

COMPLICATIONS OF POLYPHARMACY IN ELDERLY WITH SYSTEMIC ARTERIAL HYPERTENSION

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Abstract: Polypharmacy is a clinical condition defined by the use of four or more drugs with or without professional guidance (WHO, 2017). Such drugs when prescribed with the best scientific evidence present in the literature based on strong studies, the drugs can bring quality of life and longevity, minimizing possible damage. However, when the harms of medication outweigh the benefits, from unacceptable amounts of drugs or through unnecessary treatments, polypharmacy must be re-evaluated (PAYNE., 2020). In patients with Systemic Arterial Hypertension, polypharmacy is quite common, since blood pressure control is important to avoid the risk of cardiovascular mortality. Depending on the severity of the SAH, the simultaneous use of more than one class of antihypertensive medication may be necessary. In this sense, this article aims to address the multifactorial character of the recognition and analysis of possible consequences of the use of polypharmacy in patients who have systemic arterial hypertension. For example, the risk to patient safety due to adverse effects and drug interactions.

Keywords: Elderly, polypharmacy, hypertension.

INTRODUCTION

According to Law No. 8842/94, which provides for the National Policy for the Elderly, it concludes that the elderly is the person over 60 years of age in developing countries and 65 in developed countries (BRAZIL, 1994). In sequence, with the increase in life expectancy, the proportion of elderly people has been rising around the globe (GOMES; CALDAS, 2008). This comes from the demographic and epidemiological transition, which has accompanied the life expectancy of the population, as well as their inadequate living habits and resulted

in health problems, such as chronic non-communicable diseases, such as Systemic Arterial Hypertension (SAH).

Furthermore, this fact implies a burden on public health (SILVEIRA, 2014; RIBEIRO, 2010). Therefore, the estimated direct and indirect expenditure for the treatment for SAH alone in 2010 was US\$46.4 billion and this number is expected to increase to US\$274 billion by 2030. Among the elderly, aged 65 and over, 80% and 50 % have at least one and two or more chronic diseases, respectively, which makes poor medication administration and associated costs worrying (MUKETE; FERDINAND, 2016), and consequently will damage the quality of life of individuals (SILVEIRA, 2014); RIBEIRO, 2010). As mentioned above, aging leads to multiple symptoms and diseases, increasing the need for health resources, especially the use of medication. Therefore, polypharmacy (PF) becomes one of the main problems of drug therapy in the elderly (CARVALHO et al., 2007) in addition to contributing to the costs of medical care for the patient and the health system.

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In patients with Systemic Arterial Hypertension (SAH), polypharmacy is quite common, since blood pressure (BP) control is important to avoid the risk of cardiovascular mortality. Depending on the severity of the

SAH, the simultaneous use of more than one class of antihypertensive medication may be necessary, such as adrenergic inhibitors, vasodilators, beta-blockers and diuretics (VRETOS et al., 2017). However, when it exceeds more than 4 medications, PF has been consistently identified as a risk factor for episodes of adverse effects.

It is estimated that the risk of problems such as loss of balance, impaired gait and orthostatic hypotension, which are associated with an increase in falls and fractures in this age group, increases from 13% in the elderly who use two or more medications to 58% in five and 82% in seven or more (DAVIES; O'MAHONY, 2015). Thus, it is essential that the health professional must be aware of the problem that is polypharmacy and the risks it entails (WHEBERTH, 2011). This way, the rational use of drugs is an essential factor in the attention of health systems, which makes the provision of careful care to the elderly population with SAH extremely relevant.

GOALS

General goal

To recognize and analyze, through a literature review, the possible consequences of the use of polypharmacy in patients who have systemic arterial hypertension.

Specific goal

- To understand SAH in the elderly
- To address the consequences of polypharmacy use in this population
- To evidence the role of health in the face of this problem

METHOD

STUDY CHARACTERISTICS

The base study of this work consists of a qualitative and quantitative systematic review of the literature, produced in the last

15 years (2007-2022), on the complications of polypharmacy in elderly patients with systemic arterial hypertension. As it synthesizes similar and good quality studies, the systematic review is considered the best level of evidence for decision-making on therapeutic issues.

