

Quality of Healthcare Provided to Elderly with Type 2 Diabetes: Data from the AMD* Annals Initiative

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Abstract

Objectives: The present study aims at exploring current approaches of Italian diabetologists, with regards to fundamental parameters in quality of care of elderly patients with type II diabetes, focusing at the same time on existing critical areas.

Research project and methodology: The results of clinical data, gathered during year 2009, were extracted from electronic medical records. The following parameters, taken from a source population of elderly people with diabetes aged ≥ 65 years, were assessed: glycated haemoglobin (Hb1Ac); renal function; lipid profile; arterial blood pressure; foot and eye examination. In addition, specific favorable and unfavorable outcomes of therapeutical intervention were also evaluated.

Results: We assessed a total of 414,814 patients with type II diabetes in 236 diabetic centers; 39.9% were aged <65 years, 34.9% between 65 and 74 years and 25.2% >74 years. We observed a high adherence to guidelines in the measurement of Hb1Ac regardless of age, while there was a shortage in the frequency of detection of the lipid profile and blood pressure in the elderly patients. Similarly, there was a significant reduction in the percentage of patients monitored for microalbuminuria, foot and retinopathy with increasing age.

In 11% of elderly patients, Hb1Ac levels were $>9\%$, whereas in 24.9% Hb1Ac was <6.5 . A poor lipid control was observed in about 30% of elderly patients, while the percentage of older patients lacking an optimal blood pressure control was more than twice.

Conclusions: As a whole, Italian diabetes care centers seem to provide a different quality of care to elderly type 2 diabetic patients compared to younger individuals. The data call for a higher attention for this class of frail subjects for the definition of reference objectives for elderly people.

Keywords: Diabetes; Elderly patients; AMD data file

Abbreviations: AMD: Associazione Medici Diabetologi (Italian Association of Clinical Diabetologists); BMI: Body Mass Index; GFR: Glomerular Filtration Rate; HDL: High Density Lipoprotein; LDL: Low Density Lipoprotein

Introduction

Diabetes mellitus is one of the most widespread pathologies in the world affecting about 300 million people, a figure set to increase within the next twenty years [1]. In Italy there are about 3 million people affected with different percentages in each age group. In particular, more than 50% of all outpatients cared by diabetes clinics are aged 65 years or older. This population group has multiple problems requiring a broad range of assistance and treatment, due to the fact that they are frail and/or suffer from multiple comorbidities [2]. Over the past twenty years diabetes care has significantly improved. Broad clinical studies [3-7] evaluated, along with the glycemic control, the effects of blood pressure and lipid control on the prevention of long term diabetic complications, thus contributing to the current opinion about the complexity of diabetes care. In addition, these studies have provided the basis for setting the metabolic goals in the treatment of diabetes mellitus.

From a clinical perspective approaching elder adults with long-standing diabetes often associated with microvascular and macrovascular complications or elder subjects with newly diagnosed diabetes generally leads to a different intensity of care and to different therapeutical choices. Nevertheless, in both cases the presence of

frailty, disability or comorbidities associated to a shorter life expectancy brings about the need of individualizing the clinical approach from the metabolic goals to the pharmaceutical choice and from the empowerment of the patient, or of the care-giver, to the follow-up plan [8].

Despite the effort in spreading these evidences to the medical community through guidelines, these are not yet fully applied in clinical practice. Thus it is still necessary to implement all those actions necessary to reach the goal and to constantly monitor the process by specific indicators.

Since 2006 the AMD (Associazione Medici Diabetologi) Society has promoted a continuous improvement in the quality of diabetes care in Italy through its annual AMD ANNALS campaign. The campaign involves diabetes care centers throughout the entire country. All these centers electronically collect data during routine outpatient

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management in order to elaborate pre-specified indicators of the care process. AMD has identified a set of indicators to be used for benchmarking activities [9,10]. Quality indicators include process measures evaluating diagnostic, preventive and therapeutic procedures performed by the participating centers, and outcomes indicators measuring favorable and unfavorable modifications in the patient health status.

