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HOSPITALIZATION EPISODES CAUSED BY THROMBOTIC ACCIDENTS SUCH AS MYOCARDIAL INFARCTION OR STROKE IN ROMANIA, 2015-2021

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Cardio and cerebrovascular accidents represent major emergencies in the health system, being the first two causes of death worldwide. In Romania, with reduced financial possibilities in the health system and an important part of the population that adopts an unhealthy lifestyle in which most of the risk factors for cardio and cerebrovascular diseases are present, the premises of a gloomy scenario are created. The reduction of negative consequences could be the result of studies/ analyses carried out at different time intervals, which highlight the extent of the phenomenon, population groups and affected areas, studies that can be the basis of decisions in the field of health policies.

Keywords - myocardial infarction, cerebral infarction, hospitalization, Romania

INTRODUCTION

Thrombotic vascular accidents represent a serious public health problem in the world, cardio and cerebrovascular diseases being the first causes of death globally [1]. In 2019, 32% of all deaths worldwide were caused by this type of condition, out of 17.9 million deaths, 85% were based on myocardial or cerebral infarction. Another important fact is that, of the 17 million premature deaths (under the age of 70) in 2019, 38% are due to cardiovascular diseases, many of these deaths being preventable, the diseases responsible can be positively influenced by addressing the risk factors (smoking, alcohol, metabolic diseases, diabetes, obesity, unhealthy diet, sedentary lifestyle). Three-quarters of the deaths occurred in low- and middle-income/capita countries. [1] It is estimated that by the year 2030, 23.6 million people will die from cardiovascular diseases [2]. The trend in deaths has been increasing, from 12.1 million in 1990 to 18.6 million in 2019. [3] The burden of disease is also increasing globally, DALYs and years of life lost (YLL) have doubled, from 17.7 million to 34.4 million. In the case of myocardial infarction, the DALY value has increased constantly since 1990, reaching 182 million in 2019, with 197 million prevalent cases and 9.14 million deaths [3].

Regarding cerebral infarction, DALY also increased steadily since 1990, reaching 143 million in 2019, with 6.55 million deaths and 101 million prevalent cases [3]. The prevalence of cardio and cerebrovascular diseases in the world is increasing (so compared to a value of 271 million in 1990, it reached 523 in 2019 [3]), the responsible risk factors being more frequently encountered. However, in Western countries there is a reduction in the incidence, not due to risk factors reduction, but due to an increase in health systems capacity, through advanced therapeutic and interventional solutions. [2] At the European level, mortality in European Union countries has decreased, while in Eastern European countries it remains high, however cardiovascular diseases remain the main cause of mortality on the continent. Every year in Europe cardiovascular diseases cause 3.9 million deaths and more than 1.8 million in the European Union, accounting for 45% of all deaths in Europe and 37% of deaths in the European Union. [2] The age-standardized prevalence rate decreased in most European countries, especially in the North, West and South East, compared to that in Central and Eastern European countries. The burden of disease as measured by DALYs has decreased in most countries in recent decades, however these conditions account for more than 64 million DALYs in Europe representing 23% of total DALYs and 26 million in the EU (19%), with values higher in Central and Eastern Europe. [4] The financial costs at the level of the European Union are 210 billion euros/year.

In Romania, cardio and cerebrovascular diseases are also the first causes of death, more than a third of the deaths recorded in 2018 were due to these types of conditions, thus over 19% of the deaths were due to myocardial infarction and 16 % by cerebrovascular accident. [5] A reduction in stroke mortality has been observed over time, from an age-standardized mortality rate of 344.4 (95% [CI] 343.4–345.4) in 1994 to a value of 192.1 (95% CI 191.5-192.7) in 2017, with 2.53% /year (95% CI 2.50-2.55, $P < 0.001$). [6] Nevertheless, Romania remains among the countries with high mortality rates on the continent, the mortality being 3-4 times higher compared to other countries in the European Union. [7] In 2016, for example, mortality from coronary heart disease was almost 3 times higher than the average in the European Union, and that from cerebral infarction was 2 times higher. Together, in 2016 the two caused 550 deaths/100,000 inhabitants. [8] According to statistics, in 2019, approximately 109,537 new cases of coronary heart disease and 66,930 cases of cerebral infarction are diagnosed annually, the prevalence being in the case of coronary heart disease 1,080,126 cases, and for cerebral infarction 452,322, while the registered deaths were 69,806 cases by coronary heart disease and 52826 by cerebral infarction. [8] Both direct and indirect economic costs are significant, thus in 2015 direct costs represented 0.32 billion euros for both types of conditions, approximately 4% of health expenditures, and indirect costs were estimated at approximately 1 billion euros. [8]

