelas is family doctor in Primary Healthcare Team Angles, Girona (Spain). IAS Research Unit, Girona (Spain). He is member of the IDIAP-USR (Barcelona Ciutat Research Support Unit – Jordi Gol Primary Care Research Institute), and member of the Spanish Primary Care Prevention and Health Promotion Research Network (RedGDPS) Group.
He has taken part in the development of consensus on chronic kidney disease in Catalonia (Publication 2011) and the *Guide to Type 2 Diabetes* (5th edition, Elsevier, 2011. Principal investigator and research associate on several competitive projects. Lead investigator PERCEDIME2 (Prevalence of chronic kidney disease in type 2 diabetes in Spain). Publications in spanish and international journals.

Summary

Chronic kidney disease (CKD) is a major public health problem associated with high cardiovascular morbidity and mortality and also its progression to end-stage kidney disease (ESRD). It is also independently related to classical cardiovascular risk factors and of course involves major healthcare spending.

ESRD patients have higher cardiovascular morbidity and mortality compared with the general population[1].

CKD is defined by a reduction of kidney function, an estimated glomerular filtration rate (eGFR) < 60 ml/min/1,73 m^2 or almost three months of persistent kidney damage. eGFR (MDRD) or albumin/creatinine ratio with a morning urine sample are the most frequent lab tests in primary care. CKD is diagnosed when any of these are impaired for three months or more. These lab tests also allow us to classify CKD in different stages. Advanced stages are closely related with a worse prognosis and a higher risk of ESRD[2].

Because type 2 diabetes is one of the most important causes of CKD, its screening at diabetes onset and annual follow-up is recommended in all guidelines. Its early diagnosis and appropriate management improve its prognosis and could also return to normality in early stages.

A tight glucose, blood pressure and lipid control are needed to avoid a worsening of kidney function and cardiovascular complications[3].

References

1. Levey AS, Atkins R, Coresh J, Cohen EP, Collins AJ, et al. "Chronic kidney disease as a global public health problem: approaches and initiatives - a position statement from Kidney Disease Improving Global Outcomes". *Kidney Int.* 2007; 72:247-59.
2. National Kidney Foundation. "K/DOQI clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratification". *Am J Kidney Dis.* 2002, 39(2 Suppl 1):S1–S266.
3. Yudkin JS, Richter B, Gale EA. Intensified glucose lowering in type 2 diabetes: time for a reappraisal. *Diabetologia.* 2010; 53:2079-85.

■ SESSION 6. 5TH PAUL CROMME LECTURE

Time 16.30 - 17.00
Room MR 09

Strategy and practice of diabetes prevention in the community

Speaker

Jaakko Tuomilehto is emeritus professor of public health at the University of Helsinki, Finland, and currently works as professor of vascular prevention at the Danube-University Krems in Krems, Austria. He is also associated with the Diabetes Prevention Unit of the Finnish National Institute for Heath and Welfare. His research interests include the epidemiology and prevention of non-communicable diseases, such as diabetes, cardiovascular disease, cancer and dementia. He has contributed to many landmark studies, including the 2001 Finnish Diabetes Prevention Study (DPS) that demonstrated a remarkable 58% reduction in the incidence of diabetes with lifestyle intervention. His prospective studies have confirmed the role of vascular risk factors for the development of dementia and Alzheimer's Disease in the elderly. Professor Tuomilehto has also established large international collaborative studies on diabetes epidemiology: the WHO DIAMOND Project mapping the incidence of childhood type 1 diabetes worldwide andthe DECODE/DECODA (Diabetes Epidemiology-Collaborative Analysis of Diagnostic Criteria in Europe/Asia).These studies have formed the basis of the glucose criteria for the diagnosis of diabetes. He has been invited to be a member of several ADA and WHO committees on the definition and diagnostic criteria of diabetes. He has played an active role within the European Society of Cardiology and served as a member of the Diabetes and Cardiovascular Disease Guideline task force. He is actively involved in several other committees, scientific organisations and advisory boards nationally and internationally. He is currently the editor-in-chief of *Primary Care Diabetes*. He has received many prestigious scientific awards including the ADA Kelly West Award, EASD Camillo Golgi Award, AHA Fredrick Epstein Award and ESC Geoffrey Rose Award and contributed to over 1,400 scientific peer-reviewed publications.He is one of the most cited authors in the field of clinical medicine and diabetes with h-index 137.

Summary

Lifestyle intervention reduces diabetes risk by about 50% among individuals with impaired glucose tolerance during the active intervention period. Long-term data from three post-trial follow-up studies suggest a sustained risk reduction also after the end of active intervention.The Finnish Diabetes Prevention Study (DPS) determined whether lifestyle intervention lasting for a median of four years has an effect on diabetes incidence, body weight, glycaemia, or lifestyles after a median of 13 years from the initiation of intervention.

Overweight, middle-aged people with impaired glucose tolerance were randomised in 1993-1998 to receive intensive lifestyle intervention or as part of a control group in a multicentre clinical trial setting. After a median of four years of active intervention, participants free of diabetes were further followed until the end of 2009.Lifestyle intervention with modest intensitywas aimed at weight reduction, dietary modification and increased physical activity or "mini-intervention" control with general information during the randomized trial period. No interventions were performed during the follow-up.

During the total 13-year follow-up,the adjusted risk for diabetes incidence (intervention vs. control group) was reduced by 41%, $p<0.001$. The corresponding risk reduction during the post-intervention follow-up only was 31%, $p=0.031$. The former intervention group participants had sustained lower absolute levels of body weight and fasting and 2-hour plasma glucose and stillmaintaineda healthier diet at four years after the discontinuation of the intervention. Better adherence to lifestyle changes during the randomized trial period predicted greater diabetes risk reduction during the total follow-up period. The results regarding healthy lifestyle have been confirmed by several observational studies: people who practice several healthy lifestyle traits have dramatically decreased the incidence of type 2 diabetes.

In conclusion, lifestyle intervention in people at high risk for type 2 diabetes induces long-term sustaining benefits resulting in long-term prevention of progression to type 2 diabetes. Early lifestyle change as the primary target in any prevention strategy in high-risk people is highly important. Once healthier lifestyle is achieved such intervention does not need to be very long, a few years seem to be sufficient.

■ WORKSHOP 1. COMMUNICATION SKILLS – COMMUNICATION WITH PEOPLE LIVING WITH DIABETES: ATTENTION POINTS FOR HEALTH CARE PROVIDERS

Time 11.30 - 13.00
Room MR 06

Speaker

Hilde Bastiaens is a medical doctor with a degree in general practice and public health for children. She has been working at the Department of Primary and Interdisciplinary Care of Antwerp University since 1997. She read her PhD on involvement, empowerment and self-management education in primary care for people with chronic conditions in 2010.

Professor Bastiaens is involved in teaching courses on chronic conditions and inter-professional care in the medical curriculum and has given several lectures and workshops on empowerment and communication in chronic diseases to groups of general practitioners, nurses and health care coordinators. She has also been a teacher and tutor on the international course on qualitative research for many years. Her topics of interests in research are patient empowerment, interdisciplinary care, infant and youth care, prevention, chronic and complex care and translational research.

Summary

Active involvement of patients and a positive patient-provider interaction are important determinants of improved outcomes especially in chronic diseases. In contrast to acute diseases, chronic conditions like diabetes are continuous, there is rarely a cure and consequently, as a rule, patients live with the disease, its symptoms and treatment for the rest of their lives. So patients are handling (self-managing) their condition on a daily basis and subsequently become the principal caregivers of their disease. This assumes that the patient accepts/takes responsibility and is encouraged and supported in solving his own problems. For us as health care providers this means that our role also changes. We remain the experts in the medical field but also (and primarily) become advisors, coaches who facilitate a path to personal self-care. Research shows and continues to extend the value of good communication in supporting people to self-manage their chronic illness. During this workshop we will address the skills needed to engage in empowering communication supporting self-management and adherence. We will provide practical tips and participants will be encouraged to reflect upon how they interact with their diabetes (chronic) patients.

■ WORKSHOP 2. SELF-MONITORING BLOOD GLUCOSE IN PRIMARY CARE

Time 15.15 - 16.30
Room MR 06

Speakers

Guusje Neijens has been a diabetes specialist nurse since 2001. She has furthered her career as a diabetes specialist nurse as a complementary discipline in primary and secondary care, working close to GPs and physicians' assistants in primary care. Guusje works as a specialist nurse in diabetes education and case management at the Carinova Leiboom Groep, Community Care, Deventer. She performs several tasks in working groups of the Dutch Federation of Diabetes Caregivers (EADV). She is the former chair of the EADV Primary Care Expertise Group. She is a referent for the Dutch National Diabetes Program (NAD) and Referent for Diabetes Vereniging Nederland (DVN), www.diabetist.nl. She has been a board member of the PCDE since February 2009.

Daria Roca has worked at the city's Hospital Clínic since she qualified from the University of Barcelona in 2007. She has been a nurse at the Diabetes Unit of the Hospital Clínic since 2009. She also has experience at the ICU (liver) and in the Endoscopy Division where she has worked as a nurse anaesthetist.

She is currently studying for an MA in physical activity and health at the International University of Andalusia, and has an MA in guidelines, procedures and techniques applied to the management of critically ill patients. She also obtained a post-graduate degree in nursing (primary care).

Her teaching activity has focused on her collaboration on the course about diabetes education aimed at health professionals at the Hospital Clínic and on lectures organized by the Diabetic Association of Catalunya (ADC). She works on projects at the Endocrinology and Diabetes Unit at the Hospital Clínic and as a nurse on summer camps with diabetic children organized by ADC. Her research focuses on application.

Summary

Goal setting: BGM: why, when, who and how?

Context: With the rising prevalence of diabetes, successful management of blood

glucose control is increasingly important. To better assess blood glucose levels, self-monitoring will become a more prominent part of diabetes treatment, but there is little available evidence about the frequency of testing moments and their results.

Assessing glycaemia in T2DM is still a challenge because effectiveness is exclusively linked to education. Both in the case of incidentally measuring, as well as in self-regulating, the health care professional must provide communication, evaluation and follow-up. The need for a multidisciplinary approach is one of the conditions, and the patient is, all things considered, a crucial part of the team.

During this interactive workshop you will be introduced:

- Self-monitoring as a multidisciplinary challenge for the GP, nurse and dietician. Adherence to treatment.
- Patients' perspective: pros and cons. Adherence to SMBG. Strategies to improve motivation and results. Benefits of SMBG in type 2 diabetes. Barriers to SMBG. Individual patient's needs.
- Incidence, evidence : pros and cons, special indications e.g. infection, chronic wound.
- Guidelines about the self-monitoring of blood glucose in insulin-treated patients with diabetes.
- Reimbursement. Situation in Spain.
- Safety items.
- New Technologies in SMBG. Mobile Apps.

The workshop is especially recommended for GPs, diabetes nurses and dieticians.

SATURDAY, 24 MAY

■ SESSION 7. RISING STAR LECTURE AND ORAL PRESENTATION OF THE FIVE BEST POSTERS

Time 09.00 - 10.30
Room MR 09

Rising star lecture. Which quality indicators are valid tools for measuring treatment quality in patients with diabetes?

Speaker

After graduating from the Northern State Medical University, Russia, in 2006, **Grigory Sidorenkov** did his internship at the Department of Epidemiology at the Federal Service on Human Well-being Surveillance in Russia. He also began studying part time at the International School of Public Health as part ofa collaboration between Russia and Scandinavia.He obtained his Master of Public Health degree in 2009. In 2007-2008 he worked as an epidemiologist at the Regional Centre of Medical Prevention in Russia. In March 2009 Grigory Sidorenkov moved to the Netherlands to work on his PhD project at the Department of Clinical Pharmacology of theUniversity Medical Centre Groningen that resulted in his doctoral degree. He successfully defended his PhD thesis "The predictive value of treatment quality indicators on outcomes in patients with diabetes" in September 2013. He is still workingat the University Medical Centre Groningen as a Postdoc researcher.His research interests focus on measuringquality of care, developing and validating quality indicators for cardiovascular disease, diabetes and chronic kidney disease.

Summary

Clinical trials form the foundation for treatment recommendations for patients with diabetes. Whether optimal treatment is delivered in practice is as important as the efficacy of the drugs tested in trials. To this end, treatment quality indicators have been developed to measure and improve quality of treatment in primary care. For diabetes patients, these indicators focus on glucose-, lipid-, blood pressure- and albuminuria-lowering treatment. Two types of indicators have been developed, which assess: 1) whether or not patients are treated withmedication ('treatment

status'), and 2) whether treatment is started or intensified when patients do not reach target levels for related risk factors ('treatment intensification'). Treatment according to these indicators is expected to lead to better patient outcomes in clinical practice. However, given the variation in indicator definitions, additional studies are needed to test their predictive validity on patient outcomes in actual practice. In a several observational studies, indicators assessing the quality of treatment in diabetes patients have been testedfor their predictive validity regarding related intermediate and long-term vascular outcomes. The results of studies imply that not all quality indicators are sufficiently valid, and they are also not always equally informative regarding the quality of treatment across patients with different characteristics. They may require restrictionsin certain conditions.Generally, indicators measuring treatment status are easy to calculate and appear sufficiently valid to be implemented for continuous annual quality measurement using routinely collectedpatients' data. In turn, indicators measuring treatment intensification require enriched clinical data and may be more suitable for feedback to the doctors and quality improvement programmes.

Oral presentation of the five best posters

The five best abstracts selected from the abstracts accepted by the Scientific Commitee of the Conference will be presented orally in this session (5 minutes per abstract):

01. Health care costs in adults with type 2 diabetes: a comparison with non-diabetic subjects from a population database in Catalonia (Spain).

02. Continued smoking abstinence in diabetic patients in primary care: ITADI study.

03. Expectations and aspirations of patients and physicians at the diagnosis of type 2 diabetes.

04. Guideline development based in professional needs.

05. Impact of a diabetes educational program at home in patients with type 2 diabetes and mobility limitation on metabolic control, knowledge and quality of life.

■ SESSION 8. CARDIOMETABOLIC CHALLENGES

Time 11.00 - 12.30
Room MR 09

Lectures:

- **Update on lipids and hypertension**
  Richard Hobbs
- **Diabetes and smoking**
  Carmen Cabezas
- **Physical activity**
  Laura Brugnara
- **Heart failure in diabetes**
  Arno Hoes

Update on lipids and hypertension

Speaker

Richard Hobbs is currently professor and head of Primary Care Health Sciences at the University of Oxford (UK). He gave 36 years uninterrupted service to the National Health Service as a practicing clinician and worked for 32 years as an inner-city GP, serving a diverse and disadvantaged community in central Birmingham. He has carried out personal research on cardiovascular epidemiology and trials, especially relating to stroke prevention and heart failure, and authored over 350 major papers in journals such as the *Lancet*, *Annals of Internal Medicine*, *BMJ*, *Atherosclerosis*, *EHJ* and *Stroke*. He has contributed to several NICE and ESC guideline reviews and held numerous senior university management posts.

