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RESEARCH ARTICLE

MANAGEMENT OF TYPE 2 DIABETES IN PRIMARY CARE: DREAM OR REALITY?

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Abstract

Abstract: Type 2 diabetes (DM2) is known to be associated with increased cardiovascular morbidity and mortality. The public organisation of medical assistance for diabetics is correlated with better disease control, better prognosis of complications, and lower diabetes-related mortality. The general practitioner plays a crucial role in the management and coordination of medical assistance for diabetics.
Aim: The aim of this study was to study the effectiveness of primary care management of diabetic patients.
Materials and Methods: One-year prospective observational study. In January 2024, all patients diagnosed with diabetes were extracted from the total number of patients (1630). All patients not referred to a diabetes specialist were taken care of by a general practitioner with visits every six months. The values at time 0 and after 12 months were then statistically studied using the Student's T-test with paired samples.
Results: After 12 months, the values of total cholesterol and LDL cholesterol were statistically lower, and we observed an increase in patients taking glifozins and a combination of statin/ezetimibe.
Conclusions: Our data confirm that general practitioners can actively participate in the management of diabetic disease, as decreed by the various inter-society positions; however, the current public health service does not enhance their role.

Introduction:-

Background:

It is well known that type 2 diabetes (T2D) is associated with increased cardiovascular morbidity and mortality. Patients with T2D have a two- to four-fold increase in the risk of coronary heart disease and ischaemic stroke and a 1.5- to 3.6-fold increase in mortality (1). DM2 is also an important risk factor for heart failure, peripheral arterial insufficiency and microvascular complications, with a negative impact on quality of life and life expectancy. It is estimated that, in general, patients with diabetes have a reduced life expectancy of approximately 4-8 years compared to individuals without diabetes2. (1-2)

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According to the Italian Statistical Institute's data (ISTAT), diabetes is reported as the initial cause in approximately 23,000 deaths per year, but it is present among the diseases that play a role in determining death (contributing cause) in approximately 4 times as many cases (over 80,000 deaths). People with diabetes have a higher risk of macrovascular complications (cerebrovascular and cardiovascular diseases) than the non-diabetic population and, in general, have a reduced life expectancy, regardless of the age of onset of the disease. On average, a 50-year-old person with diabetes and no history of cardiovascular disease has a life expectancy that is six years shorter than that of people without diabetes (3).

The organisational quality and efficiency of diabetes care are correlated with better disease control, a better prognosis for complications and lower diabetes-related mortality. From a public health perspective, the quality of care and the territorial management of the disease are therefore considered a fundamental condition for translating clinical and pharmacological advances into real prevention of complications and an improvement in the quality of life of people with diabetes (4).

Primary care physicians play a crucial role in the management and coordination of care for diabetic patients: taking on a patient with a chronic disease (and diabetes mellitus is one of the most complex) requires a modern clinical and organisational-managerial approach. In fact, an organisational model is needed that involves the use of advanced information systems capable of monitoring diagnostic and therapeutic pathways and improving the appropriateness of care, as well as practice assistants and/or nurses for active recall following routine audit activities. (5)

Purpose:
The purpose of this study was to investigate the effectiveness of primary care physicians in managing diabetic patients by evaluating changes in HbA1c and LDL cholesterol target levels after one year.

Materials and Methods:-

A one-year prospective observational study.
In January 2024, the MilleGPG search engine was used on the MilleWin medical record management software to extract all patients diagnosed with diabetes from the total number of patients (1,630).

In accordance with the Policy and Strategic Guidelines for the proper care of people with diabetes (6), patients with type 1 diabetes, metabolic decompensation, multiple insulin injections, women with gestational diabetes and cancer patients undergoing chemotherapy were called and, if not already being monitored, immediately referred to a diabetologist.

All patients not referred to a diabetes specialist were called back to the clinic by the nurse and, from 1 February to 30 April 2024, were examined and taken into care by their primary care physician with six-monthly check-ups.

The anthropometric and biochemical values at time 0 and after 12 months were then statistically analysed using Student's t-test for paired samples.

Results:-

In 2024, out of a total of 179 patients diagnosed with diabetes, the following were referred directly to a specialist: 3 type 1 diabetics, 4 diabetics with active cancer undergoing intravenous chemotherapy, 2 women with gestational diabetes, 24 patients on insulin therapy, and 46 patients with glycated haemoglobin levels considered unsatisfactory for their age and comorbidities.
Overall, as of 30 April 2024, 100 patients with type 2 diabetes had been examined, included in the initiative medicine project and taken into care.

In January 2025, of the original 100 patients: 5 had died, 4 had changed residence and therefore family doctor, and 21 had independently decided to consult a private professional.

Of the original 100 patients, the data of the 70 patients managed independently by the primary care physician were analysed.

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The results are shown in Table 1.

