Intervention project: follow-up of hypertensive and diabetic users using optimized cardiovascular risk stratification through VBA®

Projeto de intervenção: acompanhamento dos usuários hipertensos e diabéticos, utilizando a estratificação de risco cardiovascular otimizado através de VBA®

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ABSTRACT
Introduction: Among the main chronic diseases are cardiovascular diseases, with systemic arterial hypertension and diabetes mellitus as important risk factors. The identification of patients with high cardiovascular risk is a priority action in Primary Health Care. The Framingham score is used for this classification. The motivation for this study was the finding of the loss of outpatient follow-up of patients with hypertension and diabetes, which leads to treatment abandonment and a high number of complications. General objective: To implement a monitoring worksheet for hypertensive and diabetic patients in the family health strategy (FHS) and their classification according to Framingham score in low, medium and high risk. Methodology: Hypertensive and

diabetic patients were located in the electronic medical record and classified according to the Framingham score using a spreadsheet with VBA computer language in the Microsoft Excel program. Results: A total of 219 medical records were analyzed from September to November 2021. Of the total, 210 users with systemic arterial hypertension (SAH) and 65 with diabetes mellitus (DM). Regarding cardiovascular risk, 86 patients (39.3%) fit into low risk, 37 patients (16.9%) in moderate/intermediate risk and the rest, 96 patients (43.8%) in high cardiovascular risk. Conclusion: The expected results with the organization of users with optimized spreadsheets bring improvements such as better control of four-monthly, six-monthly or annual monitoring according to the classification of cardiovascular risk, active search for absentees through community health agents with guidance on the importance of follow-up in PHC, community health indicators in relation to hypertensive and diabetic patients and targeting intervention proposals aimed at the population at higher risk such as lectures, physical activity groups and conversation circles on the subject. In addition, it is essential to note that there is a high number of consultations for this study group, and monitoring with nursing through its protocols is essential to contribute to improving health care.

Keywords: Hypertension, Diabetes mellitus, Cardiovascular risk, Public Health.

1 INTRODUCTION

Chronic non-communicable diseases (NCDs) develop over the life course as a consequence of a number of factors. Smoking, insufficient physical activity, unhealthy diet and harmful use of alcohol are among the main modifiable risk factors. Among the main NCDs are cardiovascular diseases (CVD), with Systemic Arterial Hypertension (SAH) being the main risk factor and a potential clinical factor for mortality (DOS SANTOS et al., 2021). It should be noted that 80% of hypertensive patients have comorbidities such as diabetes, dyslipidemia, smoking or family history of atherosclerosis (BARROSO et al., 2021; DOS SANTOS et al., 2021). For an individualized approach, it is necessary to stratify hypertensive patients based on blood pressure levels and associated risk factors. The adoption of the Framingham Score is proposed by the Ministry of Health, as its use helps to define the prognosis and the conduct adopted in Primary Care (PIMENTA; CALDEIRA, 2014).

Health and social development are inseparable, especially to address the social determinants of health-disease, with more democratic and social participation and universal access to health care (TESSER; NORMAN; VIDAL, 2018). Municipal autonomy in the administration of Primary Care led the Family Health Strategies (ESFs) to carry out clinical, preventive and promotional work, in addition to territorialization actions (TESSER; NORMAN; VIDAL, 2018).

Therefore, the identification of patients with high cardiovascular risk or pre-existing cardiovascular diseases is a priority action for the early detection and management of these risks in Primary Health Care (MALTA et al., 2021a).

Systemic arterial hypertension (SAH) is a comorbidity defined by high and sustained levels of blood pressure, often combined with changes in target organs such as heart, brain and kidneys (BRASIL, 2014). The Brazilian prevalence of SAH is on average 32% for adults, reaching 75% of individuals over 70 years of age (BRAZILIAN SOCIETY OF CARDIOLOGY, 2016). In Santa Catarina, the prevalence of SAH was 13.5% in 2011, but was only 7% in 2004 (TORTORELLA et al., 2017).