He was director of the NIHR English School for Primary Care Research (2009-) and co-director and chair of the Quality and Outcomes (QOF) Review Panel (2005-09).

He has performed numerous research funder roles with NIHR, Wellcome, and MRC as well as charity roles with the British Heart Foundation (chairman of the Prevention and Care Board), the European Society of Cardiology (ESC, chairman PC Council), the European Primary Care Cardiovascular Society (EPCCS, chairman), the UK Primary Care Cardiovascular Society (chairman twice; and the British Society for Heart Failure (inaugural treasurer).

Summary

Cardiovascular disease (CVD) remains the leading cause of global morbidity and mortality, causing over 4 million deaths in Europe and 17 million deaths worldwide in 1999. Abnormal lipids, smoking, hypertension, diabetes, abdominal obesity, psychosocial factors, low consumption of fruit and vegetables, no alcohol intake and irregular physical exercise account for more than 90% of the risk of an acute myocardial infarction (MI) across age groups and in all regions of the world, according to the recent INTERHEART study. Since CVD is therefore a multi-factorial syndrome, guidelines need to guide clinicians on how to identify those at high risk, as well as provide preventative and treatment goals, whilst remaining simple to interpret and implement.

Treating hypertension significantly lowered the incidence of CVD. As shown in 17 randomized trials of antihypertensive treatment, a net BP reduction of 10-12 mmHg systolic BP and 5-6 mmHg diastolic BP reduced stroke incidence by 38% and CHD by 16.3%.

Interventions that lower LDL-C concentrations are also proven to significantly reduce the incidence of CHD and other major vascular events in a wide range of individuals. A meta-analysis of 14 statin trials showed that for every 40 mg/dL (1 mmol/L) decrease in LDL-C, it led to a 21% decrease in CHD risk after 1 year of treatment.

These data are incorporated into clinical guidance such as the National Cholesterol Education Program (NCEP) Adult Treatment Panel (ATP) III guidelines, in the US, the Joint Task Force of European Societies guidelines in Europe, and NICE in the UK, which all recognise the importance of dyslipidaemia, hypertension and smoking as the main risk factors for CVD. They also provide practical tools (Framingham, SCORE and QRisk CV 10-year-risk algorithms respectively) to assist short term risk estimation in individuals without prior cardiovascular disease.

Diabetes and smoking

Speaker

Carmen Cabezas Peña graduated as a GP from the University of Barcelona and obtained an MA in Health Science Methodology from the Autonomous University of Barcelona. She specialises in family and community medicine and preventive medicine and public health.

Since 2006 she has served as deputy director of health promotion at the Department of Public Health, Department of Health of the Catalan Government. For 20 years she has been teaching and doing research in these same areas. For more than 15 years she has been a member of the working groups on health education of the Programme of Preventive Activities and Health Promotion (PAPPS) of the Spanish Society of Family and Community Medicine (semFYC) and the working groups on smoking prevention and control of the Spanish and Catalan Society of Family and Community Medicine. She chaired these groups for five years. She has authored over 80 scientific publications in journals and book chapters and given 100 lectures at scientific meetings, especially in the fields of preventive medicine and health promotion.

Summary

There is evidence for the increased risk of developing type 2 diabetes among cigarette smokers.

The Systematic Review and Meta-analysis on Active Smoking and the Risk of Type 2 Diabetes of Willi[1] confirm that active smoking is associated with an increased risk of type 2 diabetes. The search yielded 25 prospective cohort studies (N = 1.2 million participants) that reported 45,844 incident cases of diabetes during a study follow-up period ranging from five to 30 years. The pooled adjusted RR was 1.44 (95% confidence interval [CI], 1.31-1.58). The risk of diabetes was greater for heavy smokers (≥ 20 cigarettes/day; RR, 1.61; 95% CI, 1.43-1.80) than for lighter smokers (RR,1.29; 95% CI, 1.13-1.48) and lower for former smokers (RR, 1.23; 95% CI, 1.14-1.33) compared with active smokers, consistent with a dose-response phenomenon.

Cigarette smoking predicts incident type 2 diabetes, but smoking cessation leads to higher short-term risk. For smokers at risk for diabetes, smoking cessation should be coupled with strategies for diabetes prevention and early detection.

The ARIC (Atherosclerosis Risk in Communities) Study[2] showed thatcompared with adults who never smoked, the hazard ratios of diabetes among former smokers, new quitters, and continuing smokers were 1.22 (CI, 0.99 to 1.50), 1.73 (CI, 1.19 to 2.53), and 1.31 (CI, 1.04 to 1.65), respectively. In an analysis of long-term risk after quitting, the highest risk occurred in the first three years (hazard ratio, 1.91 [CI, 1.19 to 3.05]), then gradually decreased to 0 at 12 years. Luo et al studying the women enrolled in the Women's Health Initiative found quite similar results[3]. They found that the risk for diabetes was significantly elevated in current smokers (hazard ratio = 1.28, 95% confidence interval: 1.20, 1.36) but was even higher in women who quit smoking during the first three years of follow-up (hazard ratio = 1.43, 95% confidence interval: 1.26, 1.63). In new quitters with low cumulative exposure (<20 pack-years), diabetes risk was not elevated following smoking cessation. In conclusion, the risk of diabetes in former smokers returns to that in never-smokers ten years after quitting, and even more quickly in lighter smokers.

Some groups have studied the relationship between second-hand smoke and diabetes. Compared with non-smokers with no exposure to passive smoke, there was an increased risk ofdiabetes among non-smokers who were occasionally (relative risk [RR] 1.10 [95% CI 0.94-1.23]) or regularly (1.16 [1.00-1.35]) exposed to passive smoke.[4]

Besides that, smoking is a risk factor for cardiovascular and kidney diseases,that precede or accompany diabetes. Smoking cessation can result in weight gain and a short-term worsening of some diabetic symptoms.[5]

Cigarette smoking is associated in a dose-response manner with an increased mortality among women with type 2 diabetes. Furthermore, quitting smoking appears to decrease this excess risk substantially. Diabetes patients should be strongly advised against smoking.[6]

Health benefits for diabetic patients that have been found to be associated with smoking cessation are[7]:

- Decreased risk of developing coronary heart disease, within 11 years the risk decreases to that of non-smoking diabetics.
- Slows the progression of nephropathy in type 2 diabetics.
- Decreased risk in all cause mortality, cardiovascular and cancer mortality, within 11 years the risk decreases to that of non-smoking diabetics.
- Improvement of metabolic parameters and reduced blood pressure and albuminuria at one year.

There is some evidence to suggest that until the body readjusts after the withdrawal of nicotine, glycaemic control may be affected in diabetic patients and therefore patients need to be extra vigilant and may need closer monitoring through this period.

The actual Recommendations for Smoking Cessation in people with diabetes of the American Diabetes Association are:

- Advise all patients not to smoke oruse tobacco products. (A)
- Include smoking cessationcounselling and other forms oftreatment as a routine component ofdiabetes care. (B)

The routine and thorough assessmentof tobacco use is key to prevent smokingor encourage cessation. Numerouslarge randomized clinical trialshave demonstrated the efficacy andcost-effectiveness of brief counsellingin smoking cessation, including the useof quitlines, in reducing tobacco use.

For the patient motivated to quit, theaddition of pharmacological therapy tocounselling is more effective than eithertreatment alone. Special considerationsshould include assessment of levelof nicotine dependence, which isassociated with difficulty in quitting andrelapse.Although some patientsmay gain weight in the period shortlyafter smoking cessation, recent researchhas demonstrated that this weight gaindoes not diminish the substantial CVDrisk benefit realized from smoking cessation.[8]

The National Health Service recommends

The UK Department of Health guidance «Smoking cessation in Secondary Care» outlines a care pathway for supporting smoking cessation that can be adopted for diabetic patients during hospitalization.The care pathway incorporates 3A's:

- ASK and record smoking status
- ADVISE the patient of the personal health benefits of quitting
- ACT on the patient response
  - prescribe NRT for patients in withdrawal
  - monitor withdrawal and adjust pharmacotherapy accordingly
  - refer to local stop smoking service (in the countries where that type of resource is available).

References

1. Willi C, Bodenmann P, Ghali WA, Faris PD, Cornuz J. Active smoking and the risk of Type 2 diabetes. *JAMA.* 2007; 298(22): 2654-64.
2. Yeh HC1, Duncan BB, Schmidt MI, Wang NY, Brancati FL. Smoking, smoking cessation, and risk for type 2 diabetes mellitus: a cohort study. *Ann Intern Med.* 2010 Jan 5;152(1):10-7. DOI: 10.7326/0003-4819-152-1-201001050-00005.
3. Luo J, Rossouw J, Tong E, Giovino GA, Lee CC, Chen C, et al. Smoking and diabetes: does the increased risk ever go away?. *Am J Epidemiol.* 2013 Sep 15;178(6):937-45. DOI: 10.1093/aje/kwt071. Epub 2013 Jun 30
4. Zhang L, Curhan G, Hu F, Rimm E, Forman J. Association Between Passive and Active Smoking and Incident Type 2 Diabetes in Women. *Diabetes Care.* April 2011 34:4; 892-7 [published ahead of print February 25, 2011] DOI: 10.2337/dc10-2087 1935-5548.
5. Tonstad S. Cigarette smoking, smoking cessation, and diabetes. *Diabetes Res Clin Pract.* 2009 Jul; 85(1): 4-13. DOI: 10.1016/j.diabres.2009.04.013. Epub 2009 May 7.
6. Al-Delaimy W, Willett W, Manson J, Speizer F, Hu F. Smoking and Mortality Among Women With Type 2 Diabetes: The Nurses' Health Study cohort. *Diabetes Care.* December 2001 24: 12; 2043-8. DOI: 10.2337/diacare.24.12.2043 1935-5548.
7. NHS Smokefree. Interventions in Secondary Care. The Clinical Case for Smoking Cessation for DIABETIC PATIENTS, 2010. Available on: URL: http://www.ncsct.co.uk/usr/pub/interventions-in-secondary-care-june-10-diabetic-patients-factsheet.pdf
8. American Diabetes Association Standards of Medical Care in Diabetes 2014. *Diabetes Care.* January 2014:Vol 37; Suppl 1. Available on: URL: http://care.diabetesjournals.org/content/37/Supplement_1/S14.full.pdf+html

Physical activity

Speaker

Laura Brugnara received her medical degree from the Universidade Federal do Rio Grande do Sul (UFRGS, Brazil), specializing in internal medicine and endocrinology and metabolism in 2000. She has performed clinical investigations into the chronic complications of diabetes, especially autonomic and peripheral neuropathy. In 2008, she joined the Diabetes Clinical Research Unit of CIBERDEM-Hospital Clínic, Barcelona (Spain). In recent years, she has been involved mainly in clinical research focusing on the metabolic and physiological mechanisms of physical exercise in patients with type 1 and type 2 diabetes.

Summary

Lifestyle is one of the principle factors taken into consideration by clinical researchers in prevention and interventional studies on diabetes and associated metabolic diseases.

In this presentation, I will discuss recent data on sedentariness in Spain and in the world and its association with type 2 diabetes. I will review clinical trials on lifestyle interventions and the current clinical recommendations for the prevention and treatment of type 2 diabetes.

I will also discuss new clinical strategies and prescriptions for physical activity for the management of diabetes.

Heart failure in diabetes

Speaker

Arno Hoes *(see in page 19)*

Summary

The current evidence about the prevalence of (unknown) heart failure (both heart failure with reduced and preserved ejection fraction) among patients with diabetes and challenges in the recognition of heart failure in these patients will be presented during the lecture. In addition, the prognostic consequences of concomitant heart failure in diabetes will be discussed as well as the implications for the therapy targeted at both diabetes and heart failure. In particular, the consequences for the available evidence on these issues for daily clinical practice will be highlighted.

■ SESSION 9. NEW DRUGS

Time 12.30 - 13.15
Room MR 09

Lectures:

- **Safety issues**
  Eugene Hughes

- **Efficiency of new antidiabetic agents**
  Luc Martinez

Safety issues

Speaker

Eugene Hughes, qualified from Guy's Hospital in 1979, works as a general practitioner in Ryde on the Isle of Wight. In 1996, he was a founder member of Primary Care Diabetes UK. He served on the committee for six years, during which time he was involved in conference organization. More recently, he was a member of the steering group which established the Primary Care Diabetes Society in the UK.

In 2002 he joined the executive of Primary Care Diabetes Europe, and has organized several international conferences. He is currently past chairman of this organization. In 2007, the journal *Primary Care Diabetes* was launched, and has recently gained Medline listing.

He was the editor of the journal *Diabetes & Primary Care* from 1998 to 2007. He is also on the editorial board of *Diabetes Digest* and the *European Endocrine Review*. He has written many articles and editorials on diabetes, particularly relating to service delivery and early management of type 2 diabetes. He is the medical editor of *A Simple Guide to Diabetes*, and author of "Evidence in Diabetes and Cardiovascular disease".

Summary

The past decade has seen the arrival of a multitude of new agents for the management of type 2 diabetes. Whilst these agents may prove useful weapons in the battle against this progressive condition, are we really sure of their safety? Recent commentaries have raised questions about cancer, bone health and cardiovascular risk.

This presentation will focus on all agents, new and old, and examine the evidence for safety and harm. It will also pose important questions about drug trials, marketing, and the role of licensing bodies. Are we rushing new drugs to the market? Have we been presented with all the evidence?

Efficiency of new antidiabetic agents

Speaker

Luc Martinez is professor of general practice at the Department of General Medicine of Pierre and Marie Curie University and has a private practice in Bois d'Arcy, France.

He has been vice-president of the French Society of General Medicine (SFMG) since 2000. And has served on the Scientific Committee of the French National Board of Continuing Medical Education and was appointed in 2005 as a member of the French National Authority for Health. He had previously served on the authority's committee in charge of delivering clinical practices and went on to sit on its Committee of Economics and Public Health Assessment until 2012.

He engaged in clinical research in 1996, acting first as regional coordinator (implementation of 16 phase IIB and phase III clinical trials), then as principal investigator (three French clinical trials). He began his international clinical research activity in 2001, as a member of the steering committee for the development of inhaled insulin. He then continued to be involved in diabetes clinical research and validated a self-administered questionnaire aimed at exploring motivation, fears, and barriers towards insulin injection therapy (*Health Qual Life Outcomes*, 2007). He received his medical degree from the Medical College of the University of Paris. He has authored or co-authored more than two dozen publications in English- and French-language journals and has been a speaker at many society meetings and workshops.

Summary

Efficiency and cost-effectiveness are two closely related constructs. They pertain to health economics or, in other words, the science of scarcity. Their aim is to obtain maximum value for money. This makes it necessary to assess cost-effectiveness and the associated concept is efficiency, which measures how well resources are used in order to achieve a desired outcome.