Twelve months after taking charge, the glycated haemoglobin, BMI and glomerular filtration values had not changed in a statistically significant way. Total cholesterol and LDL cholesterol values, on the other hand, were statistically lower after the family doctor's intervention.

Table 2 shows the data relating to the therapeutic choices made by the primary care physician during the 12 months of management.

The most notable results are: a reduction in the percentage of patients who followed only a diet for both glycaemic and cholesterol control, a reduction in the percentage of patients who took metformin and/or ezetimibe as monotherapy, an increase in 2025 in the number of patients taking a combination of glifozin and, for dyslipidaemia, a statin with ezetimibe.

Conclusions:-

The role of the primary care physician in the management of diabetes has long been described in the 'Policy and Strategic Document for Good Care for People with Diabetes' (5). It is our task to monitor the population entrusted to us, including through proactive medicine, in order to identify the population at risk and apply early screening protocols, actively recall people recognised as diabetic, and take charge of people with uncomplicated type 2 diabetes or with stable complications, who have achieved adequate and stable compensation of blood glucose and other cardiovascular risk factors or a satisfactory improvement in the latter, until the conditions of stability and compensation persist, and monitoring of diabetics managed by specialists for urgent referrals in case of decompensation.

Our data confirm that primary care physicians are fully capable of optimally managing the patients entrusted to them. One year after taking charge, metabolic control was stable despite the active intervention of the physician, as demonstrated by the increased prescription of gliflozins at the expense of diet alone or metformin monotherapy. This demonstrates that primary care finds its most noble use in proactive medicine: in this context, actively calling asymptomatic patients with good compensation, performing a comprehensive cardiovascular reassessment and implementing the latest cardiorenal prevention guidelines has made it possible to put into practice what inter-society guidelines have been stating for some time (7).

The same applies to the management of hypercholesterolaemia: active intervention by doctors has led to an increase in the prescription of lipid-lowering drugs, either as monotherapy or in combination. Unfortunately, this has not been sufficient to achieve the target set by the guidelines. The results of our study are in line with those of the European SANTORINI study registry: as has been known for some time, this study, which is the largest European registry conducted since the publication of the 2019 ESC/EAS guidelines on the management of dyslipidaemia, observed a definite improvement in average LDL-C levels after one year of follow-up in both high-risk and very high-risk patients, but unfortunately the percentage of patients reaching the true target was still too low (8). This failure to reach the target is due to the fear with which doctors prescribe statin therapy, secondary to the well-known nocebo effect that affects a large part of the population with regard to statin therapy (9). In this context, the scientific community must work to provide accurate information to citizens who are too often reluctant to start taking cholesterol medication.

In conclusion, our data confirm that general practitioners can actively participate in the management of diabetes, as decreed by various inter-society positions (5). However, the current Italian National Health Service do not enhance their role and struggle to value it from an economic and training point of view. Many family doctors do not receive the financial incentives to hire a practice assistant and/or nurse: these figures are indispensable for the proper management of chronic diseases in the primary care setting, which is involved on a daily basis in many emergencies that require attention and assistance. Secondly, academic and specialist training must focus more on educating young colleagues both in terms of knowledge (diabetes is often taught together with classical endocrinology, associating it with diseases with a decidedly different prevalence and economic impact) and in practical terms, facilitating practical internships at diabetes centres. Only with the necessary financial incentives and adequate training will we begin to speak the common language that underpins cultural and professional collaboration.

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Table 1: Results of the study

TOT 70 pz 60M/40F	**2024**	**2025**	
Age	74 ± 14	76 ± 8	
BMI	28 ± 11	27 ± 13	P= 0.52
HbA1c %	7.1 ± 3.5	6.7± 1.2	P= 0.26
Cholesterol TOT mg/dl	**150 ± 33**	**138± 31**	**P= 0.0011**
Cholesterol HDL mg/dl	48 ± 11	49 ± 21	P= 0.36
Triglycerides mg/dl	106 ± 35	107 ± 57	P= 0.45
LDL cholesterol mg/dl	**80 ± 27**	**72 ± 28**	**P= 0.006**
Glomerular Filtration rate CKD-EPI	69 ± 19	66± 21	P= 0.19

Table 1 Percentage of hypoglycaemic and lipid-lowering therapies administered before and after surgery

TOT 70 pz 60M/40F	**2024**	**2025**
Only 1 diabetic medication		
Only diet	20%	5%
DPP4i	0.5 %	0.5%
SGLT2i	8%	8%
Metformin	25%	15%
GLP1RA	0%	0%
2 or more medications		
DPP4i+Metformin	2%	2%
Dpp4i+SGLT2i	1.5%	1.5%
SGLT2i+ Metfomin	25%	50%
GLP1+SGLT2i+Metformin	10%	10%
GLP1+Metformin	5%	5%
GLP1+Basal Insulin	3%	3%
Cholesterol medications		
Diet	30%	5%
Only statins	30%	35%
Statins + Ezetimibe	25%	55%
Only Ezetimibe	15%	5%

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