To date, there is a lack of specific analyses on the quality of care provided to elderly population with type 2 diabetes; therefore, the aim of this study is to analyze some indicators linked to the quality of care provided by diabetes centers to young old (i.e. ≥ 65 -74 years old) and old patients (i.e. ≥ 75 years old) as compared to younger ones in order to evaluate the attitude of Italian diabetes specialists in caring the elder population and to highlight critical areas.

Materials and Methods

Selection of samples and analysis of the data

An extensive database containing data from 251 Italian Diabetic Centers has been used.

Centers share common software for data extraction from electronic medical records. Data are collected on annual basis in a standardized format (AMD File Data) and centrally and anonymously analyzed. The entire project is conducted without allocation of extra resources or financial incentives, but simply through a physician-led effort, made possible by the commitment of the involved specialists.

We analyzed data from 414,814 subjects with type 2 diabetes that were seen in 2009.

This extensive database is the result of the continuous improvement in the quality program, called AMD Annals campaign, promoted by the AMD Society and it reflects the usual clinical practice of Italian diabetologists.

A set of indicators has been identified for benchmarking activities:

- Process indicators: evaluating diagnostic, preventive and therapeutic procedures
- Outcome indicators: estimating favorable and unfavorable modification in patient health status
- Use of drugs (diabetic, antihypertensive, lipid-lowering)

In our study, we have analyzed the following indicators:

- Process measures which were taken at least once a year for the following parameters:

- Glycated haemoglobin (Hb1Ac)
- Arterial blood pressure
- Lipid profile
- Albuminuria
- Renal function - calculation of Glomerular Filtration Rate (GFR)
- Foot examination
- Fundus examination
- Intermediate outcomes indicators
- Percentage of patients with HbA1c $\leq 7\%$

- Distribution of HbA1c level in population subgroups
- Percentage of patients with levels of cholesterol LDL <100 mg/dl and >130 mg/dl.
- Percentage of patients with blood pressure $\leq 130/80$ and $\geq 140/90$ mmHg
- Distribution of BMI by population subgroup
- Percentage of smokers
- Percentage of patients with micro/macroalbuminuria
- Distribution of the patient for classes of GFR

In case of multiple readings collected from the same patient throughout the year, the most recent available record was taken as a benchmark.

The cholesterol LDL was estimated by the Friedwald equation. Microalbuminuria was defined as an albumin excretion rate in between 20 and 200 mcg/min alternatively both the albumin/creatinine ratio (>2.5 in men or >3.5 in women) or a microalbumin >30 mg/l were used for definition. The GFR was calculated with the MDRD formula (modification of the diet in renal disease).

Results

Overall, 414,814 patients with type 2 diabetes referred to 236 diabetes outpatients centers during the year 2009 were evaluated; 165,388 (39.9%) of these patients were aged less than 65 years (young group), 144,965 (34.9%) between 65 and 74 years (young old group), and 104,461 (25.2%) more than 74 years (old group). Mean age was 55.8 ± 7.8 in the first group, 70.0 ± 2.8 in the second group, and 80.3 ± 3.9 in the third group. As for the gender, in the young old group a prevalence of men (54.8%) compared to women (45.2%) was reported. Conversely, women were more prevalent in the older group (54.8% vs 45.2%).

As for the percentage of patients annually monitored for HbA1c, there was not a significant difference among the groups being respectively 92.5% in the young, 93.3% in the young old, and 91.2% in the old group.

The percentages of young, old young and old patients with a HbA1c $<7\%$ were respectively 43.4%, 45% and 42.5% respectively, while approximately 11% in both groups of elder individuals had a HbA1c $>9\%$ compared to 16.5% in the young group. Yet, it should be considered that almost one fourth of the elder subjects had values of less than 6.5%, suggesting a potential risk of hypoglycaemia (Figure 1).