All economic evaluations have a common structure: measurement of inputs (costs) and measurement of outcomes (health benefits). Preferably, health outcomes are measured in terms of survival and Quality of Life (e.g QALY). If not available, it is recommended to look at outcomes measured purely in terms of health (years of life saved, MI prevented…). As a last resort, cost-benefit analyses could be considered.

The patient's perspective of outcomes is essential in order to obtain a complete assessment of a treatment. Indeed, the benefits (even if substantial but not clinically relevant from the patient perspective) can be outweighed by the side effects of the treatment. Therefore, it is necessary to measure the impact of the treatment on health and emotional status, or more generally on health-related quality of life (HRQoL).

During this presentation, we will review the literature in order to know whether HRQoL outcomes and costs were measured for the new drugs recently launched on the market.

XIII INTERNATIONAL PRIMARY CARE
DIABETES EUROPE CONFERENCE

BARCELÓ SANTS HOTEL, BARCELONA, SPAIN

ADVANCES IN TYPE 2 DIABETES MANAGEMENT: ONCE-WEEKLY GLP-1 RECEPTOR AGONISTS FOR OPTIMAL PATIENT CARE

23 MAY 2014 • ROOMS MR7 & 8

Programme

13:20 **Welcome and introduction**
Johan Wens, Belgium

13:25 **GLP-1 RA recent updates: Do we need a once-weekly GLP-1 RA and what is the added value for the treatment of T2DM?**
Jiten Vora, UK

13:55 **Case study: Individualizing treatment options for patients treated with OAD agents**
Manel Mata, Spain

14:25 **Conclusions**
Johan Wens, Belgium

14:30 **Close**

ES PCDE2014 002

Satellite Symposiums

■ LILLY LUNCH SATELLITE SYMPOSIUM

Advances in type 2 diabetes management: once-weekly GLP-1 receptor agonists for optimal patient care

Date Friday, 23 May
Time 13.00 - 14.30 (lunch is included)
Rooms MR 07 + 08

Summary

In this satellite symposium, a distinguished faculty will explore the rationale for the development of once-weekly GLP-1 receptor agonists, preliminary data supporting their effectiveness in achieving glycaemic control versus a range of comparator agents, additional benefits such as weight reduction, and safety and tolerability considerations – particularly the occurrence of hypoglycaemia. A clinical case will be used to illustrate the potential place for these agents in the modern management of patients with type 2 diabetes.

Agenda

13.20 Welcome and introduction
Johan Wens (Belgium)

13.25 GLP-1 receptor agonists recent updates: Do we need a once-weekly GLP-1 receptor agonists and what is the added value for the treatment of type 2 diabetes management?
Jiten Vora (UK)

13.55 Case study: Individualizing treatment options for patients treated with OAD agents
Manel Mata (Spain)

14.25 Conclusions
John Wens (Belgium)

14.30 Close

Limited capacity.

■ NOVO NORDISK SATELLITE SYMPOSIUM

Advances in diabetes treatment initiation and intensification – a clinical perspective

Date Friday, 23 May
Time 17.00 - 20.00
Room MR 10

Objectives

- To provide an overview of a modern approach to diabetes management and examine the drivers of therapeutic decision making.
- To consider the different characteristics of key therapeutic classes and their impact on clinical outcomes.
- To explore the molecular design and mode of action of a long-acting insulin.
- To discuss the therapeutic benefits of long-acting insulin.
- To analyse the benefits of a combining insulin and GLP-1 analogues.
- To encourage physicians to engage actively with and understand the data by providing a highly scientific and interactive meeting.

Chair: Richard Holt

Agenda

17.00 - 17.25 Choosing your second-step therapy: a modern approach to diabetes management
Tina Vilsbøll

17.25 - 17.50 New opportunities from designing protein molecules
Jochen Seufert

17.50 - 18.20 Clinical profile of new long-acting insulin
Richard Brice

18.20 - 18.35 BREAK

18.35 - 19.05 Synergies of complementary drugs
Stefano Del Prato

19.05 - 19.30 Building on the benefits of insulin/GLP-1 co-usage
Tina Vilsbøll

19.30 - 19.50 Dealing with injectable diabetes therapies
Richard Holt

19.50 - 20.00 Panel Q&A (all the speakers)

Limited capacity.

Abstracts

ORAL PRESENTATIONS

ORAL O1

Health care costs in adults with type 2 diabetes: a comparison with non-diabetic subjects from a population database in Catalonia (Spain)

Mata M[1], Casajuana M[1], Mauricio D[2], Hermosilla E[1], Vinagre I[3], Bolibar B[1]

[1]Barcelona Research Support Unit, Jordi Gol Primary Care Research Institute, Catalan Health Institute; [2]Endocrinology and Nutrition Department, Germans Trias i Pujol Hospital; [3]Endocrinology and Nutrition Department, Hospital Clinic i Provincial

Aims: To estimate the direct health costs associated to type 2 diabetes (T2DM) in patients with the disease compared with non-diabetic subjects in a population-based primary care database.

Design and method: Retrospective analysis of resource consumption (ambulatory care, in-patient care, laboratory tests, pharmacy, dialysis, strips and disability days) during 2011, from the SIDIAP [Q](Information System for the Development of Research in Primary Care) database, including 1,878,816 persons assigned to the Catalan Health Institute. For each patient with T2DM (age 30-90 years), one control matched by age, sex and managing physician was randomly selected. All costs were based on the official prices provided by the local Health Care Authority.

Results: We compared the costs of 126,811 T2DM patients (53.5% male, mean age 67.6 years, mean disease duration 7.2 years and mean HbA1c: 7.1%) with 126,811 patients without diabetes. The annual average cost per patient was € 3,497.2 and € 2,091.4 for diabetic and non-diabetic subjects, respectively (difference € 1,405.7, i.e. 67.2% increased cost). The costs of in-patient care were € 1,303.1 and € 801.6 (62.5% increase in cost), pharmacy costs € 925.0 and € 489.2 (89.1% increase), ambulatory cost € 577.0 and € 369.1 (67.2% increase), and all other costs of € 1269.1 and € 800.7 (54.5% increase), in diabetic and non-diabetic subjects, respectively. Patients with poor control (HbA1c> 7%) had an average cost of € 3,721.4 vs € 3,186.5 for patients with good control. In the absence of macrovascular complications, the average cost was € 2,651.2 for diabetic and € 1,671.2 for non-diabetic subjects, while the presence of any complications increased the cost to € 4,733.6 and € 3,273.6, respectively.

Conclusions: The direct costs of care were 67% higher in diabetic subjects. Higher costs were associated with poor glycaemic control and the presence of chronic complications.

ORAL O2

Continued smoking abstinence in diabetic patients in primary care: ITADI study

Roig L[1], Pérez-Tortosa S[2], Manresa JM[3], Martin-Cantera C[4], Puigdomènech E[5], Roura P[6]

[1]Basic Area of Health La Garriga, Catalan Health Institute; [2]Basic Area of Health La Llagosta; [3]Metropolitana Nord Research Support Unit – Jordi Gol Primary Care Research Institute; [4]Barcelona Ciutat Research Support Unit, Catalan Health Institute; [5]Department of Medicine, Autonomous University of Barcelona; [6]Basic Area of Health Badia

Aims: To assess the effectiveness of an intensive smoking cessation intervention based on the Transtheorerical Model of Change (TTM) in diabetic smokers attended in primary care.

Design and method: A cluster randomized controlled clinical trial was designed in which the unit of randomization (intervention vs usual care) was the primary care team.

Eligible patients were type 1 and type 2 diabetic smokers of both genders, aged 14 or older who received routine diabetes care from the participating primary care teams.

An intense, individualized intervention using the motivational interview, conduct therapies and medications adapted to the patient's stage of change was delivered. The duration of the study was one year.

Results: A total of 772 patients (345 intervention group IG *vs* 377 control group CG) completed the study. After one year, continued abstinence was recorded in 26.1% IG and in 17.8% CG ($p = 0.007$). In patients with smoking abstinence, there was a higher percentage of those classified in the precontemplation and contemplation stages at baseline in the IG than in CG (21.2% *vs.* 13.7%, $p = 0.024$). When the precontemplation stage was taken as a reference (OR = 1.0), the preparation/action stage at baseline showed a protective effect, decreasing 3.41 times the risk of odds of continuing smoking (OR = 0.293 95% CI 0.179-0.479, $p < 0.001$). The contemplation stage at baseline also showed a protective effect, decreasing the risk of the odds of continuing smoking by 1.93 (OR = 0.518, 95% CI 0.318-0.845, $p = 0.008$).

Conclusions: An intensive intervention adapted to the individual stage of change delivered in primary care was feasible and effective, with a smoking cessation rate of 26.1% after one year.

ORAL 03

Expectations and aspirations of patients and physicians at the diagnosis of type 2 diabetes

Cos Claramunt X[1], Paldánius PM[2], Strain WD[3], Blüher M[4]
[1]Sant Marti de Provençals Primary Health Care Centre, Catalan Health Institute, Catalan Government; [2]Novartis Pharma AG; [3]University of Exeter Medical School, Diabetes and Vascular Medicine; [4]University of Leipzig, Department of Medicine

Aims: Exploring barriers to improved treatment is necessary for better management of T2DM. At diagnosis, differences between physicians and patients in perceptions of pivotal disease-related aspects might constitute such a barrier.
Design and method: We conducted a 20-minute online survey in Brazil, Japan, India, Spain, the UK and USA, enrolling 652 adult T2DM patients and 337 physicians (264 general practitioners – GPs –, 73 specialists), who spend 70% of their time attending T2DM patients per month (>50/GPs, >100/specialists).
Results: Physicians and patients reported a mean duration of 23 min and 27 min, respectively, for the diagnosis consultation visit. During the visit, most time was spent discussing lifestyle changes and diet, disease and its causes, and drug treatment: 13-18% per category depending on the GP/specialist. 68% of the patients reported understanding the importance of lifestyle interventions. In Japan, 23% of patients did not consider changes to exercise regimen as important. Physicians had incrementally reduced expectations of adherence to lifestyle advice among 50-year-olds (36%), renally impaired patients (24%), and 80-year-olds (14%). Patients were more likely to follow dietary (51%) than exercise advice (40%). Health problems were the main reason (33%) given for not exercising, especially in the UK where 52% of the physicians prescribed diet and exercise alone as first-line treatment, regardless of patient profile. However, about half of the patients were advised to make lifestyle changes before receiving a drug. At diagnosis, 23% of the patients (USA, 15%; UK, 37%) were not prescribed medication, a decision that most patients perceived positively. Although 33% of patients received initial drug treatment within a month, 58% of Japanese patients received drug treatment only after 2 years.
Conclusions: Barriers to appropriate disease management are constituted already at the time of diagnosis of T2DM. Identification of such factors is instrumental for improved outcomes.

ORAL 04

Guideline development based on professional needs

Ávila L[1], Mancera J[1], Gómez R[1], Tinahones F[1]
[1]Andalusian Health Service

Aims: To develop guidelines based on professional education and training needs, using qualitative research techniques.
Design and method: Most of the guidelines are based on expert opinion, and these experts decided the clinical practices needed. We think that today, professionals themselves are best suited to decide the most useful subjects in their clinical practice.
For this purpose, qualitative research is the most suitable technique, because it is the only one that allows us to research fillings and needs.
We set up four groups comprising professionals from different specialities involved in type 2 diabetes mellitus treatments. This enabled us to bring together professionals from the Spanish Society of Endocrinology, Internal Medicine, General Medicine and Family Practice. They were recruited from members of these societies by letter and later by phone calls. We requested written authorization to record the sessions.
The four groups met separately and explained their findings during two hours sessions.
We later analysed the answers by transcribing the responses which were put into groups according to similarity.
Results: From all the records, we extracted 138 questions and selected 100 of them for guideline development. These took theform of clinical questions with evidence-based answers. The subjects studied were different from specialist to specialist as could be expected. The two primary care societies focused on diabetes prevention and the medical treatment of prediabetes, whereas in hospitalsspecialising in internal medicine or endocrinology, bariatric surgery or pancreas transplants were more important.
Everybody emphasized the role of different therapeutic groups in diabetes treatment and the importance of therapeutic education as a first-degree tool for managing patients with diabetes.
Conclusions: Qualitative technical research is an excellent toolto investigate professional training needs.

ORAL 05

Impact of a diabetes educational program at home in patients with type 2 diabetes and mobility limitation on metabolic control, knowledge and quality of life

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Aims: To analyse the effects of a diabetes educational program (DEP) on metabolic control, knowledge, quality of life and mobility limitation among patients with type 2 diabetes (T2DM) and their caregivers at home.
Design and method: *Design:* Controlled non-blind clinical trial. *Setting:* Eightprimary health care centres. *Subjects:* Adults with T2DM and mobility limitation and their caregivers. *Exclusion criteria:* Cognitive impairment, institutionalized patients palliative care, no informed consent. 134 subjects were randomly allocated to a control or intervention group (CG and IG respectively). *Interventions:* IG: three sessions individually DEP at home and three group sessions with their caregivers for one month. CG: Usual care. *Primary outcome:* Knowledge (ECODI), metabolic control, and quality of life (EsDQOL) at three and six months. *Patient measures:* Sociodemographic, medical and functional details, pharmacology adherence and dietary habits. *Caregivers measures*: Sociodemographic. *Statistical analysis:* Quantitative variables were described by means and percentages. The χ^2 test was used to compare ratios and the Student's t-test to compare means.
Results: 134 subjects were included (68 in IG and 66 in CG, both homogeneous groups) 73.1% female, mean age 79.08 years (95% CI 77.95 to 80.20). At six months: Decreased total cholesterol, improvement in ECODI (mean difference 0.87; CI 95% -0.57 to 2.32; p=0,232) and significant self-perceived health in the IG versus CG. *Caregivers analysis*: 77.7% were women; mean age of 55.43 years (95% CI 52.89 to 57.96); 74.6% married/partner; 59.7% primary education. The average household income was 888.26 euros (95% CI 810.32 to 966.21). Knowledge by ECODI was improved in IG at six months (p= 0.004) although there was no significant difference compared to caregivers of CG.
Conclusions: The DEP at home in patients with type 2 diabetes and mobility limitation has shown an impact on the improvement of knowledge and self-perceived health status.

POSTERS

POSTER 01

Initiation insulin therapy with type 2 diabetic patients by family physicians in Bosnia and Herzegovina: can it be improved?