DATA EXTRACTION AND SELECTION

The data extraction method was based on obtaining articles from the platforms PubMed, SciELO, BVsalud, Google Scholar using as descriptors and combinations of the same: Elderly, polypharmacy and hypertension. Initially, the descriptors selected a total of 116 articles, in English, Spanish and Portuguese. After extraction, the selected studies were submitted to the second screening procedure, which consisted of systematic reading in search of the identification of criteria sought by the study, throughout the texts, after reading the abstract, those that did not follow the grounds raised in the research, data shown in figure 1. Finally, 15 articles were selected to be read in full and in pairs and which, later, were included in the review for descriptive analysis of the most relevant studies for the development of the research, process which is shown in figure 2.

RESULTS AND DISCUSSION

QUALI-QUANTITATIVE RESULTS

The qualitative-quantitative analytical process allows the articulation between a set of objective data and the relationships, acts and social structures, acting in a complementary way, in order to generate scientific knowledge (PASCHOARELLI et al., 2015). In this study, the total sample of articles, obtained by direct research of the descriptors, in the selected databases, was refined by the active search of the terms and/or concepts described in the ethical model of Beauchamp et al. (2001), so that, of the total of 116 articles collected,

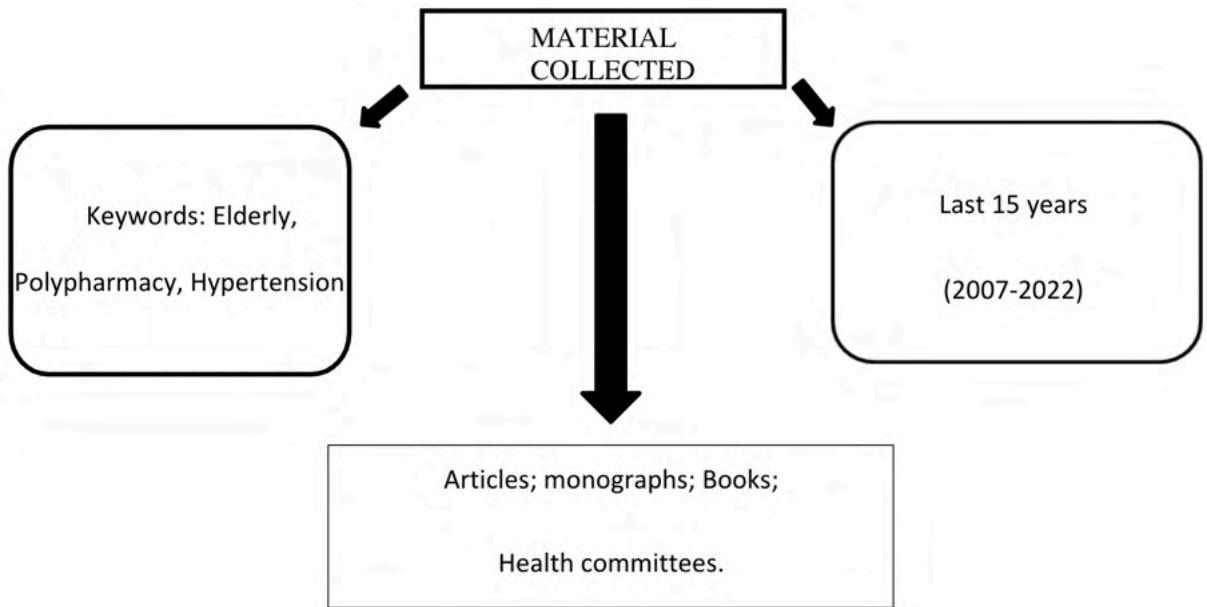


Figure 1: Selection methodology.