The data concerning the measurement of the GFR were taken from 102,505 subjects between 65 and 74 years and from 73,099 subjects aged ≥ 74 years, i.e. near two thirds of the population in each group and slightly less in the young group. Analyzing the distribution of the population by class of GFR, 8.4% of young and 22.4% of young old patients have a GFR lower than 60 ml/min, while this percentage rose up to 40.3% in individuals older than 75 years (Figure 2).

Microalbuminuria was recorded in only 37% of subjects aged ≥ 74 years while in those aged between 65 years and 74 years it was 42.9%, a percentage equal to that observed in young individuals (42.8%).

Annual lipid profile was lacking in 23.9% of young, 24.8% of young old and 31.9% of old group.

Total cholesterol (CT) levels tended to decrease with increasing

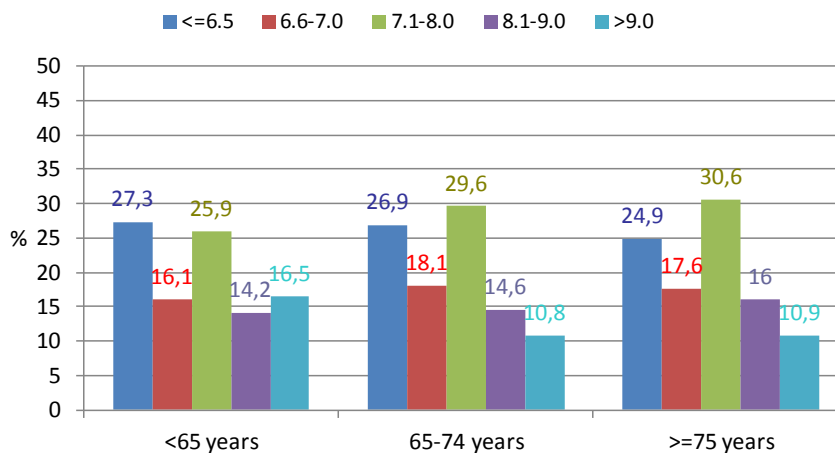


Figure 1: Trend of glycated hemoglobin by aged classes (normalized to 6%).

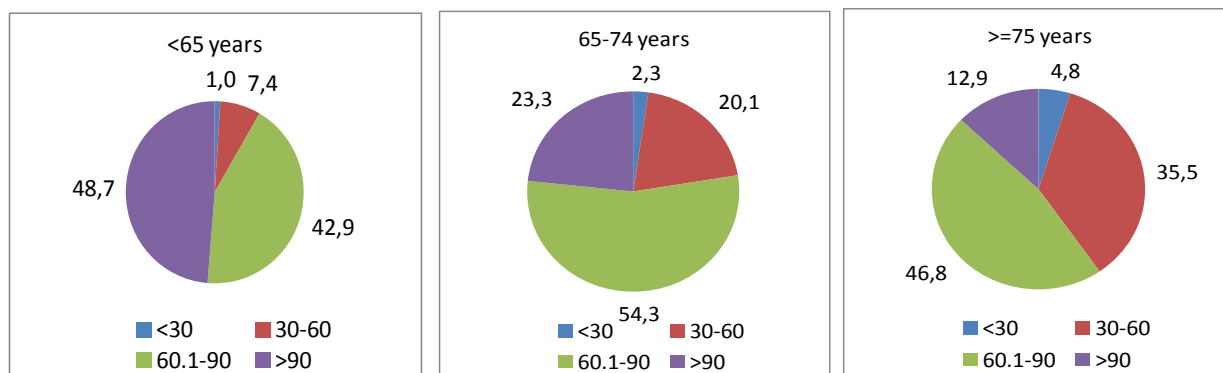


Figure 2: People distribution by GFR classes (ml/min).

age. In diabetic individuals over 65 years, both levels of CT and C- LDL were lower as compared to younger patients.

Less than 25% of the patients aged over 65 years showed C-LDL values exceeding 130 mg/dl compared to younger patients (29.6%).