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Aims: Most family physicians (FPhs) in Bosnia and Herzegovina (B&H) are uncertain whether and when to start insulin therapy for unregulated type 2 diabetes patients. The purpose of this study was to show that this trend can be changed with simple updates in the physician's daily practice.
Design and method: A randomised prospective observation study in family medicine settings in Primary Care Zenica. A total of 500 patients with type 2 diabetes were included in the study. The methods of researching experimental FPhs group were based on the application of the model for quality care improvement focusing on physicians' training and education. All statistical tests were carried out with a level of statistical probability of 95% (p <0.05).
Results: The registered type 2 diabetes patients per FPhs ranged from 87 to 150. 70% of FPhs have 10 minutes for the routine monitoring of patients. In patients groups no statistically significant differences were foundin: years of age (61, 39±10, 01 vs. 62, 30±9, 26) and sex: man94 (49, 2%) vs. 97 (50, 8%), female 155 (50, 2%) vs. 154 (49, 8%). Without insulin therapy this was 142 (57%) vs. 118 (47%) experimental vs. control group of patients. While in the control group a significantly higher number of patients received insulin therapy from diabetologists 115 (45, 8%) vs. 53 (21, 3%).In the experimental group, FPhs more frequently recommended and initiated insulin independently 54 (21, 7%) vs. 18 (7, 2%) (X2=43, 09; df=2; p<0,001).Opposite, combine oral and insulin therapy given frequently by control groups of FPh 97% vs. 52% (X2=18, 01; DF=1; p<0,001).
Conclusions: Although the training and education offamily physiciansin B&H showed significant improvements in the quality of care for unregulated diabetic patients there is still room for improvement due to significantly higher number of patients who need to see diabetologists to prescribe insulin.

POSTER 02

Diabetes management through integrated care processes in primary care

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Aims: Dealing with diabetes using quality indicators considered by the integrated care processes obtains much better results including: prevention of retinopathy and diabetic foot and determinations of glycosylated haemoglobin in lower rank 8.
Design and method: Observational, descriptive, longitudinal, case series study. Urban middle class health centre. The results obtained before the implementation of integrated care processes 2005 are presented. The results obtained in retinography, feet evaluation and glycosylated haemoglobin determinations are presented. Classified by year and sex since 2006, the implementation of integrated care processes, until 2013.
Results: Number of men : 2005-481/2006-655/2007-762/2008-795/2009-805/2010-822/2011-831/2012-877/2013-925.
Number of men with at least one determination of glycosylated haemoglobin: 2005-121/2006-262/2007-370/2008-492/2009-427/2010-492/2011-533/2012-444/2013-688.
Number of men with at least one retinography: 2005-10/2006-71/2007-119/2008-255/2009-161/2010-190/2011-187/2012-183/2013-368.
Number of men with at least one physical examination of feet: 2005-3/2006-54/2007-239/2008-339/2009-222/2010-223/2011-407/2012-229/2013-412.
Number of women: 2005-497/2006-697/2007-816/2008-826/2009-810/2010-819/2011-832/2012-877/2013-899.
Number of women with at least one determination of glycosylated haemoglobin: 2005-135/2006-270/2007-432/2008-534/2009-411/2010-490/2011-531/2012-449/2013-650.
Number of women with at least one retinography: 2005-14/2006-81/2007-228/2008-307/2009-282/2010-272/2011-310/2012-269/2013-407.
Number of women with at least one physical examination of feet: 2005-1/2006-74/2007-142/2008-416/2009-258/2010-254/2011-456/2012-255/2013-384.
Conclusions: The clinical management of diabetes through integrated care processes makes it easier to record quality indicators. The standardization of the quality criteria improves monitoring of chronic patients. Percentages of retinography, physical examination of feet and determination of glycosylated haemoglobin reach targets after seven years of implantation of integrated care processes.

POSTER 03

Algorithms in type 2 diabetes management do not reflect physicians' knowledge of the benefits of early treatment

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Aims: Early treatment of T2DM improves glycaemic control and reduces the risk of complications. This survey aimed to investigate whether physicians' knowledge about the beneficial effects of early pharmacological intervention in T2DM translates into treatment algorithms in clinical practice.
Design and method: We conducted a 20-minute online survey in Brazil, Japan, India, Spain, the UK and USA, enrolling 652 adult T2DM patients and 337 physicians (264 general practitioners – GPs – and 73 specialists), who spend at least 70% of their time attending the targeted patients per month (>50/GPs, >100/specialists).
Results: Half the physicians acknowledged that early treatment using combination therapy is important, supports glycaemic control and reduces the risk of complications. However, in clinical practice, physicians rarely (8%) reported the use of combination therapy as first-line, whereas the majority (66%) reported this as second-line therapy. Remarkably, 23% of patients were not prescribed medication at first consultation. Overall, 56% of patients reported having had a medication switch or addition to the initial treatment; the mean time before treatment changes was 8.8 months. On average, patients with renal impairment continued on a failing monotherapy for fourweeks before treatment was intensified. For patients aged 50+ and 80+ years, the required initiation of combination treatment may take up to 7 weeks. Among physicians, the main triggers for treatment change were hypoglycaemia (47%) or lack of glycaemic control (46%), often due to lack of adherence to diet and exercise regimens.According to physicians, >60% of patients in all patient categories reported that difficulties in exercising enough or making the necessary diet changes were the main barriers to achieving glycaemic targets.

Conclusions: These findings suggest that there might be communication gaps in the healthcare partnership(s) around the benefits of treating T2DM early and aggressively, using combination therapy.

POSTER 04

Expectations and aspirations of elderly patients and physicians with type 2 diabetes

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Aims: Diabetes is reaching epidemic proportions in an ageing society, with physicians dealing with growing numbers of elderly patients. We explored perceptions of diabetes in younger vs elderly patients among physicians who care for them on a daily basis.
Design and method: We conducted a 20-minute online survey in Brazil, Japan, India, Spain, the UK and USA, enrolling 652 adult T2DM patients and 337 physicians (264 general practitioners – GPs – and 73 specialists). Physicians were required to treat a minimum number of patients (GPs: >50; specialists: >100) and to spend at least 70% of their time in direct patient care.
Results: Despite anticipating that only 14% of elderly (80+ years) and 36% of middle-aged (50+ years) patients would comply with diet and exercise, physicians prescribed initial lifestyle intervention alone to similar proportions of these patients (25% vs 27%, respectively). Second-line therapies (after metformin) were also evenly distributed, regardless of age, among DPP-4 inhibitors (17% and 18%, respectively) and sulphonylureas (11% and 15%, respectively). Physicians expected only around one-third of 80-year-olds and half of 50-year-olds to take their medications as prescribed, the most common reasons being \'forgetfulness\' (85%) and polypharmacy (72%) in elderly, and dislike of medications (63%) in younger patients. Adverse effects were listed by physicians as a compliance issue in both age groups (56% in 80+, 36% in 50+). Hypoglycaemia triggered a switch in medication in 52% of 80-year-olds and 41% of 50-year-olds. Physicians expected approximately half the patients to achieve target HbA1c, independent of age (44% in 80+, 52% in 50+).
Conclusions: Physicians believe that elderly T2DM patients are less likely to adhere to lifestyle changes or pharmacotherapy than younger patients, but implement age-independent approaches to treatment strategies. Prospective work is required to verify these low expectations, and the appropriateness of current glycaemic targets and treatment algorithms for older adults.

POSTER 05

Diabetic retinopathy in Catalonia: prevalence and association with cardiovascular outcomes

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Aims: To estimate the prevalence and severity of diabetic retinopathy (DR) in patients with type 2 diabetes (T2DM) screened by retinal photography (RP) in primary health care centres in Catalonia, and to determine cardiovascular outcomes associated with the presence of DR.
Design and method: Descriptive cross-sectional population study of T2DM patients at 31/12/2012 (N=329,410) with RP (the last RP recorded between 01/01/2008 and 31/12/2012). 33 % were selected (N=108,723). DR was classified as normal, non-VTDR and VTDR. Cardiovascular disease (CVD) was defined as having stroke or coronary heart disease (CHD). Clinical information was obtained retrospectively from the SIDIAP database (Information System for the Development of Research in Primary Care).
Results: Of the patients analysed (55% men), the mean age was 66.9 years (SD 11). Mean duration of T2DM was 7.8 years (SD 5.1). Prevalence of any DR was 12.3% (95%CI: 12.1-12.5). Vision threatening diabetic retinopathy (VTDR) was 1.4% (severe non-proliferative retinopathy 0.8%– n=944), proliferative retinopathy 0.4% (n=400) and maculopathy 0.2% (n=199). Patients with any DR had higher HbA1c mean value (7.8% *vs* 7.2%) and prevalence of hypertension (85.2% *vs* 79.3%), glomerular renal filtration <60 ml/min (MDRD) (26.1% *vs* 18.9%) and albumin-creatinine ratio > 30 mg/g (27.4% *vs* 15.5%) than the rest. In the multivariate analysis of CVD the effect of DR was: non-VTDR (OR 1.24 95%CI:1.15-1.34; p<0.001) and VTDR (OR 1.32 95%CI:1.09-1.60; p<0.005); regarding stroke: non-VTDR (OR 1.44, 95%CI:1.29-1.62; p<0.001) and VTDR (OR 1.73, 95%CI:1.33-2.27; p<0.001); and finally, CHD: non-VTDR (OR 1.12, 95%CI:1.03-1.22; p=0.008) and (OR 1.14, 95%CI:0.91-1.42; p=0.246).

Conclusions: The prevalence of any DR screened by RD was not low, but VTDR was very low. DR was associated with a higher prevalence of hypertension, renal function impairment and albuminuria.The presence of any kind of VTDR was related to stroke and CVD, and non-VTDR also to CHD.

POSTER 06

Type 2 diabetes patients over 65 years in primary health care: analysis of population- based details on risk factors and metabolic control

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Aims: To describe and compare clinical characteristics of T2DM patients in primary care in Catalonia stratified by age, including metabolic control, treatments and therapeutic goals with special interest in patients > 65 years.
Design and method: Cross-sectional study, based on a population register (SIDIAP – Information System for the Development of Research in Primary Care – database of the Catalan Health Institute) that included all patients ≥ 30 years with T2DM during the year 2011. Variables: Demographic (sex, age) and anthropometric measures, glucose, HbA1c, lipid profile, blood pressure, antidiabetic and other cardiovascular risk factors treatment. *Statistical analysis*: Descriptive statistics of subgroups comparing categorical data according to sex and age. Chi-square test for comparisons.
Results: A total of 318,020 patients with T2DM (53.8 % men), 120,627 age ≤ 65 years (63.0% men), 93,729 of 66-75 years (54.4% men), 82,233 of 76-85 years (45.2% men) and 21,431 > 85 years (33.8% men) were included. The oldest age groups, despite having greater disease progression, showed better glycaemic control than patients ≤ 65 years. Macrovascular complications were more frequent in the older age groups and amongst men. Insulin use was more common in older age groups, reaching 16.1% (men) or 18.7% (women) among > 85 years.

Table. Percentage of patients with the conditions in each group of age and sex

	MEN				WOMEN			
	≤ 65 years	66-75 years	76-85 years	> 85 years	≤ 65 years	66-75 years	76-85 years	> 85 years
HbA1c ≤ 7%	50.7	56.2	57.1	60.9	52.3	53.5	55.9	60.3
BP<140/90 mmHg	67.3	65.5	65.7	65.9	71.0	64.0	61.9	62.5
LDL<130 mg/dl (PP) or 100 (PS)	51.9	62.7	62.9	59.8	49.9	59.4	60.2	53.7
Non smoker	70.3	84.6	91.5	95.7	85.0	97.2	99.1	99.5

Conclusions: The metabolic control of T2DM in the population over 65 was better than in younger patients.This result suggest that T2DM in older people is an entity with significant differential aspects.

POSTER 07

Diabetes mellitus prevalence among the Romany population in the area of Porriño

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Aims: The prevalence of diabetes mellitus (DM) among the Romany population is considered higher than among the general population, but there is no data in the literature to confirm this. This is why the Romany population from the area of Porriño was examined to ascertain their DM prevalence.
Design and method: A cross-sectional and observational study was designed to include all the members of the Romany community from Porriño aged ≥18 years. Porriño has a large Romany population and only one public health centre. The Romanies who did not have the right to be attended by the National Health System and those who did not have any blood tests were excluded. Medical records were reviewed and gender, age, DM diagnosis, fasting plasma glucose and glycated haemoglobin were recorded. All those who presented fasting plasma glucose ≥ 126 mg/dl, glycated haemoglobin ≥ 6.5% or previous diagnosis of diabetes were considered diabetic. DM prevalence, average age and gender distribution were calculated.

Results: 261 Gypsies aged ≥ 18 years from the Public Health Centre were included in the study. 56.4% of them were women, with an average age of 40.7 years old (18-83). 57 of them met the criteria of DM, representing a prevalence of 21.84%, with an average age of 53.3 years old.
Conclusions: DM prevalence among the Romany population in the area of Porriño is higher than among the Spanish general population. This hypothesis deserves to be further investigated utilising specifically designed broader studies.

POSTER 08

Use of capsaicin in our patients with diabetic neuropathy

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Aims: To evaluate the efficacy of topical capsaicin in roll-on cream compared with cream in painful diabetic neuropathy. Secondary aims: To evaluate the safety of the product, quality of life, adherence and degree of complacency about treatment.
Design and method: Clinical trial phase IV, multicentre, crossover, randomized, controlled and open; 22 weeks duration in diabetic patients ≥ 18 years with type 1 or 2 DM with HbA1c <10.5 %, painful diabetic neuropathy (VAS > 4). Participating doctors and nurses from 45 primary care centers and fiveSpanish hospitals (September 2010 - December 2014). During eight weeks, patients were administered a topical cream or solution applicable in roll-on with a washout period of four weeks between the two treatments and afterwards two weeks of follow up. Eleven visits and five tests were performed and passed. The primary outcome was pain reduction assessed using a Visual Analogue Scale (VAS).
Secondary objectives were evaluated by: European Quality of Life Questionnaire EQ- 5D by T. Morinsky-Green (compliance and adherence to treatment), complacency questionnaire of the treatment and dermatological assessment on the painful area.
Results: Until February 2014, our primary care centrerecruited 14 patients with an average age of 67, nine males and five females. There was an improvement of > 5 VAS points in six patients, an improvement of the perception of pain in seven patients and of health status in 12. Good compliance in ten patients. Exploration with monofilament improved in 11. All of them preferred topical capsaicin in roll-on. In one case erythema appeared in a painful area.
Conclusions: The application of topical capsaicin reduces pain of diabetic neuropathy in most of our patients, presents minimal dermal side effects, good adherence, treatment compliance and preference of roll-on presentation.

POSTER 09

What processes of change are elaborated during experiential educative counselling based on the patient-centred care model (PCC) with type 2 diabetes patients in general practice?