Diabetes Mellitus (DM) is a chronic metabolic disorder characterized by high glycemic levels and long-term micro and macrovascular complications (VIVAS-GIRALDO; BRAVO-ACOSTA, 2021). Brazil is the fifth country with the highest number of diabetic adults in the world, with a prevalence of 7.7% of diabetes in the population over 18 years of age (VIGILANCIA DE FATORES DE RISCO E PROTEÇÃO PARA DISENÇAS CRÔNICAS POR INQUÉRITO TELEFÔNICO (VIGITEL), 2020). In Santa Catarina, DM prevalence increased from 2.2% in 2004 to 4.4% in 2011 (TORTORELLA et al., 2017), surpassing the 6% mark in 2018 (VIGILANCE OF RISK AND PROTECTION FACTORS FOR CHRONIC DISEASES BY TELEPHONE SURVEY (VIGITEL), 2020).

In principle, the vast majority of hypertensive patients should be assisted at the primary care level through Family Health teams. However, there is great difficulty in this management, and through the Framingham Score can be considered a strategy to increase adherence to treatment and guide more effective results (PIMENTA; CALDEIRA, 2014).

Framingham stratification helps not only the physician in the management of hypertensive patients, but can also help increase the participation of this individual in their treatment, when they become aware of their cardiovascular risk (MALTA et al., 2021b). Although physical inactivity does not influence the Framingham scale, it is associated with higher cardiovascular morbidity and mortality. Physical exercise is associated with a reduction in diseases, disabilities, and improved quality of life in the elderly (BRAZILIAN SOCIETY OF CARDIOLOGY, 2016). On the other hand, the alteration of the lipid profile is directly linked to atherosclerosis and its consequences and has value in the Framingham score (PIMENTA; CALDEIRA, 2014).

Based on this, a software with the variables of the Framingham Score was idealized to facilitate and develop better assistance for hypertensive and diabetic patients in the ESF areas. It was found and thought of this intervention from the experiences in which hypertensive and diabetic users present poor adherence to follow-up, indifference to the severity and possible evolution of their pathology and the compromise of their therapeutic approach.

2 MATERIALS AND METHODS

The intervention project was carried out during the elective activities of medical students in supervised internship at ESF Jackson Roberto Carl, initially, an updated search was made for hypertensive and diabetic users of previous spreadsheets who underwent medical evaluation in the period from 01/2020 to 10/2021. In order to facilitate the insertion of data in spreadsheets and to automate the calculation of the Framingham score, a program was created using the VBA (Virtual Basic for Applications) computer language through Microsoft Excel software. With the records updated and duly inserted into the spreadsheet, the statistics of the population enrolled were obtained in relation to the classification of cardiovascular risk (low, intermediate and high), based on the Framingham score.

3 RESULTS AND DISCUSSION

A total of 219 users were analyzed from September to November 2021. Regarding the cardiovascular risk identified by the score, 86 patients (39.3%) fit into low risk, 37 patients (16.9%) in moderate/intermediate risk and the rest, 96 patients (43.8%) in high cardiovascular risk.

Cardiovascular risk - prevalence of cardiovascular risk
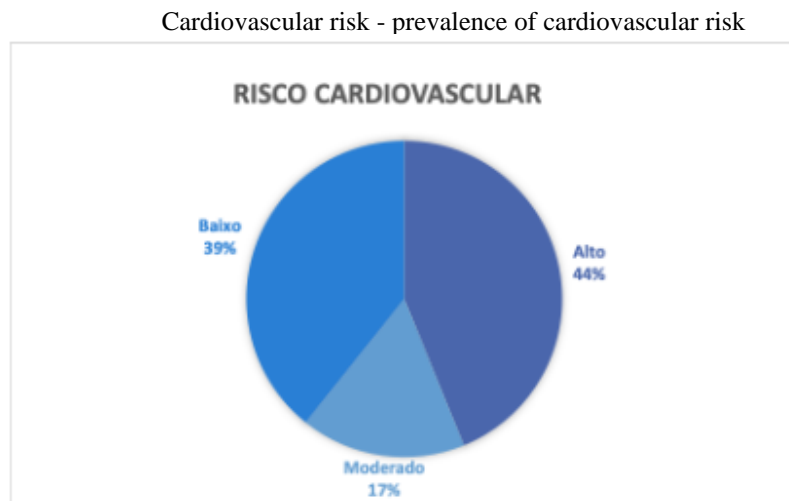
Source: The authors

