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Research Article

**INCIDENCE OF ISOLATED SYSTOLIC HYPERTENSION IN
THE ELDERLY WITH HYPERTENSION**¹Dr Soha Khan, ²Dr Zainab Mehreen, ³Dr Zainab Mustansar¹Nishtar Medical University and Hospital, Multan²Nishtar Medical University and Hospital, Multan³Nishtar Medical University and Hospital, Multan

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Abstract:*Aim: To determine the frequency of isolated systolic hypertension in elderly hypertensive patients.**Study Design: A descriptive study.**Place and Duration: In the Medicine Unit II of Nishtar Hospital Multan for six months duration from September 2019 to February 2020.**Methods: 148 cases over 50 years old of both men and women were included. The blood pressure of all these people was measured with a standard sphygmomanometer at admission and 2 weeks after the patient lay comfortably for at least five minutes. The mean of two measurements was taken as final blood pressure. Those hypertensive patients over 50 years of age were enrolled from both, in-patients as well as out-patient department of the Nishtar Hospital Multan. A specially designed form was used to collect data using random probability sampling.**Results: Of 148 cases, 24 (16.2%) had isolated systolic hypertension, 20 (13.5%) was in the range of isolated systolic hypertension, in 82 (55.4%) systolic diastolic hypertension was observed, and 8 (5, 4%) had diastolic hypertension.**Conclusion: It has been observed that the incidence of isolated systolic hypertension increased in the elderly group. As the frequency of systolic hypertension increases, the risk of stroke, cardiovascular disease and ischemic heart disease increases in older people. It remains the main indicator of systolic blood pressure, cardiovascular mortality, myocardial infarction, left ventricular hypertrophy and renal dysfunction among blood pressure indicators. Cardiovascular risk gradually increases and doubles with every 20/10 mm Hg increase in blood pressure. Although its frequency drops in the West, it is increasing in Asia.**Key words: isolated systolic hypertension (ISH), isolated borderline systolic hypertension (BISH), isolated diastolic hypertension, and systolic diastolic hypertension.***Corresponding author:****Dr. Soha Khan,**

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INTRODUCTION:

Isolated systolic hypertension has been considered an important dilemma in recent years, especially for older people. The pattern of high blood pressure changes with age. Before reaching the age of 50, most people with hypertension have high diastolic pressure. After 50 years of age, isolated systolic hypertension prevails because systolic pressure continues to increase and diastolic pressure tends to decrease. Structural and functional changes leading to an increase in arterial stiffness and an increase in systemic vascular resistance in the arterial tree contribute to the development of isolated systolic hypertension in the elderly. It remains the main indicator of systolic blood pressure, cardiovascular mortality, myocardial infarction, left ventricular hypertrophy and renal dysfunction among blood pressure indicators. Cardiovascular risk doubles with every 20/10 mmHg increase in blood pressure. Although its frequency drops in the West, it is increasing in Asia. In Pakistan, all three people over the age of 45 have high blood pressure. In the United States, 30% of people over the age of 30 have hypertension without treatment in the United States. Pakistan's blood pressure detection rates are alarmingly low, requiring the creation of a National Program to improve detection, awareness and treatment. Therefore, detection and treatment of hypertension is important. More aggressive intervention approaches and therapeutic strategies are needed to effectively control blood pressure and reduce cardiovascular risk factors in older patients with hypertension. This fact forced me to work on this study, so that patients could take primary prevention in this regard and effectively reduce cardiovascular events. The latest hot topic in the field of hypertension concerns the oldest isolated systolic hypertension (ISH) in the elderly. Hypertension itself is defined as a systolic pressure of 140 mmHg or higher or a diastolic pressure of 90 mmHg or higher while the patient is comfortable. It is also classified as isolated systolic hypertension, isolated borderline systolic hypertension, diastolic hypertension, and systolic diastolic hypertension. Isolated systolic hypertension (ISH) is defined as

diastolic blood pressure less than 90 mmHg and higher than 160 mmHg. Borderline systolic hypertension (BISH) is defined by > 140 mm Hg but <160 mm Hg systolic blood pressure <90 mm Hg diastolic blood pressure. Isolated diastolic hypertension (HDI) is defined as a diastolic blood pressure higher than 90 mmHg with a systolic blood pressure lower than 160 mmHg. The pattern of increase in blood pressure varies depending on age in most populations. Most people have diastolic hypertension before they reach the age of 50. After the age of 50, systolic pressure continues to increase, and diastolic pressure tends to decrease, so isolated systolic hypertension predominates in the elderly.