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Aims: Education counselling is essential to favour behaviour change in order to improve glycemic control in type 2 diabetes patients. The Transtheoretical Model (TTM) model of Prochaska allows experiential and behavioural processes of change associated with self-efficacy (Bandura) and decisional balance (Janis). We undertook qualitative research to investigate processes of change within an experiential educative counselling based on a patient-centred care model (PCC).
Design and method: In the setting of exploratory phenomenological qualitative research, we have tested experiential educative counselling with ten type 2 diabetes volunteer patients according to purposive sampling. This educational counselling included empathic listening to patient perspectives (lived experience, belief, expectation, preference), explanation about diabetes, adapted hygieno-dietetic counselling with an objective of common ground. The progression to the action or maintenance stage for the target behaviour wasevaluated after three months. Atriangulation between tworesearchers allowed analysing processes of behavioural changefrom patients' verbatims. A cross-sectional thematic analysis has been undertaken with the help of NVivo 9 software. We have made a theoretical triangulation with the Prochaska model.
Results: Mostly, patients constructed change through processes of consciousness raising (6/10), dramatic relief (3/10), self-reevaluation (4/10), self-liberation (2/10), environmental reevaluation (1/6), helping relationships (7/10), counterconditioning (2/10), stimulus control (8/10), interpersonal control (2/10), reinforcement management (3/10)and focused problem coping (4/10). Some of them (6/10) took into account their successful lived experiences of change to improve their self-efficacy. Others (3/10) expressed ambivalence between the "pros and cons" of change. One patient didn't have the benefit of this PCC educational counselling in a context of reactional depression.

Conclusions: PCC educative counselling allowed a process of change in type 2 diabetes patients in accordance with Prochaska's model.

POSTER 10

The analysis of results of new guideline implementation for diabetes primary care in the Kiev region of Ukraine

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Aims: We have developed the national diabetes care guidelines that were approved by the Ukrainian Health Ministry in December 2012 and provides the transfer of diabetes management from secondary to primary care. The aim was to analyse the health of the population and the adherence of general practitioners (GPs) to the guidelines one year after their implementation in the Kiev region.
Design and method: We analysed statistical reports on the Kiev region's medical establishments and conducted a cross-sectional survey of 44 GPs (age = 39.2±1.9 years, work experience = 5.7±0.8 years; 16 rural, 28 urban). Statistical analysis was in Excel 2007, SPSS.
Results: Regional diabetes prevalence in 2013 was 356.9x10,000, which was 4.6% higher than in 2012. The growth rate of diabetes prevalence in the region over aten-year period was 42.6%, equal to Ukraine, but lower than the rest of the world. In 2013, regional diabetes prevalence of complications was 173.1x10,000, which was 5.0% more than in 2012. Overthe past five years, the prevalence of diabetes complications has grownby 13.9%. Diabetes complications in 2013 were registered in 48.5 % diabetes patients.
The regional GP to patient ratio is insufficient: 1.0x10,000. According to our survey, GPs indicated they care for 21.8±3.7% diabetes patients. However, a year after our guidelines were implemented only 50% GPs had read it. The level of target achievement is also low. The GPs indicated only 41.6±5.2% of diabetes patients achieved the target of HbA1c ≤7%; 41.0±4.1% achieved blood pressure ≤140/80mmHg and 28.4±3.9% achieved cholesterol ≤4,5mmol/l; only 69.2±4.9% patients take antihypertensive drugs and 48.3±5.7% - lipid-lowering therapy.
Conclusions: The prevalence of diabetes and its complications has increased in the Kiev region and Ukraine, but at a slower pace than the global trend due to low detection or statistical data. Adherence to the guidelinesduring the early stages of their implementation is insufficient due to the GPs' lack of knowledge about their existence. We began to conduct additional training of GPs and issued a manual on the management of diabetes in primary care.

POSTER 11

Patients with prediabetes in primary care (PREDAPS study): incidence of diabetes and factors associated with its occurrence during the first year of follow-up

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Aims: To estimate the incidence of diabetes in subjects with prediabetes and assess factors associated with the appearance of this illness during the first year of follow-up.
Design and method: The data comes from the PREDAPS study, a prospective observational study of a cohort of 1,184 subjects with prediabetes and another cohort of 838 subjects without alterations in glucose metabolism. The data at baseline were obtained from patients seenat primary care centers in Spain throughout 2012. The criteria for prediabetes were fasting blood glucose level between 100 and 125mg/dl and/or HbA_{1c} level between 5.7 and 6.4%. Information on risk factors associated with the development of diabetes was recorded at baseline. A year after the first follow-up, patients were seen to assess the occurrence of diabetes. A multivariable logistic regression model was used to assess the risk factors associated independently with the appearance of this illness in subjects with prediabetes.
Results: The incidence of diabetes was 4.1% in subjects with prediabetes and 0.3% in subjects without alterations in glucose metabolism. Male gender, the presence of a family history of diabetes mellitus and consumption of any amount of alcohol were independently associated with the development of diabetes mellitus in the cohort of subjects with prediabetes, with odds ratios (95% confidence interval) of 2.38 (1.13 to 4.98), 1.99 (1.04 to 3.81) and 0.41 (0.21 to 0.83), respectively.
Conclusions: The incidence of diabetes in subjects with prediabetes was 14 times higher than in subjects without prediabetes. In subjects with prediabetes the factors associated with an increased risk of diabetes during the first year of follow-up were male sex and having a family history of diabetes, while drinking some amount of alcohol was found to be a protective factor. Both cohorts will be followed for years to learn some aspects of the natural history of diabetes.

POSTER 12

Efficacy of once weekly dulaglutide compared with twice daily (bid) exenatide in patients with type 2 diabetes mellitus (T2DM): a post-hoc analysis of the influence of baseline HbA1c in AWARD-1

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Aims: To investigate the response to long- and short-acting glucagon-like peptide-1 receptor agonists based on baseline HbA_{1c} levels. The Assessment of Weekly AdministRation of LY2189265 in Diabetes-1 (AWARD-1) trial compared once weekly dulaglutide 1.5 mg and once weekly dulaglutide 0.75 mg to placebo and exenatide 10µg bid in patients with T2DM on metformin and pioglitazone.
Design and method: The changes from baseline in HbA_{1c} and percentages of patients reaching HbA_{1c} targets (<7.0%, ≤6.5%) with dulaglutide 1.5 mg and dulaglutide 0.75 mg at 26 weeks were analysed by baseline HbA_{1c} (<8.5%, ≥8.5%) and compared with placebo and exenatide. Results are presented (LS mean [SE]) for the change from baseline in HbA_{1c} and percentages achieving glycaemic targets, the <8.5% group followed by the ≥8.5% group.
Results: The LS mean changes from baseline in HbA_{1c} for dulaglutide 1.5 mg (–1.16 [0.07]%; –2.37 [0.10]%) were greater compared with placebo (0.17 [0.10]%; –0.76 [0.16]%] and exenatide (–0.64 [0.07]%; –1.86 [0.11]%) (p< 0.001, all comparisons). For both baseline groups, significantly more dulaglutide 1.5 mg patients reached targets of <7% (92%, 47%) and ≤6.5% (80%, 26%) compared with placebo (<7%: 55%, 10%; ≤6.5%: 32%, 3%) and exenatide (<7%: 65%, 21%; ≤6.5%: 50%, 9%) (p< 0.05, all comparisons). Dulaglutide 0.75 mg also demonstrated significant changes for both baseline groups vs placebo (p < 0.05, both outcomes; all comparisons). Statistical significance was not achieved when comparing dulaglutide 0.75 mg with exenatide in the baseline HbA1c ≥8.5% groups.
Conclusions: Regardless of baseline HbA_{1c}, once weekly dulaglutide 1.5 mg and once weekly dulaglutide 0.75 mg showed a robust reduction in HbA_{1c} in this population of patients with T2DM.

POSTER 13

A post-hoc pooled analysis of two placebo controlled phase 3 trials (AWARD-1 and AWARD-5): once weekly dulaglutide compared with exenatide, sitagliptin, and placebo

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Aims: To compare once weekly dulaglutide 1.5 mg and once weekly dulaglutide 0.75 mg with placebo at 26 weeks, and with sitagliptin 100 mg once daily (AWARD-5) and exenatide 10 µg twice daily (AWARD-1) at 26 and 52 weeks in patients with type 2 diabetes with a mean baseline HbA_{1c} of approximately 8%.
Design and method: Data from the dulaglutide 1.5 mg, dulaglutide 0.75 mg or placebo arms were pooled by treatment. Comparisons were made for change (LS mean [SE]) in HbA_{1c} and percentage of patients achieving HbA_{1c} targets of <7% and ≤6.5% at 26 weeks and 52 weeks.
Results: At 26 weeks, dulaglutide 1.5 mg and dulaglutide 0.75 mg showed reductions in HbA_{1c} of –1.34 (0.05)% and –1.12 (0.05)%, respectively, that were significantly greater than those for exenatide (–0.80 [0.06]%), sitagliptin (–0.74 [0.06]%) and placebo (–0.15 [0.06]%) (p< 0.001,all comparisons). More patients achieved an HbA_{1c}<7% with dulaglutide (1.5mg: 69%; 0.75mg: 60%) compared with exenatide (52%), sitagliptin (38%) and placebo (30%) (p< 0.001, all comparisons). Similar results were demonstrated for both dulaglutide doses at the ≤6.5% target compared with exenatide, sitagliptin and placebo (p < 0.001, all comparisons). At 52 weeks, both dulaglutide 1.5 mg and 0.75 mg showed a greater HbA_{1c} change from baseline compared with exenatide and sitagliptin, with more patients achieving an HbA_{1c} of <7% and ≤6.5% (p < 0.001, all comparisons).
Conclusions: Compared with other commonly used incretin-based therapies, once weeklydulaglutide showed superior efficacy demonstrable up to 52 weeks. These robust reductions in HbA_{1c} were observed despite a relatively low mean baseline HbA_{1c}.

POSTER 14

Patient-reported outcomes (PRO) from a 104-week, phase 3, randomised, study (AWARD-5) comparing once weekly dulaglutide to sitagliptin and placebo in metformin-treated patients with Type 2 diabetes

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Aims: To evaluate PRO data from the Assessment of Weekly Administ Ration of LY2189265 in Diabetes-5 (AWARD-5) trial.

Design and method: 1098 patients (mean age 54.1 years; HbA_{1c} 8.1%; weight 86.4 kg; diabetes duration 7.1 years) were randomised to once weekly dulaglutide 1.5 mg or 0.75 mg, sitagliptin 100 mg once daily, or placebo only (switched to sitagliptin after 26 weeks) in a 2:2:2:1 ratio. 831 (75.7%) completed the 12-month visit. PRO measures for IWQoL-Lite and EQ-5D were administered at baseline, 26, 52, 78 (only IWQoL-Lite) and 104 weeks (analysis LOCF ANCOVA).
Results: Both dulaglutide doses showed a greater decrease ($p < 0.001$) vs sitagliptin in HbA_{1c} at 52 and 104 weeks; dulaglutide 1.5 mg showed a greater decrease ($p < 0.001$) vs sitagliptin in body weight. Significant ($p < 0.05$) improvements from baseline were observed in EQ-5D visual analogue scale scores at 26 weeks (dulaglutide 1.5 mg, sitagliptin), 52 weeks (dulaglutide 1.5 mg), and 104 weeks (dulaglutide 1.5 mg, 0.75 mg, sitagliptin). EQ-5D UK population index scores did not significantly change from baseline (all groups). Significant improvements from baseline were observed in all groups in IWQoL-Lite total score as well as physical functioning and self-esteem domain scores (52, 78, 104 weeks). The improvement in total score was significantly larger with dulaglutide vs sitagliptin at 78 (1.5 mg, 0.75 mg) and 104 (1.5 mg) weeks. Some other domain scores also significantly improved with dulaglutide and sitagliptin post-baseline.
Conclusions: Dulaglutide and sitagliptin showed improvements from baseline in EQ-5D VAS scores and IWQoL-Lite total scores. Improvement in IWQoL-Lite total scores was greater with dulaglutide vs sitagliptin.

POSTER 15

Effect of once weekly dulaglutide (DU) on glycaemic control in patients with different durations of type 2 diabetes mellitus

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Aims: Once weekly subcutaneous DU significantly reduced glycated haemoglobin (HbA_{1c}) after 26 weeks' treatment in patients with T2DM in the placebo-controlled clinical trials AWARD-5 (in combination with metformin) and AWARD-1 (with metformin and pioglitazone). This *post-hoc* analysis investigated the effect of DU on glycaemic control, based on diabetes duration.
Design and method: AWARD-1 and AWARD-5 data were pooled for patients who received DU 1.5 mg, DU 0.75 mg or placebo. Changes from baseline to 26 weeks in HbA_{1c} in each of three categories of diabetes duration (<5, ≥5 to <10, and ≥10 years) were assessed by mixed model for repeated measures (MMRM). The same analysis was conducted for change from baseline weight.
Results: Overall, 1483 adult patients in the combined intention-to-treat population were analysed. There were no obvious differences in baseline characteristics between treatment groups according to diabetes duration. In all categories of diabetes duration, DU significantly reduced HbA_{1c} from baseline (table). Treatment differences in HbA_{1c} did not vary significantly between diabetes duration categories (interaction p=0.09). Similarly, in all categories, DU significantly reduced body weight from baseline (p<0.001, both doses, all categories), and treatment differences in weight also did not vary between diabetes duration categories (interaction p=0.09).

Table. Least squares (LS) mean (standard error [SE]) change in HbA_{1c} from baseline at 26 weeks – MMRM model

Duration of diabetes	DU 1.5 mg	DU 0.75 mg	Placebo
< 5 years	(n = 183) –1.30 (0.07)**	(n = 155) –1.19 (0.07)**	(n = 93) –0.32 (0.09)**
≥ 5 to < 10 years	(n = 180) –1.39 (0.07)**	(n = 188) –1.03 (0.07)**	(n = 85) –0.07 (0.10)†
≥ 10 years	(n = 168) –1.50 (0.07)**	(n = 185) –1.26 (0.07)**	(n = 68) –0.13 (0.11)†

**p<0.001, †p>0.050, for within group change from baseline.

Conclusions: Irrespective of diabetes duration, DU 1.5 mg and DU 0.75 mg significantly improved glycaemic control and weight after 26 weeks of treatment in patients with T2DM.

POSTER 16

Screening strategies for early detection of type 2 diabetes mellitus

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Aims: To make an early diagnosis of T2DM, in people at high risk of diabetes, especially in subjects with impaired fasting glucose (IFG), 5.6-6.9 mmol/L (100-125 mg%), based on the oral glucose tolerance test (OGTT).
Design and method: prospective study lasting 12 months, led, in primary care,by 19 general practitioners in the Province of Palermo (Italy); The screening program is divided into two phases. Phase 1: identification of patients at high risk of diabetes. Phase 2: screening tests for early detection of T2DM or other disorders of glucose metabolism, impaired fasting glucose (IFG) and impaired glucose tolerance (IGT). The measurement of fasting glucose will be carried out as an initial test among people at high risk of diabetes. T2DM diagnosis will be made in the case of blood sugar => 126 mg% (confirmed on at least two different occasions where there were absent disease symptoms). If blood sugar is between 100 and 125 mg% (IFG), an oral glucose tolerance test (OGTT) will be done, to speed up early identification of subjects with T2DM or IGT.
Results: Results of a first release after six months from the beginning of the study. The population consisted of 22668 people who were 49.4 % high-risk T2DM; 33.3 % of the latter had an impaired fasting glycaemia (IFG). A sample of 423 individuals with IFG was then subjected to an oral glucose tolerance test (OGTT), on the basis of which 71 people, or 16.78%, were identified with IGT and 33 people, representing 7.80 %, were identified with T2DM.
Conclusions: In primary care, a proactive approach towards diabetes screening and, especially, performing OGTT in subjects with impaired fasting glucose (IFG), facilitate early diagnosis of T2DM, reducing the percentage of cases of undiagnosed diabetes. The implementation of screening programmes, also lets you identify subjects with IFG and/or IGT, disorders of glucose metabolism, predicting the future development of T2DM.