Accordingly, the elderly population had a better lipid profile also in terms of serum triglycerides (TG) and C-HDL. With increasing age, the TG values tend to decrease, and C-HDL values both (females and males) tend to increase (Figure 3).

Measurement of arterial blood pressure was taken in 80% of young and young old patients and in 75% of old. The percentage of patients with blood pressure readings \geq to 140/90 mmHg increased with age being 51.1%, 60.3% and 62.1% respectively (Figure 4).

A foot examination was performed in only 14.5%, 13.6 and 10.4% of the young, young old and old group respectively.

When considering only those patients at risk for foot lesions (i.e. those having a neuropathy or a low-limbs arteriopathy) the percentage of those who received a foot examination at least once a year, is still unsatisfactory, especially in the older group (22.4% in 65-74 years group and 19.3% in \geq 74 years group) but it was low even in younger people (22.5%).

The percentage of subjects who underwent an annual examination

of the fundus is similar in young and young old (35% and 34.7%) and very low in the old group (26.2%).

Near 40% of patients between 65 and 74 years old, and 31% of those aged over 74 years were obese (BMI \geq 30) and 26% in both groups were overweight (BMI in-between 27.0 and 29.9). In the young group obese and overweight patients were respectively 47.3% and 23.8%.

The percentage of smokers was 13.8% in young old group and 7.2% in old group. The percentage of smokers is approximately twice in male than in female patients. Smokers were 25.6% among young individuals.

Discussion

The aim of this study was to evaluate possible differences in the quality of the care received by type 2 diabetic patients over 74 years compared to younger people. The study involved a large number of Italian diabetes centers involved in the AMD Annals campaign in 2009.

Quality of care was estimated by pre-specified indicators in the process area and intermediate outcomes were evaluated.

As for glycemic evaluation elder people receive the same attention as the younger. Diabetologists focus their attention on renal function (GFR evaluation) more in people over 65 years old than in those below this age while after 74 years microalbuminuria is estimated less frequently. This one may argue that while GFR is a concern for possible

	< 65 years (m±sd)	65-74 years (m±sd)	≥75 years (m±sd)
Total cholesterol (mg/dl)	191.9±42.9	185.1±40.0	184.7±39.9
HDL cholesterol (mg/dl)			
Men	45.1±12.2	47.1±12.6	47.7±13.1
Women	52.4±13.7	53.8±14.0	53.7±14.5
LDL cholesterol (mg/dl)	112.5±35.6	106.9±33.6	107.1±33.3
Triglycerides (mg/dl)	162.1±137.2	141.2±85.4	133.9±72.6

Figure 3: Lipid profile: mean values by age group.

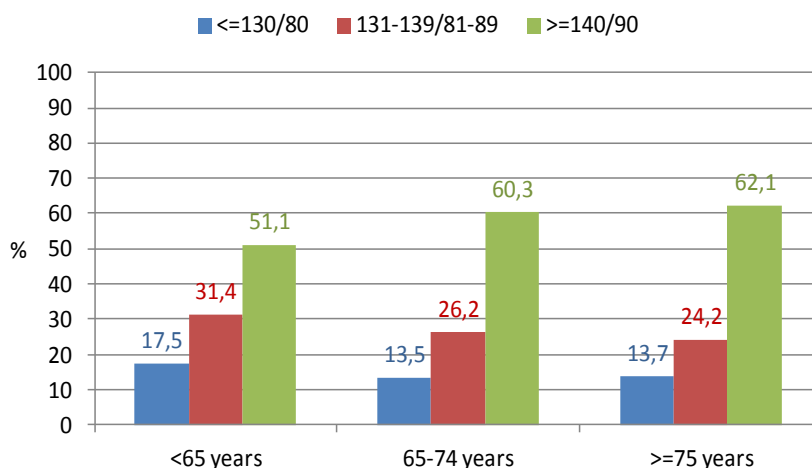


Figure 4: Trends of blood pressure values by age classes.

adverse event due to the therapy, it is not perceived as an important task to screening and follow-up of early stage of renal disease in elder individuals. This attitude is confirmed by the lower percentage of elder people undergoing an annual fundus examination compared to younger ones. Taken as a whole these results suggest that as for microvascular complications the Italian specialist care individuals aged 65-74 years in the same way of those younger than 65 years. The same picture can be depicted for the evaluation of cardiovascular risk factors such as lipids and blood pressure and for foot examination.