Among the 92 male patients (42%), 30 (32.6%) were diabetic, 86 (93.4%) hypertensive and 24 (26%) both. Regarding cardiovascular risk stratification, 50 patients (54.3%) were at high risk, 27 (29.3%) at intermediate/moderate risk and 15 (16.3%) at low risk. Also, 48 are obese, totaling 52.1% of men.

Figure 01: results of cardiovascular risk classification according to the spreadsheet implemented.

Source: the authors

Graph 2: comparison of comorbidities between men and women
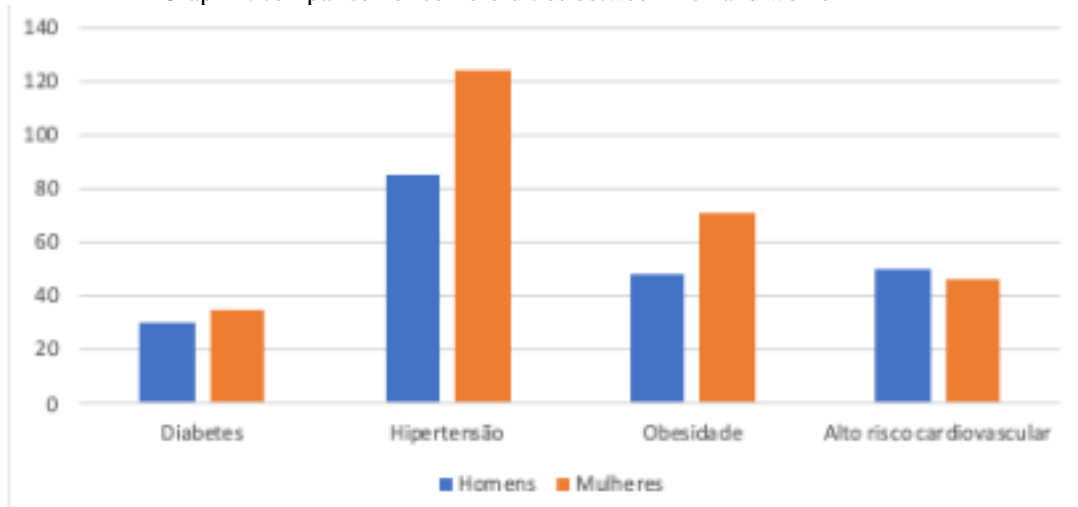
Source: The authors

Of the 127 women in the study (58% of participants), 35 (27.5%) were diabetic, 124 (97.6%) hypertensive and 32 (25.1%) both. Regarding the cardiovascular risk score, 46 (36.2%) are high risk, 10 (7.8%) are intermediate/moderate risk and 71 (55.90%) are low risk. Of the total number of women, 71 (55.9%) were obese.

Despite the lower number of men, 42%, compared to 58% of women, the number of men with cardiovascular risk is higher than among women, 54.3% compared to 36.2%. When comparing the two groups in each variant, there is a higher prevalence in women with diabetes,

hypertension and obesity compared to men. However, in relation to high cardiovascular risk, there is a higher prevalence in men than in women.

4 CONCLUSION

The expected results with the organization of users with optimized spreadsheets bring improvements such as better control of the four-monthly, six-monthly or annual follow-up according to the cardiovascular risk classification of users are better control of the four-monthly, six-monthly or annual follow-up according to the cardiovascular risk classification, active search for absentees through community health agents with guidance on the importance of follow-up in PHC, community health indicators in relation to hypertensive and diabetic patients and targeting intervention proposals aimed at the population at higher risk such as lectures, physical activity groups and conversation circles on the subject. And to provide continuous care and establish comparisons in the treatment and management of users at high cardiovascular risk.

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