POSTER 17

A study of a hypertensive and diabetic population in a region, appraisal and post intervention evolution, 2006-2012

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Aims: To describe a diabetic and hypertensive population by sociodemographic and clinical factors and improve the clinical register and attention.
Design and method: Design: A cross-sectional study between 2006 and 2012, with an intervention in 2006. Setting: A Catalan local health area with 90,340 assigned patients.
Study population:Hypertensive diabetic patientsassigned and seen ≥ 15 years. Intervention:Consisted of sessions in each health centre with explanation of results and protocols to be followed in order to improve the register. Variables: Sex, age, degree of control of DM and HTA, cardiovascular risk factors (CRFS) and other clinical variables. Statistical analysis**:** Frequencies and p-value associated with Fisher's exact test with a 95% confidence level (SPSS 18).
Results: Degree of control of HTN < 140/90 mmHg improved (45.9%-58.2%). Good control of DM (<7%) and HTN improved (23.1%-36.3%). HbA1c > 8% decreased (22.1%-16.8%) and in 2012 was associated with age (p<0,001). Men % increased (50.7-54.2), 65-79 years old group was the dominant (50.1%-44.8%) and increased ≥ 80 years population (21.2%-28.5%). Smokers remained at 10%. Obesity increased (44.2%-46.5%). Abdominal obesity increased (66.8%-68.6%). LDL-c < 100 mg/dl increased (39.7%-53.9%). MAU remained and proteinuria increased. FG (MDRD-4) < 60 mg/ml decreased (30.9%-29.4%), mortality increased (3.5%-5.4%). Related clinical diseases (RCD) and/or target organ damage (TOD) increased (55.7%-60.4%).
Conclusions: The intervention seemed to be effective in improving the clinical register and the degree of control of chronic conditions. The increase of RCD/TOD can be attributed in part to the aging population.

POSTER 18

Effect of once weekly dulaglutide on glycaemic control in patients with type 2 diabetes mellitus and body mass index

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Aims: The once weekly glucagon-like peptide-1 receptor agonist dulaglutide significantly reduced HbA_{1c} after 26 weeks of treatment in patients with T2DM in the phase III placebo-controlled clinical trials AWARD-1 (dulaglutide

+ metformin + pioglitazone) and AWARD-5 (dulaglutide + metformin). This *post-hoc* analysis investigated the effect of dulaglutide on glycaemic control based on body mass index (BMI).
Design and method: AWARD-1 and AWARD-5 data were pooled for patients who received once-weekly subcutaneous dulaglutide 1.5 mg, dulaglutide 0.75 mg or placebo. Changes from baseline to 26 weeks in HbA_{1c} and weight in patients with baseline BMI <30 kg/m^2 or ≥ 30 kg/m^2 were assessed with a mixed model for repeated measures. Changes in BP and lipids were also assessed.
Results: The combined ITT population of 1483 adult patients was analysed. There were no major differences between treatment groups within each BMI subgroup for baseline characteristics. In these BMI subgroups (<30 kg/m^2 or ≥ 30 kg/m^2), LS mean (SE) changes from baseline in HbA_{1c} were: -1.45 (0.07)% and -1.36 (0.05)%, respectively, with dulaglutide 1.5 mg, -1.23 (0.06)% and -1.12 (0.05)%, respectively, with dulaglutide 0.75 mg ($p<0.001$ for all), and -0.24 (0.09)% and -0.14 (0.07)% respectively, with placebo. Treatment differences in HbA_{1c} did not vary significantly between BMI subgroups (interaction $p=0.43$). In both BMI subgroups, LS mean (SE) body weight significantly decreased from baseline in the dulaglutide arms ($p<0.001$) and did not change in the placebo arms. Treatment differences in weight also did not vary between BMI subgroups (interaction $p=0.19$). No clinically relevant changes were observed for BP or lipids in either BMI subgroup.
Conclusions: Irrespective of baseline BMI subgroup, dulaglutide 1.5 mg and dulaglutide 0.75 mg significantly improved glycaemic control and weight after 26 weeks of treatment in patients with T2DM.

POSTER 19

Control adaptation of our elderly diabetic patients to clinical practice guidelines

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Aims: To assess the control and treatment suitability of our elderly diabetic patients to the major Spanish diabetes societies' recommendations. To describe the clinical features of elderly patients with diabetes.
Design and methods: Cross-sectional study. Population: Patients > 70 years, type 2 diabetes, independent for living live, without terminal illness. Sample size: 120 patients. The variables of age, sex, glycosylated haemoglobin (Hb A1c), number of drugs, benzodiazepines or antihypertensive therapy, the type of hypoglycaemic drug and the presence of suggestive symptoms of hypoglycaemia, were collected from the computer program "Diraya". Analysis: The control adequacy was assessed by HbA1c and the first and second steps were noted in order to assess the suitability of treatment to elderly guidelines. Statistical analysis was performed using analysis of variance or Student's t-test for quantitative variables and Chi-square test for qualitative variables.
Results: mean age 77.18 ± 5.1 years, 32.7% male. The mean BMI was 30.26 ± 5.14. 42.3% obese and 48.1% overweight. The average drug utilization 6.67 ± 3.36. 17.3% take more than nine drugs. Taking benzodiazepines 26.9%, 80.8% and antihypertensive drugs. Mean HbA1c was 6.47%, with 55.5% below 7%. The treatment of only 3.70% of patients was diet related, metformin was prescribed to 70.37%, followed by 29.62% with gliptins, and 22.21% with sulfonylureas. None had treatment with glitazone or GLP1 agonist. 22.23% were treated with insulin.
Conclusions: 55.5% of elderly patients have Hb A1c <7% , with high risk of hypoglycaemia. Most of our elderly patients with diabetes have metformin as the first step treatment (70.37%) and a DPP4 inhibitor as a second step. The control adequacy is not appropriate because many of them have lower Hb A1c than indicatedby clinical guidelines, with the risk of hypoglycaemia. The treatment fits the recommendations of the Spanish diabetes guidelines. By following the expert recommendations for these vulnerable patients we minimized the presence of side effects, mainly hypoglycaemia.

POSTER 20

Qualitative study about ten symbolic interactions between physicians and type 2 diabetes patients using an educational patient-centred approach

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Aims: The educational "patient-centred" approach applied to type 2 diabetes patients requires building up a "common ground-shared understanding" favouring a relationship and therapeutic alliance. This relationship can express itself through a symbolic interaction, during which each of the protagonists offers the other a symbolic front in order to elaborate his own "character" on the social stage (E Goffman's dramaturgical sociology). How can this interactionism be expressed during a "medical dramaturgy" between type 2 diabetes patients and their general practitioner. Which impact does it have on shared understanding and the therapeutic relationship?

Design and method: Analysis and comparison often diabetic patients' and their five physicians' "cross-talks" on their interaction, in order to put forward "drama-characters", the "common ground-shared understanding" and its impact on the relationship. A cross-sectional thematic analysis has been undertaken with the help of NVivo 9 software. We have made a theoretical triangulation with the symbolic interactionism and ethnomethodology of E Goffman.
Results: Three interactions were marked by a concordant "common ground-shared understanding" in a relational climate of confidence and open-mindedness, with a good therapeutic alliance and shared expectations between the various "characters".
Three interactions seemed less concordant on the "commonground-common understanding", whereas a trusting relationship and open-minded climate remained.
Four interactions showed a discordant "common ground-common understanding", a nearly closed relationship and a problematic therapeutic alliance. They were due to drama-characters inducing a transferential relation that was difficult to contain.
Conclusions: Symbolic interactionism relies on three components of the patient-centred approach: the common ground, the therapeutic relationship, and the physician's reflexivity "as a person". It enables to get in the systemic "meta" position. The interest in the "character's symbolic face"which both patient and physician playin their interaction enables us to better understand the issues influencing the therapeutic relationship, specifically from a transferential point of view.

POSTER 21

The feasibility of individualised glycaemic targets in elderly T2DM patients and the factors impacting target-setting: the INTERVAL study

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Aims: The benefits of aggressive glycaemic control in elderly T2DM patients are being increasingly questioned, with guidelines suggesting individualising of treatment targets without any evidence-base. We studied the feasibility of individualised glycaemic target-setting, and the factors influencing the targets, in a clinical trial in elderly T2DM patients.
Design and method: In this multinational, double-blind, placebo-controlled, 24-week study, 278 drug-naïve or inadequately controlled elderly (≥70 years) T2DM patients were randomised 1:1 to vildagliptin or placebo. Investigators were asked to individualise treatment targets for patients based on age, baseline HbA1c, comorbidities, polypharmacy, frailty status (modified Fried definition) and local recommendations for glycaemic targets.
Results: Mean age and T2DM duration were 74.8±4.2 and 11.4±7.5 years, respectively. Most patients (76.6%) had mild or moderate renal failure and 9.4% were frail. Average targeted individual HbA1c reduction was -0.9% (range -4.4% to -0.1%), despite a mean baseline of 7.9%. Higher baseline HbA1c ($p<0.001$) and male (patient) gender ($p=0.026$) predicted more aggressive target-setting, while T2DM duration, age and polypharmacy showed no significant effect. The impact of frailty, which showed a trend towards significance overall ($p=0.062$), differed across countries; in Germany, frail patients were set 1% less aggressive targets ($p=0.002$), whereas in the UK frailty made no impact ($p=0.953$). Patient education and intensified interactions alone (placebo) seemed efficacious, especially in countries with presumed deficiencies in general counselling. Overall, 27% of patients reached their targets in the placebo group, while the response range (7.7% – 58.8%) indicates opportunities for non-pharmacological intervention in most countries.
Conclusions: INTERVAL was a unique study demonstrating the feasibility of setting individualised targets when optimising diabetes management in elderly patients. Additional to the impact of HbA1c levels, gender and frailty, the results also indicated that country-specific local guidelines strongly influenced target-setting. Patient education and optimisation of overall care provide additional opportunities for non-pharmacological management of T2DM.

POSTER 22

The use of glycated haemoglobin (A1C) improves the diagnosis of diabetes more than the use of only fasting glucose

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Aims: In 2009, a committee of international experts from the ADA, EASD and IDF recommended HbA1c for the diagnosis of diabetes. The diagnosis was made when HbA1c ≥ 6.5 % and a preventive action was required when the HbA1c < 6.5 % but ≥ 6.0 %. The diagnosis had to be confirmed by a second sample. The confirmation was not required in patients with symptoms of diabetes and plasma glucose > 200 mg /dl (> 11.1 mmol/l). We wanted to

evaluate the sensitivity of HbA1c compared to fasting glucose in the diagnosis of the prevalence of diabetes in patients with blood glucose between 100 and 110.
Design and method: Six general practitioners screened 600 non-diabetics with fasting blood glucose between 100 and 110. In order to make a standardized assay we used a device (Bayer A1CNow) which allows the determination of HbA1c of capillary blood. This device has been validated by the National Glycohemoglobin Standardization Program – USA. The results are comparable to the values obtained by HPLC. All subjects who fasted for 12 hours were assayed for glucose and HbA1c. The HbA1c assay was repeated again after a week if > 6.00 %.
Results: The population was made up of 57.14 % males and 42.86% females, with a mean value of age (59.82±14.17), BMI (28.23±6.50) and HbA1c (5.71±0.49%). In fasting blood glucose among the non-diabetic population, using HbA1c as diagnostic markers of diabetes, 9% were pre-diabetic (HbA1c between 6.1 - 6.4%) and 2% were diabetic (HbA1c > 6.5%).
Conclusions: The data obtained was worthy of validation on a larger population and suggests the use of HbA1c as a screening test for diabetes in the general practice setting, highlighting that a population at risk can't be evaluated only with fasting plasma glucose, which requires intervention for the prevention of cardiovascular risk.

POSTER 23

ORACLE (Observational Research about AntidiabetiC drugs in generaL practicE)

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Aims: The goals for management in T2DM are well defined and effective therapies are available.Practice guidelines have been disseminated but, despite such advances, health care providers often do not intensify therapy appropriately. Such behaviour is called clinical inertia. The aim of the study is to verify, in T2DM using metformin alone or with sulfonylureas/repaglinide and with glycated haemoglobin (A1c) >7.0%, over a 12-month period (T0=first visit-T1=after six months-T2=after 12 months), if the treatment is intensified.
Design and method: We obtained information from the Health Search/Thales Database an Italian General Practice registry that comprises data given by computer-based patient records of a selected group of general practitioners (GPs). 422 GPs, homogeneously distributed across all Italian areas, took part in the study.All GPs attended a continuing educationalprogrammeabout guidelines and recommendation about diabetes management and had a record of management of their T2DM.
Results: 3836 T2DM (mean±SD 65.9±10.3; 50.9% Male; 8.2±6,0 duration of diabetes) reached the criteria of inclusion. The A1c (mean+SD) value and the % of DMT2 with A1c at target (<7%) were: T0 7.9±1.2 - 0%; T1 7.3±1.2 – 33.9%; T27.3±1.0 – 39.8%. T0 vs T1, T1 vs T2 and T0 vs T2 reached the statistical significance ($p<0.0001$). During the study, 79.7% of T2DM had a moment of drug intensification (addition of a new oral drug or a dose increase of the existing drug) with the following course: 33.3% at T0, 26.5% in the period from T0 to T1, 8.9% at T1, 8.1 from T1 to T2, 3.0% at T2.
Conclusions: Our results show that Italian GPs are generally more aggressive with glycemic management in T2DM having a higher rate of therapy modifications compared to those published in the international literature. The study shows that interventions to make GPs aware of the importance of recognizing and overcoming clinical inertiaimprove diabetes care among the population.