Although some of these conditions, as well as the deaths attributed to them, can be prevented, the prevalence of the risk factors of both conditions has not undergone significant changes over time, smoking, alcohol

consumption, sedentism, unbalanced diet constituting the regime of life adopted by important percentages of the population, including young people, which exposes them to increased risks of illness. It is found that the two conditions are no longer the prerogative of adulthood or the elderly, but the average age is dropping alarmingly in the last decade. If in developed countries it was possible to achieve results in the sense of reducing mortality due to the development of medical services and advanced treatment techniques, in Romania the chronic underfunding of the health system removes this possibility so that a reduction of negative consequences could only take place through measures effective primary and secondary prevention. Within them is also included a good knowledge of the real epidemiological situation, the hospitalization situation of these cases and the subsequent evolution of the patient. From this point of view, the National School of Public Health, Management and Professional Development in Health Bucharest performs, at different time intervals, the analysis of hospitalizations for various types of conditions, following their evolution over time in order to capture and highlight serious situations. The present study carries out a description of the hospitalized cases for thrombotic accidents such as myocardial infarction and stroke, occurring in the period 2015-2021.

OBJECTIV

Identification at the national, regional and local level of the geographical distribution of hospitalization episodes in the case of patients diagnosed with potentially life-threatening thrombotic conditions, such as myocardial infarction or stroke, as well as the temporal evolution of their number, in the period 2015-2021.

METHODOLOGY

The descriptive, retrospective study including the period 2015-2021, used data from the National DRG Database, data reported in the continuous hospitalization regime by Romanian hospitals in a contractual relationship with the National Health Insurance House. In accordance with the provisions of the Order. no. 1782/576/2006 regarding the registration and statistical reporting of patients receiving medical services under continuous hospitalization and day hospitalization, with subsequent additions and changes, NSPHMPDHB collects and processes the minimum set of data at patient level for cases treated under continuous and day hospitalization.

The study followed the analysis of data on hospitalization episodes in the case of patients with thrombotic vascular accidents, such as myocardial infarction and cerebrovascular accident, in Romania, in the aforementioned hospitals (admissions under continuous hospitalization regime). Data were selected using the ICD-10-AM classification, records were extracted and analyzed from the observation sheets that most frequently had one of the codes as the main diagnosis: I21- Acute myocardial infarction Includes: myocardial infarction specified as acute or of established duration of 4 weeks (28 days) or less from onset, excluding certain current complications after acute myocardial infarction (I23), myocardial infarction – old (I25.2), specified as chronic or of established duration of more than 4 weeks (more than 28 days) from onset (I25.8), postmyocardial infarction syndrome (I24.1); I21.0-Acute transmural myocardial infarction of the anterior wall, Transmural infarction (acute) (al): anterior (wall) NOS, anteroapical, anterolateral, anteroseptal; I21.1- Acute transmural myocardial infarction of the inferior wall, Transmural infarction (acute) (al): diaphragmatic wall, inferior (wall) NOS, inferolateral, inferoposterior; I21.2- Acute transmural myocardial infarction with other locations, Transmural (acute) infarction (al): apical-lateral, basal-lateral, lateral high, lateral (wall) NOS, posterior (true), posterobasal, posterolateral, posteroseptal, septal NOS; I21.3- Acute transmural myocardial infarction with unspecified locations, Transmural myocardial infarction NOS; I21.4-Acute subendocardial myocardial infarction, NOS nontransmural myocardial infarction; I21.9-Acute myocardial infarction, unspecified, Myocardial infarction (acute) NOS. I22-Subsequent myocardial infarction, includes: recurrent myocardial infarction, excludes: specified as chronic or with an established duration of more than 4 weeks (more than 20 days) from onset (I25.8); I22.0-Recurrent myocardial infarction of the anterior wall, Subsequent infarction (acute) (of): anterior (wall) NOS, anteroapical, anterolateral, anteroseptal; I22.1-Subsequent myocardial infarction of the inferior wall, Subsequent infarction (acute) (of): diaphragmatic wall, inferior (wall) NOS, inferolateral, inferoposterior; I22.8-Subsequent myocardial infarction with other specified locations Subsequent myocardial infarction (acute) (al): apical-lateral, basal, lateral, lateral high, lateral (wall) NOS, posterior (true), posterobasal, posterolateral, posteroseptal, septal NOS; I22.9-Subsequent myocardial infarction of unspecified location. For the cerebral infarction category, records with the following codes were used: Cerebral infarction includes: occlusion and stenosis of cerebral and precerebral arteries, resulting in cerebral infarction, excludes: sequelae of cerebral infarction (I69.3); I63.0-Cerebral infarction due to thrombosis of precerebral arteries; I63.1-Cerebral infarction due to embolism of precerebral arteries; I63.2- Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries; I63.3-Cerebral infarction due to thrombosis of cerebral arteries; I63.4-Cerebral infarction due to embolism of cerebral arteries; I63.5-Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries; I63.6 -Cerebral infarction due to thrombosis of cerebral veins, nonpyogenic; I63.8-Other cerebral infarctions; I63.9-Cerebral infarction, unspecified.