Fonte: Próprios autores, 2022.

Database	Selected Studies	Failed studies
PubMed	2	10
SciELO,	5	46
BVsalud	5	25
Academic Google	3	16

Figure 2: Selection of Articles.

Source: Authors themselves, 2022.

13% demonstrated the full presence of the study objectives, addressing complications for elderly people who had HAD. Therefore, the study reveals that most of the scientific literature, produced on the complication of polypharmacy in elderly people with SAH, guides its discussion and importance of the topic for public health, both as a form of counseling and providing solutions.

DISCUSSION

The term 'polypharmacy' or 'polypharmacy' is widely used today and has been applied when the patient consumes 5 or more drugs together and, in fact, geriatric polypharmacy (Maher Jr, Hanlon, Hajjar, 2014). There are two types of classifications for PF that were created through the division into minor PF, which occurs when the individual uses two to four medications, and major PF, which occurs when the use of five or more medications (CARVALHO et al., 2012). Nascimento et al. (2017), when demanding FP as the use of more than five drugs, found a prevalence of this practice in 9.4% among drug users in the general population and in 18.1% in elderly individuals over 65 years of age.

The increase in these data in the elderly population is primarily determined by age-related factors, such as changes in body composition, prevalence of NCDs that require the association of several medications, and by the way in which the health care of the elderly is carried out, with different specialists who are unaware of their medication history (MORSCH et al., 2015). According to Secoli (2010), the risk of adverse drug reactions increases by 13% with the use of two drugs, by 58% when increasing to five drugs, and increases to 82% when seven or more drugs are consumed. Other researchers (Pedrós et al., 2016) observed in a pharmacovigilance program in Spain that 86% of patients

in a tertiary care hospital were exposed to polypharmacy, with a suspected drug interaction in 49% of cases.

Thus, taking into account this hypothesis that the administration of relatively low doses of several drugs results in greater tolerability than the administration of relatively high doses of one drug, current clinical guidelines for the treatment of SAH suggest combination therapies, if necessary, thus increasing the amount of medication for the treatment of hypertensive patients (SATO; AKAZAWA, 2013; MALTA et al., 2015). Regarding morbidity and mortality, the data are contradictory, since the reason for death is not always the medication, with other explanations for what happened (SECOLI, 2010; LU et al., 2015; NASCIMENTO et al., 2017).

Other research has observed that PF can lead to poor adherence to treatment, reduced functional capacity and multiple geriatric syndromes (MAHER; HANLON; HAJJAR, 2014). Finally, PF has been consistently associated with functional decline in senile patients. In a prospective study of community-dwelling older adults, increased use of prescription drugs was associated with decreased ability to perform instrumental activities of daily living and decreased physical functioning (CRENTSIL et al., 2010).

CONCLUSION

The reviewed studies reinforce that polypharmacy is a multifactorial process, and predictors and inappropriate prescription are associated with negative health outcomes, such as increased frequency and types of medication complications involving different classes of drugs, in addition, some studies show interventions most successful in optimizing FP prescription.

Furthermore, the present review allowed us to conclude that SAH is a multifactorial

clinical condition with an asymptomatic and silent character. It is known that this pathology is characterized when there is an increase in the resistance of the arterial walls, related to cardiac output and peripheral vascular resistance, thus leading to an increase in BP. It has a high prevalence among the elderly population, which will tend to worsen with the expected aging of populations worldwide.

PF has been associated with SAH due to the need for combined therapies, thus increasing the amount of drugs for the treatment of elderly hypertensive patients.

In this age group, increased use of multiple medications comes with an increased risk of negative health outcomes, such as higher healthcare costs and health harms rather than benefits. Finally, inadequately conducted FP can be a risk factor for patient safety due to adverse effects and drug interactions. The results, including patient adherence, show the need for new strategies to reduce arterial hypertension. Although FP may be necessary in patients with chronic diseases, the literature shows the search for new non-pharmacological strategies in the treatment of these people.

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