POSTER 24

The clinical profile, quality, safety and degree of individualised care fortype 2 diabetes in primary care

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Aims: To determine the prevalence and clinical profile of type 2 diabetes (T2D) patients registered with a primary care centre and to assess the quality and degree of individualisation of care.
Design and method: Descriptive cross-sectional study. Out of the 29,748 patients attending the centre, we selected those with a diagnosis of T2D in their electronic medical history. From those, we obtained a sample by simple random sampling. Patients who had not visited the centre, had died or had been diagnosed with T2D in 2013 were excluded. Biomedical data, security and quality indicators were collected. The latest data from 2013 was recorded. Continuous variables are given as mean and standard deviations and categorical variables as percentages.
Results: 1,628 (5.5%) patients had T2D. 276 individuals from a sample of 313 met the inclusion criteria. Mean age 68.4 (SD 12.6). 47.8% women. Mean duration of T2D 7.9 years. 63.8% had hypertension, 21%-18.8% micro-macrovascular complications, 1.1% somehypoglycaemia episodes. 154 (55.8%) patients had an HbA1c test: mean

HbA1c 6.8% (SD 1.1), 64.3% had HbA1c ≤ 7%. Mean FPG (fasting plasma glucose) 134 mg/dl (SD 38.2), LDL 104.4 mg/dl (27.2) HDL 48.4mg/dl (12.0) triglycerides 140.8 mg/dl (71.2), GFR 77.9 ml/min (23.6), BMI 29.5 kg/m^2 (4.8). 13.9% smoked. Of those on treatment (84.8%), 88.9% used metformin, 21.8% sulfonylureas (not long-acting), 16.2% iDPP4, 15.4% insulin. No difference was found in HbA1c and FPG in patients older than 70, patients with a T2D duration >tenyears (26.1%) and patients with cardiovascular disease. No difference was found in the mean daily dose of metformin, regardless of GFR higher/lower than 45 ml/min.
Conclusions: We found a low prevalence of T2D, its complications and hypoglycaemia, possibly caused by underdiagnosing and deficient recording. Only about half of T2D patients had a HbA1c test in 2013. Their degree of metabolic control was suitable. Levels of glycemic control and prescription profile do not seem to be individualised according to specific clinical situations such as age, T2D duration and other co-morbidities.

POSTER 25

Identifying a risk population for blood testing for diabetes mellitus in family practice via opportunistic screening - CroDiabGP study

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Aims: Risk factors, best setting and methods for detecting unknowntype 2 diabetes mellitus (T2DM) are known. GPs need simple procedures which can distinguishpersonswith normoglycaemia/dysglycaemia, and decide who should receivedefinitive diagnostic tests.
Design and method: In 23 family practices in Croatia (total population 48,592) we conductedopportunistic screening among 13,344 (27.5%) patients aged 45-70 over a 13-month period 2010/2011. The first step was to identify patients with risksprior to consultation using electronic medical records (EMR). During usual care consultation (whatever the reasons for consultation were) patients were invited to take part in a second step: fasting blood glucose (FPG) and other biometric measurements.
Results: EMR identified 1,264 (9.4.%) patients with T2DM and 5,568 (46.1%) with at least one risk.Over the past three years 849 (51.2%) had blood testing and were excluded. The list for FPG was limited to 2,719 (22.5%). During the study period, 1,852 subjects (68.1%) were tested. Crude new T2DM was 285 (15.3%), and the yield was 2.1% (9.4% to 11.5%). 1/5 (18.3%) were diagnosed via opportunistic screening. Risk factors collected from EMR and yield to diagnosis T2DM were chronic conditions yes/no: hypertension (72.0%) P<0.001, dyslipidaemia (54.3%) P=0.181, crude BMI (66.4%) P<0.001. Risk episodes: history of gestational DM and other episodes of DM were missed (0,01%) and were not included in the analysis. Patient-related information: family history of DM was discussed during consultation or collected from continuity of care, (32.1%) P<0.005. One/two risks had 774 (41.7%) patients plus two elevated FPG detected one patient with DM in 8.6 screened patients and three/four had 1078 (58.2%) detected1 DM in 5.2 patients, P<0.001.
Conclusions: It is feasible to identify patients at riskusing EMR. Episodes of DM and family history are not included if patient has only that risk. Better registration of those risks in EMR will improve the basis for identifying risk patients.

POSTER 26

Depression-related factors in type 2 diabetes mellitus patients

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Aims: To determine the prevalence of depression among the type 2 diabetes mellitus (DM) population and associated factors.
Design and method: Cross-sectional multicentre study in primary care. Random sample. Social and demographic data, habits, cardiovascular disease (CVD) and risk factors (CVRF), DM complications and drugs were collected. Physical examination, blood and urine tests, retinography, electrocardiogram and an Amsler test were performed. Depression Yesavage test and physical exercise short IPAQ test were filled in. Statistical analysis: Bivariant analysis with Fisher's exact test or a Mann-Whitney U test. Multivariate logistical regression analysis. p< 0.05 or 95% IC were considered significant.
Results: 447 patients. Mean age 67.8± 10.4 years; 53.7% men; 75% married; 67% retired; 7% temporarily disabled. Mean years of evolution 8.7± 5.7. Prevalence of CVD >40%; presence of CVRF >70%; current smokers 12%. 25% kept a low level of physical activity. 15.6% insulin treated. Prevalence of depression 8.05%. We found a significant relation between depression and gender (p= 0.014), marital status (p< 0.05), working situation (p< 0.05), hypertension (p= 0.013), hypertension treatment (p< 0.003), lipid-lowering treatment (p< 0.05) and physical activ-

ity (p< 0.05). In the multivariate analysis, the independent associated variables that persisted were: female gender (OR= 2.6; CI=1.2-5.7); pathological Amsler test (OR= 3.54; CI=1.1-10.6); being married (OR= 0.19; CI=0.04-0.08) was a protective factor with respect to being single, as well as being under hypertension treatment (OR= 0.33; CI= 0.16-0.71). High physical activity with respect to a low activity showed a tendency to a protective association (OR= 0.36; CI= 0.11-1.09).
Conclusions: The prevalence of depression measured by the Yesavage test was lower that the one that was expected according to some publications. The main factors related to the presence of depression in DM population were female gender, being single and visual complications (pathological Amsler test). Metabolic control, time evolution or DM2 treatment didn't show independent association in multivariate analysis.

POSTER 27

How are treatment aour pacient before using insulin?

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Aims: To describe current management with oral anti diabetics (OADs) in the primary care of patients with type 2 diabetes mellitus (T2DM) who had not started insulin earlier because they were afraid of injections.
Design and method: Epidemiological, multicentre, observational study nationwide. Population: patients ≥ 18 years, diagnosed with T2DM treated with OAD with poor glycemic control, HbA1c > 8% and expressing of fear of barrier puncture. Period April 2012- February 2013.
Results: Sample of 573 patients. Average (SD) age: 64.7(10.5) years (10.5), 43.3% females 56.7 % males. Average duration of T2DM: 10.4 (6.2) years. HbA1c average 8.7 (0.8)%.
27% received monotherapy treatment, 50.4 % with dual therapy, 14.9% in triple therapy and 0.9 % with four drugs. No data 6.4%.
Regarding monotherapy, the drug of choice was metformin 69.2%, iDPP4 18.9%, SU 8.8%, glinide analogues 2.5 %, GLP1 0.6 % and glitazones 0%.
The most commonly used treatment in the second step was combination therapy with two drugs, metformin + sulfonylurea was42.8% ,metformin + DPP4 inhibitors 39 % , metformin + repeglinica 5.8%, metformin + glitazones 3.8%, metformin+ GLP1 0.7% , SU + DPP4 3.8%, repa + DPP4 1.4% and their combination 2.7%.
In triple therapy the most prescribed combinations were metformin + sulphonylurea + DPP4 inhibitors 68.6%, metformin + secretagogues quick action + antagonists DPP4 17.4%, metformin + sulfonylureas + fast-acting secretagogues 9.3%.
The most frequently prescribed medication as part of the treatment of patients with T2DM was metformin used in 81.3%, sulfonylureas in 39.6%, iDPP4 in 41.6%, glinides in 9.3%, glitazones in 2.9%, alpha-glucosidase in 0%, inhibitors in 9% and GLP1 in 0.7%.
Conclusions: Metformin is the most prescribed drug in patients with T2DM. The drugs most frequently associated with metformin therapy are sulfonylureas and iDPP4. A boost during early treatment with insulin should be considered and may be necessary.

POSTER 28

Physical activity patterns among the T2DM population. Relationship with cardiovascular risk factors, diabetes complications and T2DM comorbidities

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Aims: The aim of our study is to analyse the physical activity (PA) pattern and risk factors associated with sedentary T2DM population.
Design and method: Cross-sectional multicentre random study in primary care. PA was assessed by a Short International PA Questionnaire with four categories: low or sedentary (<600 MET/week), moderate-medium (600-1499), moderate-high (1500-2999) and high (≥3000). We registered sociodemographic, anthropometric data and cardiovascular (CV) risk factors, disease and risk scores. Yesavage and Mediterranean Diet test and DM complications and comorbidities were also compiled. Analytical data: HbA1c, lipid, renal profile and uricaemia. Bivariate and multivariate logistic regression (low versus moderate to high PA) analyses were performed.
Results: Of 447 patients, 57.9% were men. Mean age: 67.9±10.4; mean HbA1c: 7.1%±1.2%; 36.6% were overweight and 50.7% obese class I(BMI 30-34); 28.6% and 20.8% had CV and chronic renal disease (CRD), respectively. PA pattern was: 24.4% low, 28.3% moderate-medium, 21.7%moderate-high and 25.6% high. Low PA was more frequent in: women, ≥75 years, smokers, hypertensive patients with higher BMI and waist circumference,

higher stroke scores, CRD, depression, and elevated lipid profile.Independent risk factorsassociated with low PA in the multivariate analysis were (odds ratios, CI 95%):hypertension (3.1, 1.5-6.2), CRD (1.8, 1.04-3.2), depression (2.7, 1.2-5.9), longer time of T2DM onset (1.04, 1.0-1.09), higher levels of triglycerides (1.01, 1.0-1.01) and ldl (1.01, 1.0-1.02). In contrast, a good control of glycaemia (0.5, 0.3-0.8), blood pressure (0.4, 0.3-08) and of triglycerides (0.4, 0.2-1.0) were protective factors for sedentary patients. Women were at greater risk due to their sedentary lifestyle (OR: 1.5; CI95%: 0.9-2.5).
Conclusions: 24% of our T2DM population was sedentary. PA improves glycaemia control, lipid profile, CV risk factors and CRD which are all very important in the prevention of diabetes morbidity. Inactivity is also related to a risk of depression, probably associated with the quality of life.

POSTER 29

Implication of diabetes in dementia

Pastoret M[1], Tomàs J[1], Verdaguer C[1], Rosanas D[1], Petit M[1], Tomàs M[2]
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Aims: Diabetes is already known as a risk factor for cardiovascular disease (CVRF). This means that diabetes can also lead to increased vascular dementia. However it has recently been reported that diabetes could also be implicated in Alzheimer dementia (AD). Which type of dementia is diagnosed more frequently? Is diabetes implicated in different dementias?
Design and method: A cross-sectional study of dementia patients from a rural area of 18,551 inhabitants was conducted. 155 dementia patients between 59-99 years old were included. Variables recorded were: type of dementia (Alzheimer's, vascular, non-specific,or other), gender, age, history of diabetes (DM), hypertension,dyslipemia, smoking, cardiovascular disease, kidney failure, control of CVRF. We compared risk factors that had been found among dementia patients ≥ 80 years and a random sample of our patients ≥ 80 years.
Results: 65.8% women,85% were80 ≥ years old. 27.1% DM, 67.1% had hypertension,47.7% dyslipemia, 4.6% tobacco,7.7% ischemic heart disease, 28.4% stroke, 21.8% kidney failure. 25.2% were diagnosed with AD, 25.8% with vascular dementia(VD),45.2% non-specific. Nostatistically significant differences were found among diabetic dementia patients or non-diabetic dementia patients, regardless of thetype of dementia. VD and unspecified dementia were predominant among patients with hypertension. While among our general population over 80 the percentage of DM, DLP, hypertension and tobacco was 19.1%, 27.2%, 74.7% and 3.4%.Among dementia patients ≥ 80 years old, the percentages were 28.1%, 50.8%, 68.9% and 1% respectively.
Conclusions: Non-specific dementia is the most diagnosed form of dementia. Although Alzheimer's disease is usually the most common cause of dementia, we observed a similar percentage of vascular dementia in our patients. Diabetes appears to be involved not only in VD but also AD. Access to information about the history of diabetes and dyslipidaemia in patients with dementia,less CVRF and/or bettermonitoring of CVRF could reduce AD and not only VD.

POSTER 30

Is haemoglobin A1C associated with hypertension?

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Aims: Hypertension is known as a risk factor highly associated with type 2 diabetes. However, this relationship has not been well investigated in prediabetic patients. The aim of our study was to compare the distribution of haemoglobin A1C (A1C) in the non- diabetic population according to their blood pressure (BP).
Design and method: Cross-sectional survey of patients (aged ≥ 18) randomly selected from a primary care centre. Patients with diabetes, gestational diabetes and other secondary diabetes were excluded. Once they had been informed by phone and had agreed to participate they were consecutively enrolled. They came to our centrefor a blood test and a BP measurement. Some people were diagnosed with hypertension or treated with anti-hypertension drugs and they remained included. We used the classification of the European Society of Hypertension.
Results: 282 patients were tested, 61.7% women and 38.3% men, average age 51.26 [standard deviation (SD) 13.1]. There were 108 patients (38.3%) with optimal BP and average A1C of 5.55%. Patients with normal BP (N=64, 22.7%) and normal-high BP (N=64, 22.7%) had an average A1c of 5.68% and 5.70% respectively. 20 patients (7.09%) had level 1 hypertension with an average A1C of 5.65%. Three patients (1.06%) had level 2

hypertension and two others type 3 hypertension, with an average A1c of 5.63% and 5.30% respectively. Isolated systolic hypertension was found in 20 patients (7.45%) with an average A1c of 5.83%.
Conclusions: The findings show that there is a positive association between the hypertension level and the A1c level. We found a small sample of patients with hypertension level 2 and 3. So, the results in these groups are less extrapolated. Finally, we would like to highlight the importance of isolated systolic hypertension as an independent cardiovascular risk factor and the main component of the prognostic of hypertension.

POSTER 31

Obesity amongthe non-diabetic population

Vilanova B[1], Falguera M[1], Miró N[2], Cebrian C[3], Marsal JR[4], Garriga A[1]
[1]Igualada Nord Primary Health Care Centre;[2]Pla d'UrgellBasic Health Area;[3]Primer de Maig Primary Health Care Centre;[4]Jordi Gol Primary Care Research Institute (IDIAP Jordi Gol)

Aims: To determine the prevalence of obesity based on waist circumference (WC) and body mass index (BMI) among the non-diabetic population and to describe the distribution of glycohaemoglobin (A1C) and fasting plasma glucose (FPG) according to BMI in that population.
Design and method: We conducted a cross-sectional study of subjects aged ≥18 years randomly selected from a region (population ≈ 37,267). Patients with diabetes, gestational diabetes and other secondary diabetes were excluded. Variables recorded were age, gender, weight and height, WC, BMI, FPG and A1C. Obesity was defined as BMI 30 ≥ according to the World Health Organisation and central obesity as WC ≥102 cm in men and ≥ 88 cm in women according to the National Cholesterol Education Program Adult Treatment Panel III 2001.
Results: 282 subjects were included, 61.7% were women and 38.3% were men, mean age range 51.26 years [standard deviation (SD) 13.1]. The mean BMI range was 26.23 Kg/m² (SD 4.3) and 15.96% had a BMI ≥ 30 Kg/m². The mean WC range was 94.23 cm (SD 11.1) and 50% achieved criteria of central obesity. A positive correlation was found between AIC and BMI [normal, A1C 5.5% (SD 0.36); overweight class I, A1C 5.6% (SD 0.37); overweight class II, A1C 5.7% (SD 0.42); obese class I, A1C 5.8% (SD 0.40); obese class II, A1C 6.0% (SD 0.74); obese class III, A1C 5.6% (SD 0.42); p<0.001]. Significant correlations were also found between BMI and FGP (p<0.001)
Conclusions: The overall prevalence of obesity and central obesity was, 15.96% and 50%, respectively. Significant correlations were found between A1C, BMI and FGP, and prediabetes criteria were achieved in patients with overweight class II and obese class I and II. Healthy lifestyle promotion could be useful in order to contribute to weight loss and could be helpful in reducing the risk of developing prediabetes.