In accordance with the provisions of Law 190/2018 and Art. 13 of EU Regulation no. 679/2016, personal data are deleted at the time of transmission to NSPHMPDHB, and the identification of persons for the purpose of analysis is based on the encrypted personal identification code. The age of the patients was calculated in completed years, as the difference between the date of admission and the date of birth. The data was processed using the software program SQL Server Management Studio Express 2005, the subsequent processing and analysis was carried out using the SPSS and Excel programs. The analysis was performed according to a series of demographic and socioeconomic variables, such as age, length of hospitalization, status at discharge, etc., information included in the

minimum data set reported in the DRG system by hospitals. The interpretation and presentation were made in the form of tables and graphs.

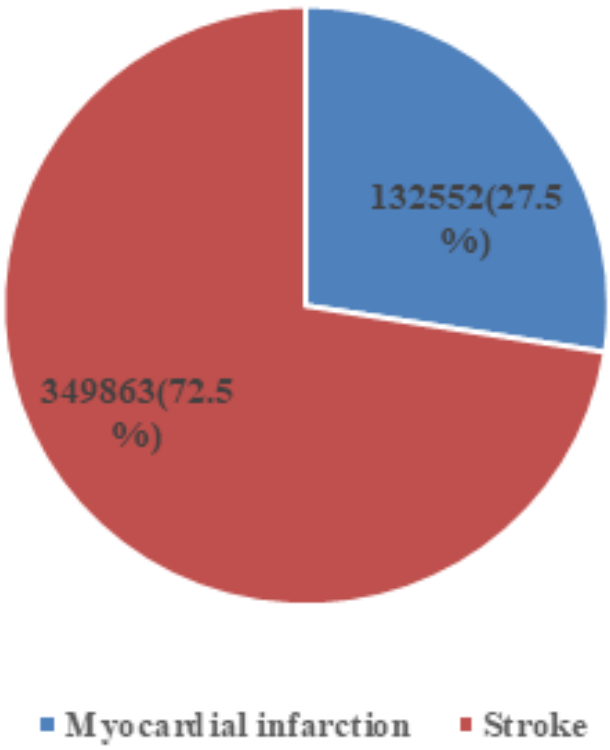
RESULTS

The analysis and interpretation of the data from the national DRG data base was carried out in relation to a series of demographic variables and socioeconomic characteristics (sex, age, residential environment, duration of hospitalization, in-hospital mortality rate, discharge status) following the geographical distribution and temporal evolution of hospitalization episodes for patients with the main diagnosis at discharge, thrombotic vascular accidents, such as myocardial infarction or stroke, from hospitals in our country, in the period 2015-2021.

1. Total number of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, according to the diagnostic code registered in Romania, in the period 2015-2021, at the national level

The total number of continuous hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke registered in Romania, in the period 2015-2022 was 482,415 episodes, of which around a third were represented by myocardial infarction (27.5%), and approx. three-quarters (72.5%) cerebral thrombotic accidents - graph no. 1.

Graph no. 1 Total number of hospitalization episodes reported in continuous hospitalization for patients with thrombotic accidents, such as myocardial infarction or stroke, according to the diagnostic code registered in Ro-



Differentiated, on each type of diagnostic code separately, it is found that: among the category of vascular accidents such as myocardial infarction, acute transmural myocardial infarction of the anterior wall (31%), acute subendocardial (30%) and transmural of the inferior wall (27%). The other codings (unspecified, other locations, subsequent infarction of the lower wall, recurrent of the anterior wall, subsequent with other specified locations, transmural with unspecified locations or subsequent with unspecified location) represented small percentages of the total number of hospitalization episodes recorded in this category - graph no. 2.

