



Original Article

Management of patients with type 2 diabetes and multiple chronic conditions: A Delphi consensus of the Spanish Society of Internal Medicine



Javier Ena ^{a,*}, Ricardo Gómez-Huelgas ^b, Demetrio Sánchez-Fuentes ^c, Miguel Camafort-Babkowsk ^d, Francesc Formiga ^e, Alfredo Michán-Doña ^f, Emilio Casariego ^g,
the Working Group of Diabetes and Obesity of Spanish Society of Internal Medicine
SEMI Diabetes and Obesity Working Group

^a Internal Medicine Department, Hospital Marina Baixa, Alicante, Spain

^b Internal Medicine Department, Hospital Regional Universitario, FIMABIS, Málaga, Spain

^c Internal Medicine Department, Hospital Nuestra Señora de Sonsoles, Ávila, Spain

^d Geriatric Unit, Internal Medicine Department, Hospital Clínic, University of Barcelona, "August Pi i Sunyer" Biomedical Research Institute (IDIBAPS), Barcelona, Spain

^e Geriatric Unit, Internal Medicine Department, Hospital Universitari Bellvitge, IDIBELL, Barcelona, Spain

^f Internal Medicina Department, Hospital de Jerez de la Frontera, Universidad de Cádiz, Cádiz, Spain

^g Internal Medicine Department, Hospital Lucus Augustis, Lugo, Spain

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ABSTRACT

Aims: To develop consensus-based recommendations for the management of chronic complex patients with type 2 diabetes mellitus using a two round Delphi technique.

Methods: Experts from the Diabetes and Obesity Working Group (DOWG) of the Spanish Society of Internal Medicine (SEMI) reviewed MEDLINE, PubMed, SCOPUS and Cochrane Library databases up to September 2014 to gather information on organization and health care management, stratification of therapeutic targets and therapeutic approach for glucose control in chronic complex patients with type 2 diabetes mellitus.

A list of 6 recommendations was created and rated by a panel of 75 experts from the DOWG by email (first round) and by open discussion (second round). A written document was produced and sent back to DOWG experts for clarification purposes.

Results: A high degree of consensus was achieved for all recommendations summarized as 1) there is a need to re-design and test new health care programs for chronic complex patients with type 2 diabetes mellitus; 2) therapeutic targets in patients with short life expectancy should be individualized in accordance to their personal, clinical and social characteristics; 3) patients with chronic complex conditions and type 2 diabetes mellitus should be stratified by hypoglycemia risk; 4) age and specific comorbidities should guide the objectives for glucose control; 5) the risk of hypoglycemia should be a key factor when choosing a treatment; and 6) basal insulin analogs compared to human insulin are cost-effective options.

Conclusion: The assessment and recommendations provided herein represent our best professional judgment based on current data and clinical experience.

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1. Introduction

The prevalence of diabetes continues to increase around the world and more people with diabetes are suffering from chronic conditions. A national survey conducted in Spain between 2009 and 2010 showed an overall prevalence of diabetes mellitus adjusted for age and sex of

13.8%; however, in subjects aged 75 years or older, the prevalence of diabetes mellitus was 37.4% [1].

Diabetes mellitus is often associated with other chronic conditions in Western Europe. In the ObEpi survey, such comorbidities included obesity, 43.1%; high blood pressure, 59.1%; dyslipidemia, 59.9%; myocardial infarction or angina pectoris, 9.7%; revascularization, 7.8%; heart failure, 7.4%; sleep apnea, 8.3%; and osteoarthritis, 10.7% [2]. Other chronic clusters associated with type 2 diabetes are cognitive impairment and depression [3,4], and diverse types of neoplasms such as prostate, breast, liver, pancreas, bladder and colon cancer [5]. Moreover, the presence of multiple chronic conditions is intimately related to polypharmacy and inappropriate therapies with considerable impact on the elderly health [6].

Abbreviations: CCM, Chronic Care Model; CGW, Core Working Group; DOWG, Diabetes and Obesity Working Group; NPH, Neutral Protamine Hagedorn; SEMI, Spanish Society of Internal Medicine; T2DM, type 2 diabetes mellitus.

* Corresponding author at: Internal Medicine Department, Hospital Marina Baixa, Alicante, Spain. Tel.: +34 966859957.

E-mail address: ena_jav@gva.es (J. Ena).

Clinical practice guidelines are usually focused on a single condition although some of them can provide recommendations for diabetes care in specific populations [7,8]. Nevertheless, most clinical practice guidelines do not consider the underlying scientific evidence, the patient goals at short- and long-term, or the applicability of the recommendations for patients with multiple chronic conditions [9].

Patients with multiple chronic conditions account for most outpatient visits and hospitalizations in the general internal medicine departments. Therefore, in order to elaborate a series of recommendation for the management of patients with type 2 diabetes and multiple chronic conditions, a group of experts from the Spanish Society of Internal Medicine (SEMI) carried out a literature review using a Delphi technique to examine an integrated approach for the management of patients with multiple diseases, from a clinical and public health perspective.