POSTER 32

Web-based shared care of diabetic patients between a hospital diabetes care unit and general practitioners (GPs): a study in Regione Marche - Italy

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[1] INRCA Diabetology Unit; [2]ASUR Marche

Aims: Since 1980 the Marche region, in central Italy, has had a hospital network of diabetology units (DU) in the main towns providing a specialist approach to diabetes care. The increasing amount of diabetic patients in recent years makes greater integration of primary and secondary health care necessary, but the pressure to shift patients from secondary to primary care is often caused only by financial reasons regardless of effectiveness. The aim of the present study was to improve the care of type 2 non-insulin-treated diabetic patients by means of web-based integration between GPs and DU.
Design and method: Ten GPs and the DU in Ancona took part in the study and both initially detected patients who were enrolled after informedconsent. An electronic medicalrecord system was adopted and GPs and DU were linked by a fibre-optic network. 134 patients were monitored for 18 months, with an initial visit by DU and clinical controls by GPs every three months. At each visit GP recorded BMI, blood pressure, fasting glycaemia,HbA1c, LDL-cholesterol, and modifications of therapy.
Results: After 18 months' study a slight, but not statistically significant reduction of HbA1c levels was observed (baseline 7.6±1.3% vs. 7.2±1.5). At the end of the study, the number of patients with LDL- cholesterol under the target of 100 mg/dl increased, with a contemporary decrease of subjects with LDL-cholesterol above target without treatment. Likewise, the number of patients with blood pressure (BP) under the target increased, with a contemporary decrease in subjects with BP above target without treatment.
Conclusions: This new web-based shared management of diabetic patients was able to improve compliance with treatment and medical controls. The patients' satisfaction and enhanced adherence to treatment might have determined better metabolic control.

POSTER 33

Type 2 diabetes in polypathological adults: clinical and functional characteristics

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Aims: To describe the clinical and functional characteristics of polypathological (PP) adults with or without type 2 diabetes (T2DM or not T2DM, respectively).
Design and method: *Design:* Cross sectional study. *Setting:* 27 primary health care centres. *Subjects:* 865 adults with PP criteria (two or more chronic diseases, distributed into eight categories, defined by a panel of experts) and informed consent to participate. *Measurements:* Demographical, clinical (morbidity, hypertension, dyslipemia, obesity, Charlson index), functional (Barthel index, Lawton Brody index, Pfeiffer's scale), body mass index, blood pressure, and lipid profile. *Statistical analysis:* Continuous data were expressed as mean and standard deviation, categorical data as percentage. Independent samples T-test and chi-square test were used to compared variables between two groups.
Results: 495 PP with T2DM and 370 not T2DM were included: 49.5% female, mean age 78.00±9.60 years. In T2DM patients mean category PP was 2.65±0.81 and not T2DM it was 2.44±0.64. In T2DM the most frequent defining categories were A category (heart disease) 60.5% followed by F category (peripheral artery disease) 46.5%; In not T2DM, E category (neurological diseases) was 44.6%. Obesity, hypertension and dyslipemia were more prevalent in T2DM. The mean Charlson index was higher in T2DM (4.16±1.59) versus not T2DM (3.04±1.62) ($p<0.05$). In T2DM systolic blood pressure was higher (129.77±16.57 mmHg) and LDLcholesterol was lower (98.74±36.25 mg/dl) versus not T2DM. Mean HbA1c was 7.26±1.41%. Functional status was similar in both groups: mean Barthel index was 62.23±31.90, Lawton Brody index was 3.26±2.81 and Pfeiffer scale 2.94±3.07.
Conclusions: T2DM was prevalent in PP patients in primary health care. The definition of PP used selects a population in the primary care setting with a high level of multidimensional frailty having a high prevalence of functional deterioration. Due to this multidimensional deterioration, we recommend making an integrated evaluation of the health care practice of these patients.

POSTER 34

Does HbA1c adequately reflect glycemic control in brittle diabetes?

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Aims: Brittle diabetes is a form of type 1 diabetes characterized by any severe unstable situation in glycemic control. HbA1c is often used for detecting glycemic control in clinical practice but it does not reflect glycemic variability adequately. This abstract reports the results of two patients in whom there was a discordance between capillary glucose follow-up and HbA1c levels.The glucose measurements were performed by a continuous Glucose Monitoring System (CGMS), which measured the glucose level every 5 minutes.
Design and method: This is a case report on two patients.
Results: A 21-year-old female and a 27-year-old male patient with type 1 diabetes have been followed in the diabetes outpatient clinic. Both of them have been using an insulin pump since 2011. Although they were strict about their diet programme, they complained about experiencing hyperglycaemia. The follow-up of the first patient during the last year revealedfasting glucose levels and HbA1c values of 217 mg/dl - 6.8%; 263 mg/dl - 6.9%; 196 mg/dl - 8.2% and 307 mg/dl - 7.9 %, while the second patient's values were 75 mg/dl - 5.8%; 132 mg/dl - 5.8%; 37 mg/dl - 5.5%; 80 mg/dl - 6.3% and 238 mg/dl - 6.6%. The patients were put on a CGMS device for one week. At the same time, they continued to check their glucose via their glucometer at least four times a day. In the fırst patientthe highest and the lowest glucose levels thatthe device recorded were as follows: day 1 , 345 mg/dl - 145 mg/dl; day 2, 368 mg/dl - 95 mg/dl; day 3, 301 mg/dl - 132 mg/dl; day 4, 362 mg/dl - 70 mg/dl; day 5, 290 mg/dl - 86 mg/dl and day 6, 337 mg/dl - 71 mg/dl.The second patient's values were: day 1, 229 mg/dl - 54 mg/dl; day 2, 209 mg/dl - 40 mg/dl; day 3, 398 mg/dl - 40 mg/dl; day 4, 400 mg/dl - 75 mg/dl; day 5, 400 mg/dl - 83 mg/dl and day 6, 259 mg/dl - 60 mg/dl.
Conclusions: It has been shown that HbA1c level reflects continuous hyperglycaemia and is not affected by short hyperglycaemic peaks. For this reason, HbA1c presents shortcomings as a gold standard in metabolic control. To conclude, because of the changes in blood glucose levels in patients with brittle type 1 diabetes, HbA1c alone is inadequate in reflecting glycemic control.

POSTER 35

Diabetes retinopathy follow-up in primary care. Study design project

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Aims: Diabetic retinopathy (DR) screening is part of the regular tasks that any health care professional assesses periodically in their type 2 diabetic (T2D) patients. International and local T2D guidelines emphasize that microvascular complication screening is a major aspect in clustering risk and individualizing diabetes management. There is already experience in our PC centers using non-mydriatic retinal photography as a screening tool. In 2011 we started a twice-yearly population diabetes retinopathy screening program in two primary care centres. Our objective was to assess if a diabetes retinopathy follow-up could be implemented by GPs in two urban primary care centres among those patients who have been detected through the screening programme.

Design and method: Continuous quality improvement project about diabetes retinal photography follow-up. A working group was set up (one ophthalmologist, one optician, two GPs and two health technicians). We will review the literature from this topic and will also hold meetings to decide the appropriate indicators to be considered in this project. A sample of T2D patients with abnormal retinal photography will be invited to attend a follow-up in this new follow-up system. Two GPs and one ophthalmologist will read the new follow-up images independently and a correlation will be established between GP and specialist.

A descriptive analysis will be performed: sex, age, years from T2D diagnosis, dyslipidaemia, hypertension, microvascular (kidney and peripheral nervous system) and macrovascular (IHD, MI, stroke), current medication.

Results: Total population 42,399. 3,313 T2D patients. In 2013 1,344 patients were screened in 2013. Of those, 392 patients had some DR level and could be eligible for this research project.

Conclusions: Project design.

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Supporting Organizations

(Listed in alphabetical order)

DESG - Diabetes Education Study Group of EASD

ECD - European Coalition for Diabetes

EGPRN - European General Practice Research Network

EPCCS - European Primary Care Cardiovascular Society

EURADIA - Alliance for European Diabetes Research

FEND - Foundation of European Nurses in Diabetes

GedapS-CAMFiC - Primary Health Care Diabetes Study Group of the Catalan Society of Family and Community Medicine

IDF Europe - International Diabetes Federation Europe

PCDS - Primary Care Diabetes Society

redGDPS - Network of Diabetes Study Group in Primary Health Care

semFYC - Spanish Society of Family and Community Medicine

SEMI - Spanish Society of Internal Medicine

TAHEV - Turkish Family Medicine Foundation

TAHUD - Turkish Association of Family Physicians

Conference Venue

Barceló Sants Hotel 4*

The recently refurbished **Barceló Sants**** hotel has reopened its doors with a more modern, state-of-the-art image. There are **364 Orbital rooms and 14 Orbital suites**. The rooms feature large windows with spectacular city views and 2 "hatchways" that make them into original rooms with a space-age feel.

Located in Sants Railway Station, the Barceló Sants offers direct access to the AVE high-speed train and Barcelona metro and train stations, making it the **best-connected hotel in the city**. It is located just 500 m from the Barcelona Congress Palace and Trade Fair Centre and Montjuïc, 15 minutes by train from Barcelona International Airport and 4 minutes by train from Plaza Catalunya. 200 parking spaces right in front of the hotel.

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Barceló Sants Hotel**
Pl. dels Països Catalans, s/n
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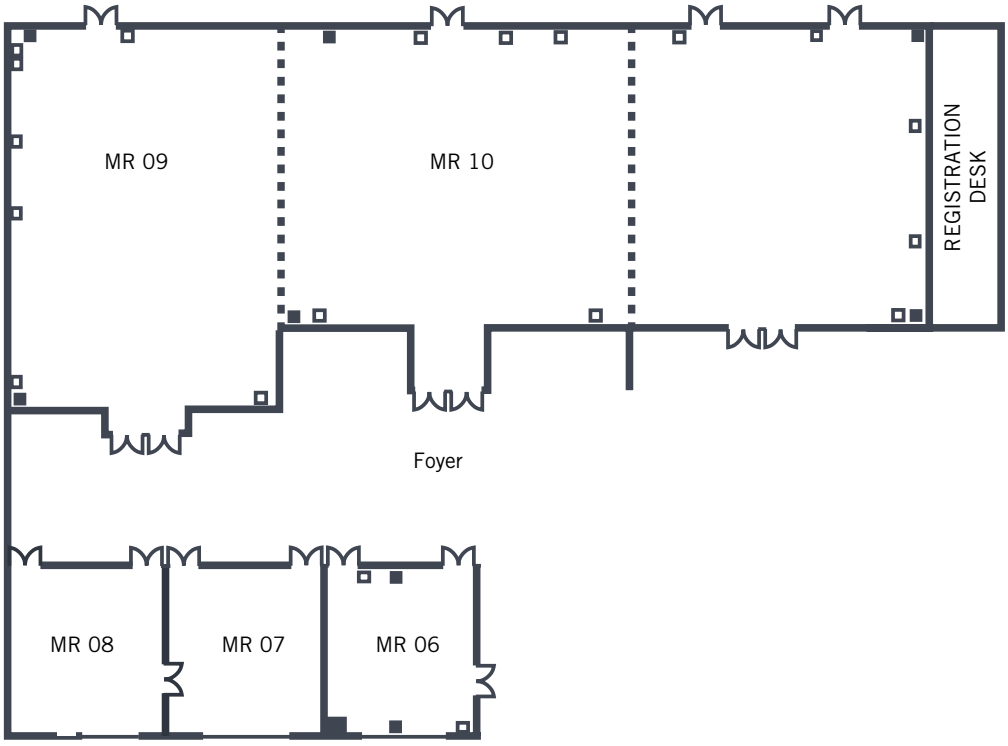
www.barcelo.com

First floor



Plenary room:	*MR 09*
Workshop room:	*MR 06*
Satellite Symposium rooms:	*MR 07 + 08*
	MR 10
Poster area:	*Foyer*
Coffee break:	*Foyer*
Lunch area:	*Oxygen Restaurant (first floor)*

About Barcelona

Located in a privileged position on the north-eastern coast of the Iberian Peninsula and the shores of the Mediterranean, Barcelona is the second largest city in Spain in both size and population. It is also the capital of Catalonia, 1 of the 17 Autonomous Communities that make up Spain.

The capital of Catalonia is unequivocally a Mediterranean city, not only because of its geographic location but also, and above all, because of its history, tradition and cultural influences. The documented history of the city dates back to the founding of a Roman colony on its soil in the second century B.C.

Modern Barcelona experienced spectacular growth and economic revival at the onset of industrialization during the second half of the 19th century. The 1888 World's Fair became a symbol of the city's capacity for hard work and its international outlook. Culture and the arts flourish in Barcelona and throughout Catalonia; the splendour achieved by Catalonian's home-grown art nouveau, *modernisme*, is one of the clearest examples.

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Airport

Barcelona International Airport (also known as Aeroport de Barcelona-El Prat) is situated 13 km south west of the city centre.

Train (RENFE)

The train service between the airport and the city centre (Passeig de Gràcia) runs from 06:00 to 22:30 (to Barcelona) and from 5:20 to 22:50 (to the airport). There is one train every 30 minutes and the travel time is 25 minutes.

Approximate cost: € 4.10.

Express Bus (Aerobús)

The bus service between the airport and the city centre (Plaça Catalunya) runs from 05.35 to 01.05 (to Barcelona), and from 05.00 to 00.30 (to the airport). There is one bus every 5 minutes and the travel time is 30 minutes.

Approximate cost: € 5.90 (one way)
€ 10.20 (round trip)

Taxi

The journey to the Barceló Sants Hotel takes about 20 minutes. Rates change according to the time of day.
Night time rates: working days from 21:00 to 7:00 and weekends and bank holidays from 00:00 to 24:00.
Daytime rates: from 07:00 to 21:00.

Approximate cost: € 30. (There is an additional cost for entry /exit from the airport and for carrying luggage.)

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