MATERIALS AND METHODS:

This study was held in the Medicine Unit II of Nishter Hospital Multan for six months duration from September 2019 to February 2020. 148 cases over 50 years old of both men and women were included. The blood pressure of all these people was measured with a standard sphygmomanometer at admission and 2 weeks after the patient lay comfortably for at least five minutes. The mean of two measurements was taken as final blood pressure. Those hypertensive patients over 50 years of age were enrolled from both, in- patients as well as out-patient department of the Nishter Hospital Multan. A specially designed form was used to collect data using random probability sampling.

RESULTS:

148 hypertensive patients were included in the study; 86 of them (58.1%) are men and 62 (41.9%) are women (as shown in Table 1). No patient lost observation during this study. In this study, only 24 patients (16.2%) had isolated systolic hypertension, 17 patients (11.5%) fell to the systolic hypertension limit, 85 patients (57.4%) had systolic and diastolic hypertension, only 8 patients were isolated (5.4%) patients with diastolic hypertension and 14 patients (9.5%) were controlled (as described in Table III). In this study, 64.2% of patients were in the fifth decade, 31.8% of patients were in the sixth decade, 2% of patients were in the seventh decade, only 2% of patients were in the eighth decade (as indicated in Table II)

Table 1: Gender distribution

| N | Gender | BP | Age in years |
|---------|--------|-----|--------------|
| Valid | Male | 148 | 148 |
| Missing | Female | 0 | 0 |

| Valid | Frequency | % | Valid% | Cumulative Percent |
|--------|-----------|-------|--------|--------------------|
| Male | 86 | 58.1 | 58.1 | 58.1 |
| Female | 62 | 41.9 | 41.9 | 100.0 |
| Total | 148 | 100.0 | 100.0 | |

Table II: Age distribution: Age in years

| Valid (Yrs) | Frequency | % | Valid% | Cumulative Percent |
|-------------|-----------|-------|--------|--------------------|
| 51-60 | 95 | 64.2 | 64.2 | 64.2 |
| 61-70 | 47 | 31.8 | 31.8 | 95.9 |
| 71-80 | 3 | 2.0 | 2.0 | 98.0 |
| 81-90 | 3 | 2.0 | 2.0 | 100.0 |
| Total | 148 | 100.0 | 100.0 | |

Table III: Frequency of different types of blood pressure

| Valid | Frequency | % | Valid% | Cumulative Percent |
|-------------------------|-----------|------|--------|--------------------|
| SBP | 24 | 16.2 | 16.2 | 16.2 |
| Borderline SBP | 17 | 11.5 | 11.5 | 27.7 |
| Both SBP/DBP | 85 | 57.4 | 57.4 | 85.1 |
| DBP | 8 | 5.4 | 5.4 | 90.5 |
| Controlled on treatment | 14 | 9.5 | 9.5 | 100.0 |
| Total | 148 | 100 | 100 | |

SBP=Systolic blood pressure

DBP=Diastolic blood pressure

DISCUSSION:

The study showed an increased incidence of systolic hypertension with age (Fig. I). In the fifth decade, the most common form of hypertension is a combination of systolic diastolic hypertension, but with age the tendency to systolic and borderline systolic variants of hypertension changes. An increase in the number of patients with cardiovascular events at high risk of mortality. When assessing the incidence of isolated systolic hypertension, we only considered people with isolated systolic hypertension during the study. Patients controlled by treatment may suffer from ISH at the time of the initial diagnosis. This may actually underestimate people with systolic hypertension. Increasing data from national and international studies have shown a strong relationship between advanced age and isolated systolic hypertension. In developed countries, hypertension is expected to be higher than in developing countries with younger populations such as ours. The Pakistani National Health Survey (1990-4) has highlighted the huge burden of hypertension in Pakistan. The incidence of general hypertension in Pakistani aged 15 years and older was 19%. 22% of Pakistan's population over the age of 15 and a third of the population over the age of 45 suffered from hypertension. It clearly shows that there is a linear relationship between age and systolic blood pressure. Standardized age prevalence ranged from 17.3% to 25.3% in men and 9.9% to 41.4% in women among various ethnic groups, with Balochi being higher in women and lower in Sindhi women. The high incidence of hypertension in urban residents' results from