2. Methods

2.1. Study design

We used the Delphi technique, defined as a systematic method of solicitation and collation of the informed judgment on a particular topic [10].

2.2. Participants

Initially, two project coordinators defined three conceptual points of debate: (1) organization and health care, (2) stratification of therapeutic targets and (3) therapeutic approach for the management of chronic complex patients with type 2 diabetes. Subsequently, six panelists were independently selected among the SEMI active members, based on their adequate background and proven expertise in the topics reviewed. These eight members formed the “core working group”.

Panelists searched MEDLINE, SCOPUS and Cochrane Library databases from January 1966 to September 2014 using the following search criteria *chronic disease, comorbidity, diabetes mellitus, disease management, elderly, end of life care, glycated hemoglobin, health care, hypoglycemia, institutionalization, long-term care, nursing home, quality-adjusted life years, risk assessment, terminal care, type 2 diabetes mellitus*.

After a careful review of the literature identified, the panelists proposed two statements per each area of debate, summarizing controversial or unsolved questions related to the topics to be discussed. The topics and statements proposed for discussion were:

Organization and health care for patients with type 2 diabetes and multiple chronic conditions

- 1 The current health care process needs to be redesigned to adequately manage chronic patients with multiple diseases.
- 2 For hospitalized patients with short life expectancy, health care protocols allowing the individualized treatment of type 2 diabetes are needed.

Stratification of therapeutic targets in patients with type 2 diabetes and multiple chronic conditions

- 3 For diabetic patients with multiple chronic conditions, stratification based on the risk of hypoglycemia is essential for the overall assessment of the patient.
- 4 If patients with short life expectancy are excluded, a specific control target must be established for diabetic patients with multiple chronic conditions, based on their age and comorbidities.

Therapeutic approach for patients with type 2 diabetes and multiple chronic conditions

- 5 The risk of hypoglycemia should be a key factor when choosing appropriate drugs to control blood glucose in elderly patients with advanced comorbidities.
- 6 Basal insulin analogs are cost-effective options compared to human insulin.

2.3. Delphi survey—first round

These six statements were proposed for their acceptance by 75 Internal Medicine specialists, selected among the most active members of the DOWG, having the adequate background and proved expertise in the topics under discussion. The participation was unrewarded. In September 2014, according to the Delphi method, the survey was initially performed through a web platform. Participants should anonymously answer the questionnaire scoring the statements in a 5-point Likert scale (from 1: totally disagree to 5: totally agree). For the analysis of the consensus, median percentages were considered after clustering the 5 points into three groups: 1 + 2 disagreement, 3 neither agreement nor disagreement, 4 + 5 agreement.

2.4. Delphi survey—second round

In the second stage, all 75 specialists were invited to participate in a plenary session held in Seville in October 17th, where each panelist from the core working group presented a summary of the literature review as well as the results of the first ballot. Then, a second round of anonymous voting started during the meeting using an electronic system (Televoter© LOGOS Av Com s.r.l. Faenza, Italy).

A minimum agreement of 75% was needed to reach a consensus.

2.5. Post-meeting assessment of draft statements

In January 2015, a document summarizing the consensus statement and the main issues raised in the group discussion that followed the presentations of each panelist in the plenary session of Seville was drafted and sent to all participants for review and approval. The final statement document collects recommendations which represent the best criteria of the consensus panel, based on their expertise and the relevant literature revised.

3. Results

3.1. Delphi survey—first round

In the first ballot performed online, all 6 statements, evaluated by a total of 55 participants (73% of the selected specialists), reached and widely surpassed the minimum percentage needed for consensus (Fig. 1).

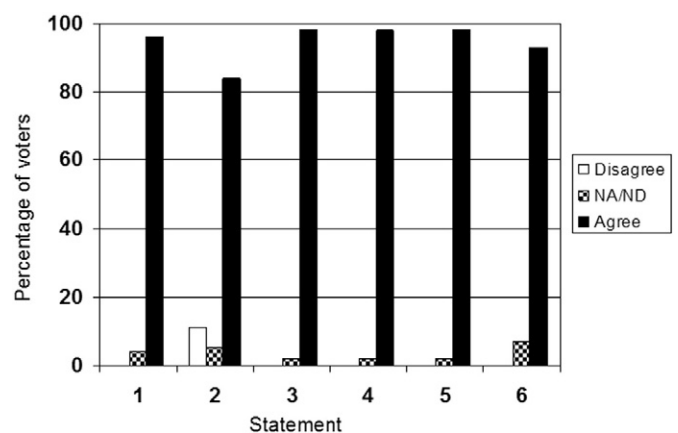


Fig. 1. Results of first-round of the Delphi survey. Percentage of voters scoring the six statements who were divided into three groups: 1 + 2 disagree, 3 neither agree nor disagree (NA/ND), 4 + 5 agree.

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