The category of cerebrovascular accidents is best represented by cerebral infarction due to cerebral artery thrombosis (69.5%) and cerebral embolism (10%), the rest of the codes (other cerebral infarctions, infarction due to unspecified cerebral artery occlusion or stenosis, cerebral infarction unspecified, due to unspecified occlusion or stenosis of precerebral arteries, due to thrombosis of precerebral arteries, due to embolism of precerebral arteries or due to thrombosis of nonpyogenic cerebral veins) recorded low percentages - graph no. 3.

2. Temporal evolution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, in Romania, in the period 2015-2021

The temporal evolution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke during this period can be seen in graph no. 4. A relatively constant evolution is observed until 2019, then a reduction of approximately 20% in the number of hospitalization episodes in the last 2 years, respectively 2020 and 2021, possibly related to the situation of hospitals in the conditions of the coronavirus pandemic. The same thing is observed by category of conditions, a relatively constant situation with minor fluctuations in the number of hospitalizations until 2019, then a decrease between 15-20% is observed (the 20% reduction was observed in 2020) in the case of myocardial infarction and 13 -19% for strokes (the largest decrease also in 2020).

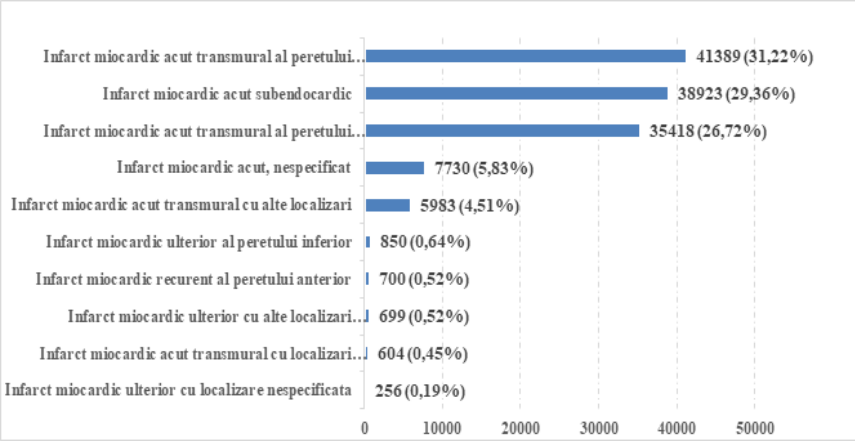
3. Distribution of hospitalization episodes of patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the discharge department

Most episodes of hospitalization for patients with thrombotic accidents, such as myocardial infarction or stroke, were recorded in the departments of neurology, cardiology and internal medicine (95% of the total).

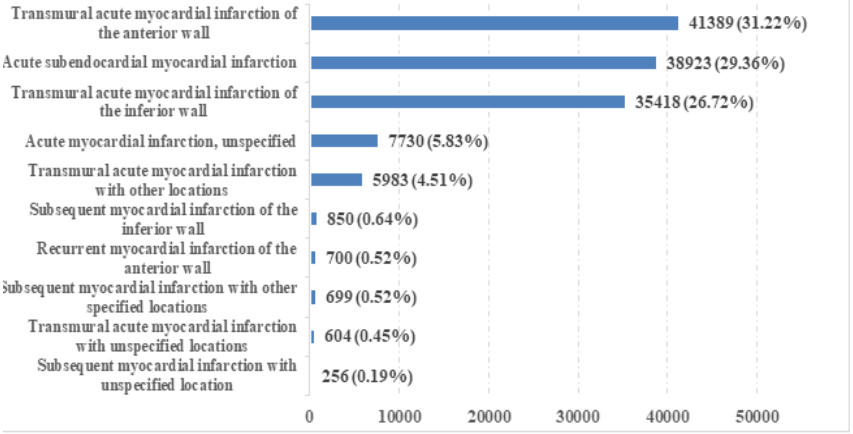
4. Distribution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, at regional and local level, in the period 2015-2021

From the point of view of the residential area where the patients with these diagnostic codes come from, the most episodes of hospitalization were registered in the case of patients from the urban areas (53%) - graph no. 5.