When considering the effect of care in terms of glycemic control, 45% of people aged 65-74 years and 42.5% of those aged more than 74 years have an HbA1c% lower than 7 and these percentages are similar to the ones in the younger group.

Data should be interpreted taking into account the medical treatment used to achieve the target. For instance, HbA1c values below 7% might be inappropriate in elderly frail patients, due to the high risk of hypoglycemia; such values may be acceptable only if reached using molecules such as insulin-sensitizer or incretins. Geriatric guidelines for the type 2 diabetes management in the elderly population (over 70 years) stress this concept also in case of individuals who are not frail, indicating the 7% value of HbA1c as the minimum level to be reached

in elder people [2]. The AMD Annals provide evidence about one of the most common long-term complication of diabetes, the kidney function impairment. Results in term of HbA1c in the elderly population should be evaluated in relation to this variable, as it determines the risk of adverse events linked to the therapy. Conversely, more than one in ten individuals observed has a significantly high level of HbA1c. These levels might be primarily associated with the development or the worsening of geriatric syndromes [11], cognitive decline and incontinence, and therefore, like excessively low levels, they should be avoided.

GFR declines with age. The levels of GFR and the levels of albuminuria are useful for an adequate evaluation of the stage of renal disease [12] and their values give complementary information.

In 24 % of type I diabetic patients, a reduction of GFR in the absence of albuminuria has been reported [13], this percentage is even higher in type 2 individuals ranging from between 39 to 62% [14]. Even more significant results were found in the Italian Study RIACE [15], where three-quarters of the population studied were aged over 60 years and a prevalence of 56.6% in the non-albuminuric form in diabetic patients with CKD stage 3 or more was observed, whereas only 30.8% and 12.6% were respectively micro and macroalbuminuric. Several studies have confirmed the relationship between GFR, albuminuria and increased

incidence of cardiovascular events [16,17]. In the RIACE study [15], a strong association between coronary events and reduction of the GFR was observed, while for cerebrovascular and peripheral vascular disease a close association with the albuminuric phenotypes, indicating a different clinical pathogenesis, was reported. Thus specialists must pay the same attention in evaluating both the variables.

It has been clearly demonstrated how the reduction in lipid levels, particularly LDL-C, induce a significant reduction in terms of disease status and death from cardiovascular disease [18] and that this effect can be appreciated, after only three years of treatment, much earlier than the effect of a good glycemic control [19].

Guidelines shared by the principal scientific societies have not indicated a specific target in the management of hypercholesterolemia in the elderly, especially in the diabetic population [20].

Resting on the effectiveness of lipid lowering therapy in individuals below 80 years old, the same objectives for younger people are recommended for very old people in both primary and secondary prevention [21].

Our elder population showed a better lipid profile than the younger. These results can be interpreted in different ways but a survival effect is likely. It is remarkable that HDL-C and triglycerides values are respectively higher and lower in the young old and old subgroups were obese patients were less represented.

Yet, it is necessary to consider that the treatment of the elderly with hypercholesterolemia must be individualized, taking into consideration both age and cardiovascular risk, as well as the general function and grade of independence and disability, as recently proposed and carefully weighing the risks and benefits of statin therapy [22,23].

With increasing age a large part of patients show pressure readings higher than 140/90. In particular, there is an increase in systolic value and the relative cardiovascular risk.

The treatment of hypertension in the elderly is associated with a significant reduction in the mortality from cardiovascular and microvascular complications [24]. It has been widely demonstrated that the reduction of circulatory complications occurs after at least 8 years of good glucose control. Yet, in case of regular control of blood pressure, the benefits are already evident after 2-3 years [25].