excessive obesity in this population. Our data can also be compared with data from Indian studies, in which important studies were carried out to determine the frequency and distribution of systolic blood pressure. A study in the Parsi community in Mumbai showed that the incidence of ISH was 6.9% (men: 3.6% women: 9.7%) according to SHEP criteria. The incidence according to JNC VI criteria is 15% in men and 23.3% in women, and the average incidence is 19.5%. This frequency is not standardized by age among HT patients, the ISH index gradually increases with age. ISH (according to SHEP criteria) aged over 60 years included 53.2% of patients with hypertension (37.5% men; 60.8% women) and 73% patients with HT (men 69.3%; women). 75.3%). The corresponding numbers in these ≥ 70 years are 65.5% - men 51.2%, women 71.7% according to SHEP criteria and 79.8% - men 75.6% and women 82.1% according to new criteria. (The SHEP criteria define ISH as systolic blood pressure higher than 160 mmHg, while the new criterion describes systolic hypertension higher than 140 mmHg.) In the elderly population in the Assam study, ISH was detected in hypertension, among hypertensive patients in 13.2% of men and 10.31% of women. On the occurrence of hypertension and risk factors in a selected South Indian population, isolated systolic hypertension was found in 15.1%, of which 14.9% were men and 15.3% women. The high prevalence of systolic hypertension has been documented in some recent studies in India, among Kerallity (51.8%), as well as in the Parsi community in West India (73% in the age group of 70). Among the larger participants (65%) from South India, Assamese from North East India (63.63% for people

over 60 years) and Southeast Asia (65%) supported by WHO, the seventh in the study of the urban community in India the eighth decade. International data also show that the incidence of hypertension increases with age and affects two-thirds of people over 60 years of age. Without treatment, approximately 30% of people over the age of 20 in the United States suffer from hypertension. In the Framingham Heart Study, over 90% of participants aged 55 years with normal blood pressure developed hypertension. According to NHANES II, blacks have a higher incidence than proteins (38% versus 38%), and men more often than women (33% versus 27%). These data confirm the trend of prevalence of hypertension with age in the US population. This applies to black, white, men and women. As reported by EE Franklin et al. United States About 56% of untreated hypertensive patients have isolated systolic hypertension after the age of 50, and more than 90% of people over the age of 80 have isolated systolic hypertension. These data only show untreated hypertensive patients, which is contrary to our study in which we included hypertensive patients in treatment. In addition to the other disadvantages listed below, this may again be a reason for us and western research. In the National Health and Nutrition Survey Survey (NHANES) III, the goal was to look at models of systolic and diastolic hypertension by age, and to determine when treatment and control should be recommended. Percentage distribution of 3 blood pressure subtypes (isolated systolic hypertension, combined systolic / diastolic hypertension and isolated diastolic hypertension) were classified in two age groups (<50 and 50 years) as uncontrolled hypertension (untreated and untreated). . Generally isolated systolic hypertension was the most common subtype of uncontrolled hypertension (65%). Most hypertensive patients (74%) were 50 years old and almost all (94%) of this untreated older group (94%) were correctly classified only on the basis of systolic blood pressure, unlike younger patients. Classified with diastolic blood pressure is not better treated. In addition, the majority of patients (80%) in untreated and ill-treated older groups had isolated systolic hypertension, and younger groups (-13.3 and -16.5 mmHg) required a greater reduction in systolic blood pressure than -6.8 and -6.1 mmHg; to achieve the treatment goal at $P = 0.0001$ systolic blood pressure <140 mmHg, respectively. There is also a large inconsistency in the occurrence of hypertension on the Indian subcontinent. This diversity may be due to the fact that our study was age-appropriate and was found in older people. Secondly, unlike our study, most investigated the occurrence of uncontrolled hypertensive patients. In developing countries with cardiovascular events and worse consequences, the incidence of hypertension and diabetes is high, which is why fewer people survive in the elderly group. Another difference is

the availability of medical advice that older people in Pakistan do not have access to, especially because of ignorance, poor socioeconomic status, and lack of awareness compared to the West. In our study there were many limitations, because they were carried out only in 148 cases of elderly hypertensive patients in one center. It may not represent disease burden in other parts of Pakistan, but it gives respect and thoughts about non-communicable diseases in developing countries such as Pakistan. There are 2 important test results; the first ISH is one of the most common forms of hypertension. The second frequency of isolated systolic hypertension increases with age. This is confirmed by the results of my work.

CONCLUSION:

Isolated systolic hypertension is increasingly observed in elderly patients because the incidence of isolated systolic hypertension in patients is associated with increased cardiovascular mortality. (Specify the risk factor and its elimination or improvement).

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