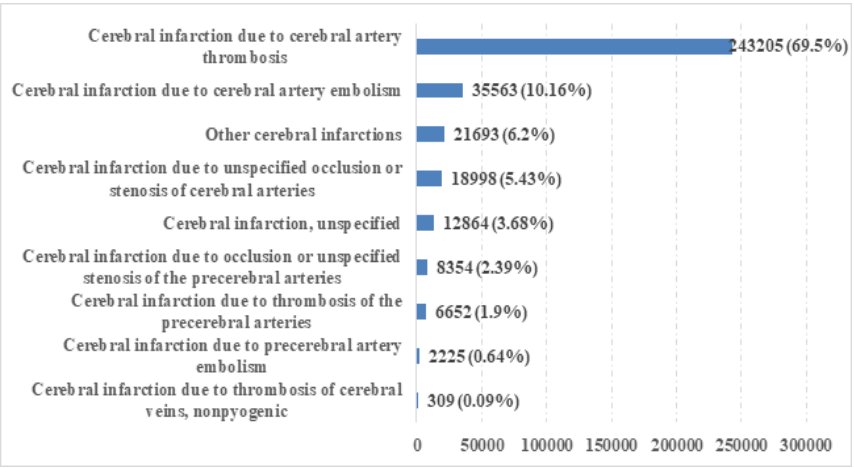
Graph no. 2. The total number of hospitalization episodes reported as continuous hospitalization in patients with myocardial infarction, according to the registered diagnosis code, in the period 2015-2021, at the national level



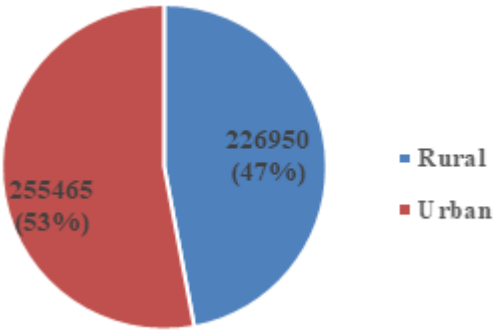
Graph no. 3. The total number of hospitalization episodes reported as continuous hospitalization for patients with stroke, according to the registered diagnosis code, in the period 2015-2021, at the national level



Graph no. 4. Evolution of the total number of episodes reported in continuous hospitalization, in patients with thrombotic accidents, such as myocardial infarction or stroke, recorded in the period 2015-2021, at national level



Graph no. 5. Distribution of hospitalization episodes in the case of patients with thrombotic accidents, such as myocardial infarction or stroke, according to the patient's place of residence, in Romania, 2015-2021



In the category of myocardial infarction, hospitalizations in the case of patients from the urban areas was 1.5 times more frequent than for patients from the rural areas, while for the stroke category the number of hospitalizations was similar for patients from both areas of residence.

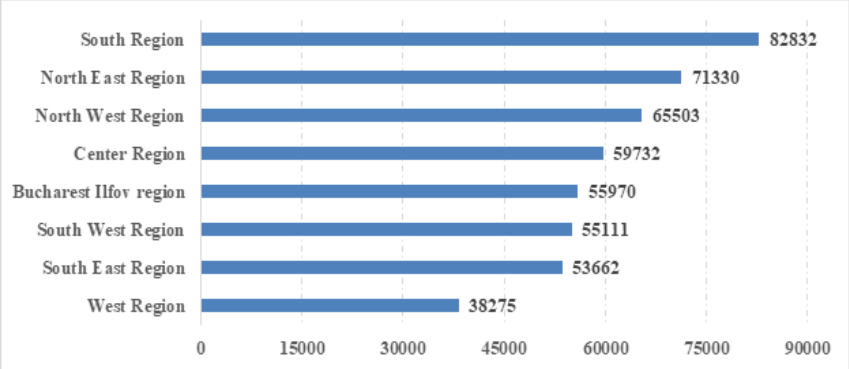
At the regional level, the most episodes of hospitalization for patients with thrombotic accidents, such as myocardial infarction or stroke, were recorded during the study period in the South (17%), North East (15% of the national total) and North West region (14%), and the West and South East regions with approximately 8% and 11% had the fewest hospitalizations- graph no. 6.

By number of inhabitants, the descending order of the regions that recorded hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke was: South region (258.69 episodes/10000 inhabitants), South West (254.10 episodes/10,000 inhabitants), North West (231.28 episodes/10,000 inhabitants), Center region (227.13 episodes/10,000 inhabitants), Bucharest Ilfov (218.75 episodes/10,000 inhabitants), West region (191.04 episodes/ 10,000 inhabitants), South East (189.29 episodes/10,000 inhabitants) and North East (179.76 episodes/10,000 inhabitants) - graph no. 7.