Antihypertensive treatment in the elderly is highly effective in reducing cardiovascular events when blood pressure is reduced below 140 mm Hg, but it loses its effectiveness with further reduction.

The guidelines from the American Society of Geriatrics [25] state that the acceptable blood pressure to achieve, for whatever therapy undertaken, is equal to or less than 140/90, where tolerated. However, it is potentially harmful to reach values under 120 mmHg because of the risk of hypotension and falls [16,26,27].

However, given the considerable heterogeneity of the elderly, the American Diabetes Association guidelines advice target blood pressure <140/80 mmHg, recommending aims that are less constricting for elderly patients that have low life expectancy [28].

Feet were examined only in one fifth of the patients and even less in the age group over 75 years. The data collected indicate an important critical area, considering that the patients at risk are diabetic individuals with neuropathy, a history of diabetic foot, progressive amputations or arterial obstructive disease in the lower limbs. All diabetic individuals should undergo at least once a year a complete check up of their feet.

Particular attention must be given to patients over 70 years, and the following aspects must be considered: social, assistance, comorbidity, fragility and other circumstances increasing the risk of developing the "diabetic foot". This critical finding on foot examination is an issue for the diabetes teams in Italy and claim for a different organization.

In this regard, it is necessary to identify and assign specific tasks to the support systems in primary and secondary care that are interdependent on similar programs, involving also general practitioners who can play a key role in preventive care [29].

Diabetic retinopathy is the most threatening among the chronic microvascular complications of diabetes for elderly patients; the incidence of blindness is 6-12 case/100,000 inhabitants/year over 70 years of age and the strongest predictor of retinopathy is the duration of diabetes [30]. Considering the effects of visual loss in type 2 diabetes, patients should be screened for diabetic retinopathy at the time of diagnosis. The following examinations should be programmed at least every two years, and even more frequently in cases of diabetic retinopathy [21].

Diabetes centers must be supplied with devices and/or facilities necessary to follow up examinations. It is recommended to cooperate with the nearest eye clinics and to involve patients in educational courses about the prevention and early diagnosis of diabetic retinopathy, in order to improve self-education [21].

In addition to check ups, good metabolic balance, adequate control of blood pressure, and reduction in the cardiovascular risk factors reduce the risk and progression of diabetic retinopathy [31,32].

Obesity tends to be less prevalent in very old patients. This could be related to the fact that the most overweight patients died prematurely; however, it should be noted that with increasing age, the BMI loses its value as an index for obesity, mainly due to the progressive reduction in height, and its predictive powers on mortality [33].

The percentage of smokers was lower in both sexes with increasing age. This phenomenon could depend on a higher number of discontinuations, related to the increase in comorbidity, in particular those due to cardiovascular problems predisposed by smoking.

Nonetheless, the number of smokers over seventy-five years of age (1 out of 10 men and almost 1 out of 20 women) is still very impressive, and it suggests that there is need for a greater commitment by doctors in this field.

Conclusions

Despite the high level of diabetes care in Italy compared to other Western Countries some areas are still critical and a gap between guidelines recommendations and clinical practice is evident. This gap is more evident in elder people over 74 years of age. In this subgroup, that is by definition the one in need of higher attention, the Italian specialists underestimate the risk for both acute and long-term complications.

Finally, our results can be partially biased by the fact that physicians may omit to record the result of a carried out procedure but the large number of centers and of subjects included in the study make the results reliable.

Thus, any effort should be made by the cultural and organizational perspective to overcome the existing gap.