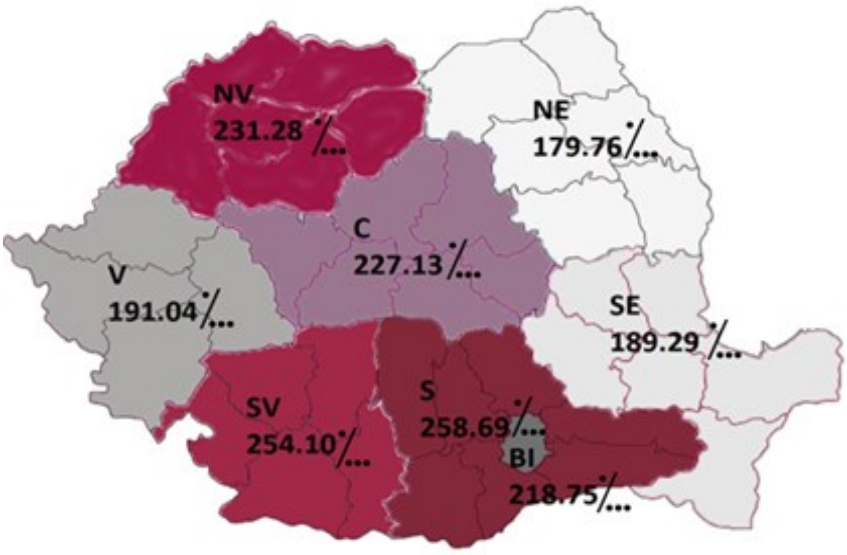
At the local level, the most episodes of hospitalization were registered between 2015-2021 in the municipality of Bucharest (9.6% of the total), which has approximately 2.4 times more episodes than the next leading counties Prahova, Bacău and Mureș – graph no. 8. at the opposite pole are counties such as Vrancea, Tulcea, Caraș Severin, with less than 1% of the national total.

By population of each county, it can be seen from graph no. 9 that the first two leading

Graph no. 6. Distribution of hospitalization episodes in the case of patients with thrombotic accidents, such as myocardial infarction or stroke, at the regional level in Romania, in the period 2015-2021



Graph no. 7. Distribution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the population, per 10,000 inhabitants, at regional level, in Romania, 2015-2021



places are counties such as Buzău (991.8 episodes/10,000 inhabitants) and Covasna (692.4 episodes/10,000 inhabitants), followed by Mehedinți (482.4 episodes/10,000 inhabitants), while Bucharest city (41.6 episodes/10,000 inhabitants) Iași and Cluj counties are on the last places.

5. Distribution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the patient's gender

Of the total number of hospitalization episodes with these main diagnoses recorded during the study period, most belonged to men, approximately 54% - graph no. 10.

As an evolution over time, there is a decrease in the number of hospitalization episodes throughout the study period, for women, a more important decrease (more than a third compared to the initial year) in the last 2 years. A slow decrease in hospitalizations with this diagnosis can be noted in men as well, starting in 2018, but the decrease was less in the last 2 years compared to women - graph no. 11.

For myocardial infarction, almost twice as many men (1.85 times more) compared to women were hospitalized, while for stroke the proportions were roughly equal.