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Paolo Ziller, Federica Portolan, Giuseppe Pasolini - Cles (TN); Valerio Di Chiara, Maria Luisa Grata, Elisabetta Bergami, Soccorsa Ciannillo, Navia Curzola - Codigoro (FE); Luigi Capretti, Guglielmina Speroni, Luciano Fugazza - Codogno (LO); Cinzia Massafa - Cologno Monzese (MI); Maria Cristina Cimicchi, Carlo Percudani, Tiziana Risolo, Paola Saccò, Manuela Mori - Colorno (PR); Valerio Di Chiara, Maria Luisa Grata, Elisabetta Bergami, Soccorsa Ciannillo, Navia Curzola - Comacchio (FE); Gian Luigi Gidoni Guarnieri, Diana Piccolo, Franca Giacon, Mariolina Scarpel, Clementina Bravin, Elena De Noni, Vanda Daniotti - Conegliano (TV); Giuseppe Panebianco, Federica Tadiotto, Virgilio Da Tos, Michele D'Ambrosio, Monica Faoncella, Marj Zogno, Cristina Lunardi, Patrizia Crivellaro, Loretta Trivellato - Conselve (PD); Dario Pellizzola, Maria Antonella Zampini, Emanuela Frezzati, Maria Elvira Raminelli, Elena Mari - Copparo (FE); Dario Gaiti, Giuseppina Chierici, Silvia Pilla, Bruna Milli, Monica Camporesi, Paola Caretta, Valeria Vezzani, Melita Copelli - Correggio (RE); Alfonso Longobucco - Cosenza; Patrizia Ruggeri, Sergio Di Lembo, Elisa Carrai, Amalia Degli Innocenti, Lucia Manini, Romano Persico, Cristiana Rossi - Cremona; Enrico Gabellieri, Daniela Sansone, Maria Stella Sbriglia, Giuseppina Comba, Giovanni Valesano, Stefania Bertello, Luisella Ballatore, Salvatore Olandri - Cuneo; Giampaolo Magro, Francesco Tassone, Donatella Gaviglio - Cuneo; Giuseppe Marelli, Veronica Vilei, Paolo Rumi, Laura Bellato, Mara Fedeli, Antonella Merlini, Giuseppina Pinelli - Desio (MB); Giuseppe Marin, Maria Luisa Contin, Angela De Cata, Anna Patalano, Paola Parlato, Jessica Jacovacci - Dolo (VE); Giuseppe Placentino, Vittoria Zizzari, Sofia Pellanda, Luisa Folchi, Anna Lorenzini - Domodossola (VB); Donata Richini, Stefano Molinari, Chiara Inversini, Roberto Strazzieri, Paolo Stofler, Marco Andreoli, Simona Fornaro - Esine (BS); Giuseppe Panebianco, Federica Tadiotto, Virgilio Da Tos, Michele D'Ambrosio, Monica Faoncella, Marj Zogno, Cristina Lunardi, Patrizia Crivellaro, Loretta Trivellato - Este (PD); 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Micaela Battistini, Francesca Fabbri, Vilma Campora, Patrizia Carosla, Silvana Chinigò, Andrea Corsi - Genova; Guglielmo Ghisoni, Francesca Fabbri, Marina Torresani, Roberto Crovetto, Andrea Corsi - Genova; Giorgio Luciano Viviani, Arianna Durante, Francesca Pais, Vittorio Lilliu - Genova; Maura Rosco, Cornelia Mzzaraco - Gioia del Colle (BA); Ercole D'Ugo, Mariarosaria Squadrone, Tommaso Amenduni, Maria M Iovannisci, Flora Potente, Teresa Delle Donne, Concetta Massa, Luigi Della Penna - Gissi (CH); Silvestro De Berardinis, Ilde Guarnieri, Marina Splendiani, Rosanna Di Giuseppe, Susanna Lupidii, Rosanna Ruggieri, Sabrina D'Antonio, Antonella Valorosi - Giulianova (TE); Barbara Brunato, Roberta Assaloni, Rosalia Loro, Sandro Bucciol, Raimonda Muraro, Roberto Da Ros, Carla Tortul - Gorizia; Maura Rosco, Chiara Lavacca - Gravina (BA); Fabrizio Quadri, Gigliola Sabbatini, Laura Sambuco, Clorinda Santacroce - Grosseto; Giuseppina Chierici, Silvia Pilla, Bruna Milli, Melita Copelli, Lorella Bertelli, Pietro Zanichelli, Simona Bodecchi, Susanna Rovesti - Guastalla (RE); Cecilia Marino, Augusta Micheletti, Annarita Petrelli; Valentina Pasquini - Gubbio (PG); Angelo Corda, Luisa Pisano, Giacomo Guaita, Cinzia Deias, Paola Marino, Giuseppa Cuccu, Tina Poggi, Arianna Marceddu, Susanna Diana - Iglesias (CI); Giuliana Baldassarri, Anna Vacirca - Imola; Maria Antonietta Fois, Valentina Maria Cambuli, Ada Pilia, Rosa Pilia, Giuliana Cao - Isili (CA); Mauro Giovanni Schiesaro, Giovanni Vita, Daniele Bonato, Katia Poletto - Isola della Scala (VR); Stefania Deiana, Francesca Scanu - Ittiri (SS); Giorgio Trevisan - Jesolo (VE); Rossella Iannarelli, Enrico Storelli, Alessandra Sperandio, Filomena Sciarretta, Romana Cialfi - L'Aquila; Alberto Zappa, Stefano Carro, Laura Dreini, Sonia Valesi, Giovanna Cinguetti, Roberta Parentini, Alessandra Guazzetti, Cristina Pennucci - La Spezia; Ercole D'Ugo, Daniela Antenucci, Anita Minnucci, Angela Bosco, Giovanna Angelicola, Angela Di Federico, Giuseppina Di Marco, Rosanna Fresco, Claudia Di Florio - Lanciano (CH); Diletta Ugolotti, Clelia Di Secli, Iliaria Boselli, Tiziana Cadossi - Langhirano (PR); Albino Massidda, Gisella Meloni, Claudia Putzu, Carlo Cozzi - Lanusei (NU); Raffaella Buzzetti, Camillo Gnessi, Gaetano Leto, Chiara Foffi, Laura Cipolloni, Chiara Venditti, Chiara Moretti, Angela Carlone - Latina; Aldo Giuseppe Morea, Lucia Bondesan, Sandro Perbellini - Legnago (VR); Aurora Valicenti, Stefania Bertoli, Sabrina Cosimi, Sandra Bianchini - Lido di Camaiore (LU); Stefano Genovese, Valeria Valdes, Dina Miele - Limbiate (MB); Graziano Di Cianni, Paola Orsini, Anna Turco, Cristina Lencioni, Chiara Goretti, Claudia Sannino, Paolo Lemmi - Livorno; Maura Rosco - Locorotondo (BA); Alberto di Carlo, Iliaria Casadidio, Iliaria Cuccuru, Laura Maria Chiara Giorgi, Alba Galli, Marzia Piacentini, Elisa Del Bianco, Chiara Russo, Piera Baroni, Antonella Salvini, Vito Michele Cassano - Lucca; Piero Melandri, Paolo Di Bartolo - Lugo (RA); Gabriele Maolo, Barbara Polenta, Nadia Piccinini - Macerata; Maria Maddalena Atzeni, Cristina Porru - Macomer (NU); Cesare Vincenti, Paola Mega, Enza Magurano, Nicola Pastore, Antonella Cananiello - Maglie (LE); Giuliano Gaspardo, Elettra Brussa Toi, Ciro Antonio Francescutto, Luisa Angeli, Lorena Ronchese - Maniago (PN); Stefano Fazion, Francesca Saggiani, Linneo Enzo Mantovani, Adriana Forapani, Raffaella Antoniazzi, Paola Cristianini, Rita Mazzali, Elena Pierobon - Mantova; Salvatore Turco, Anna Amelia Turco, Maria Teresa Fernicola, Giuseppe Cudemo, Giovanna Tagliatalata - Marano di Napoli (NA); Luigi Sciangola, Alessandra Ciucci, Myriam Gandolfo, Baldassarre Grassa, Adele Tono, Rosalia De Marco, Emanuela Simona Olivo, Elisa Bellini - Mariano Comense (CO); Antonino Lo Presti, Antonietta Maria Scarpitta -

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