6. Distribution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the patient's age

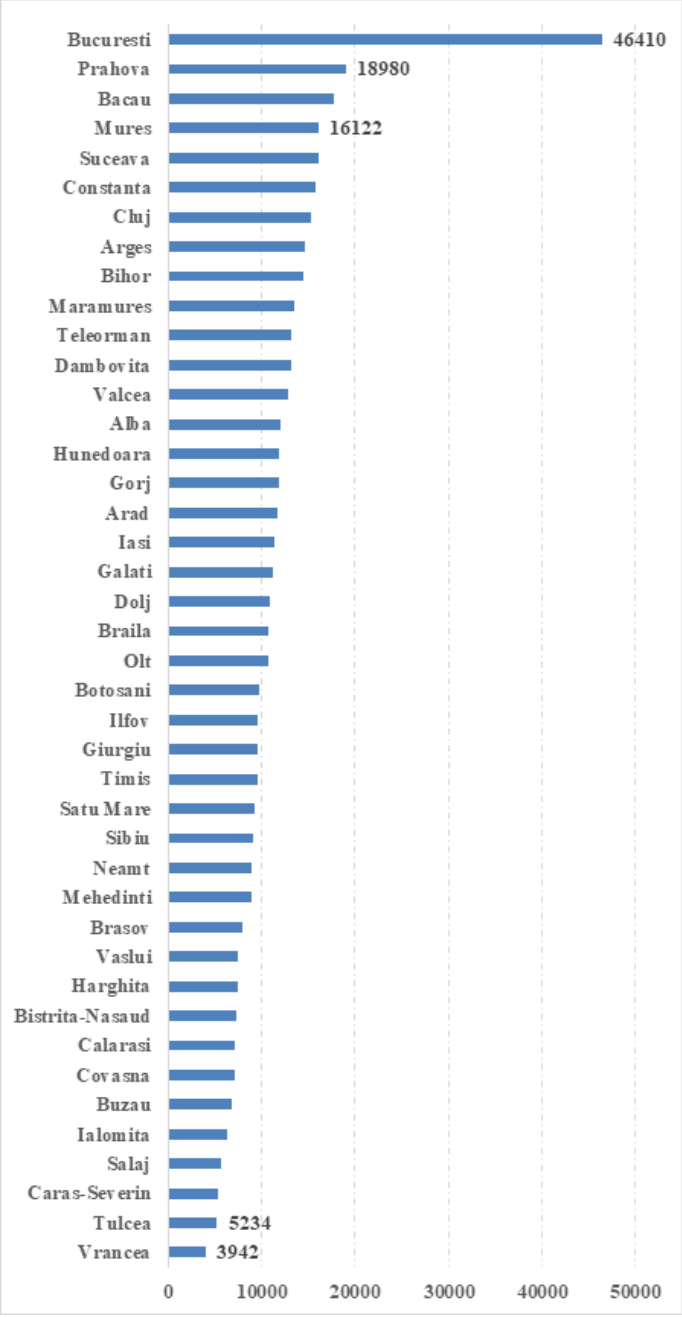
The analysis of the data according to age shows that most episodes of hospitalization were recorded in the elderly, over 60 years old (80% of the total), the next category being that of adults, 31-60 years old (20%) - graph no. 12. The average age of hospitalized patients with this diagnosis was 70 years, higher in rural than urban areas (71 years versus 69 years). Depending on the two categories of conditions, the average age was lower for myocardial infarction patients (66.3 years) compared to 69.6 years for stroke. In men, the average age was lower than that of women for both types of conditions. Thus, in the case of myocardial infarction, men hospitalized with this condition had an average age of 63.7 years, compared to women where the average age was 71 years, while strokes had an average age of 68.3 years for men, and 70.8 years for women.

The evolutionary trend of the number of hospitalizations for all age groups was a slightly decreasing one, in the case of the elderly, a steeper decrease was observed in the last two years of the period (1.5 times fewer hospitalizations compared to the initial year). - graph no. 13.

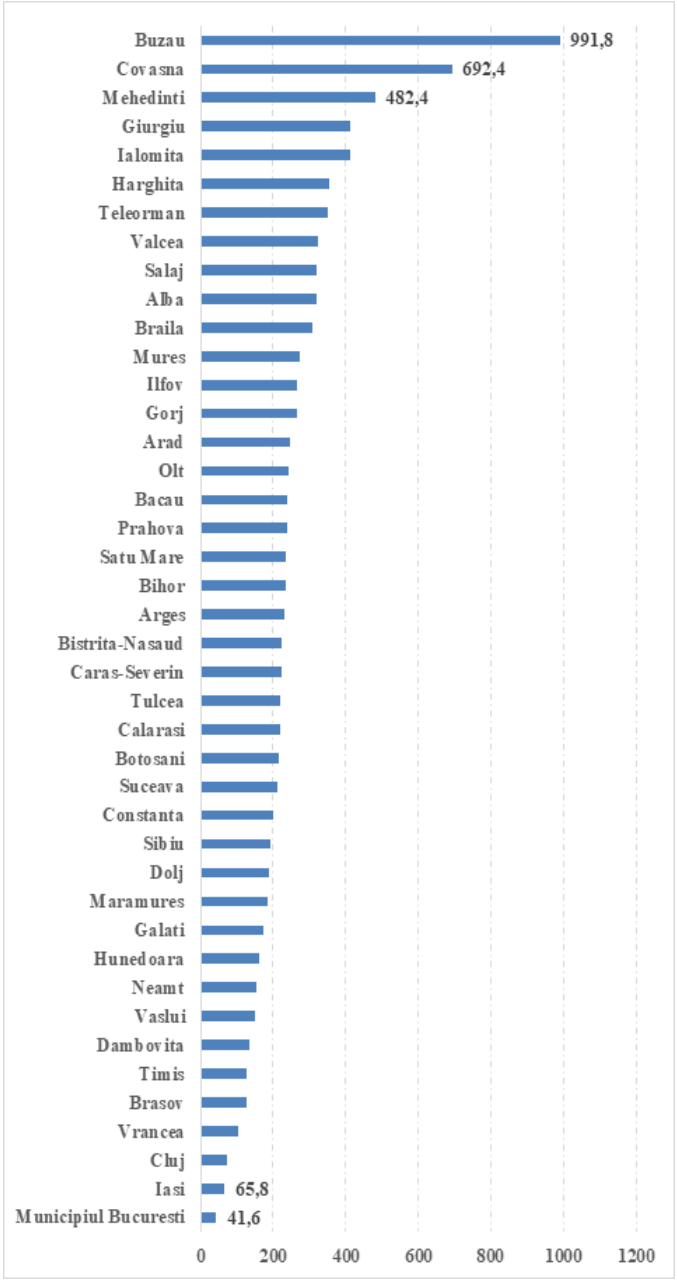
7. Distribution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, according to the average duration of hospitalization

The average duration of hospitalization for patients with thrombotic accidents, such as myocardial infarction or stroke in continuous hospitalization was 8.37 days in the period 2015-2021, varying extremely little over the period of study, the highest value, above the average of the period, was observed in 2015 (8.44 days) and the lowest value of 8.28 days in 2018. A difference can be found between the two types of pathologies, thus in the case of hospitalization of patients with myocardial infarction, the average length of stay was 5.99 days, while in the case of stroke the average length of hospitalization was 9.69 days. The highest average values of the duration of hospitalization were recorded in the case of patients hospitalized with Acute Myocardial Infarction, unspecified - 7.71 days and Cerebral Infarction, unspecified - 12.14 days. Wom-

Graph no. 8. Distribution of hospitalization episodes in the case of patients with thrombotic accidents, such as myocardial infarction or stroke, at the local/county level, in Romania, in the period 2015-2021



Graph no. 9. Distribution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, at local/county level, depending on the population of each county, in the period 2015-2021



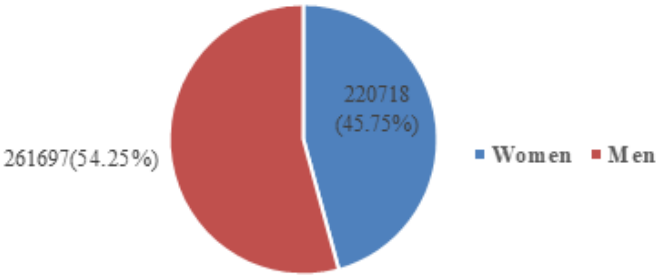
stay, 8.77 days, compared to 8.03 days for men, this being true for both types of pathologies, and the average length of hospital stay was higher in elderly patients.

8. Distribution of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, according to the patient's condition at discharge and the in-hospital mortality rate

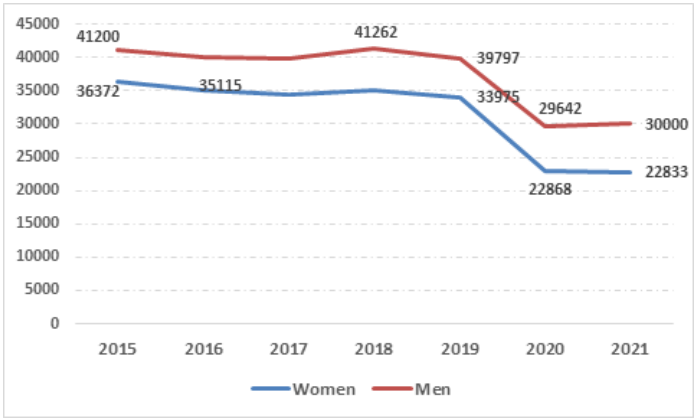
Depending on the patient's discharge condition, it can be observed that from total number of episodes reported in continuous hospitalization for myocardial infarction or stroke patients, the majority of patients were discharged in an improved condition (84% of the total). Approximately 10% of patients died - graph no. 14.

The calculated in-hospital mortality rate was 10.05% over the entire study period, the trend being an increasing one, its values oscillating between 8.58% in 2015 (the lowest value) and 12.96% in 2021. The more deceased patients were registered in the last 2 years of the period, in 2020 (12.79%) and in 2021 (12.96%). By disease category, the proportion of deceased was higher in the case of cerebral infarction, 10.2%, compared to 9.65% in the case of myocardial infarction. Both sexes had similar death rates, with a slight excess in women. The highest share of mortality was registered by patients hospitalized for cerebral

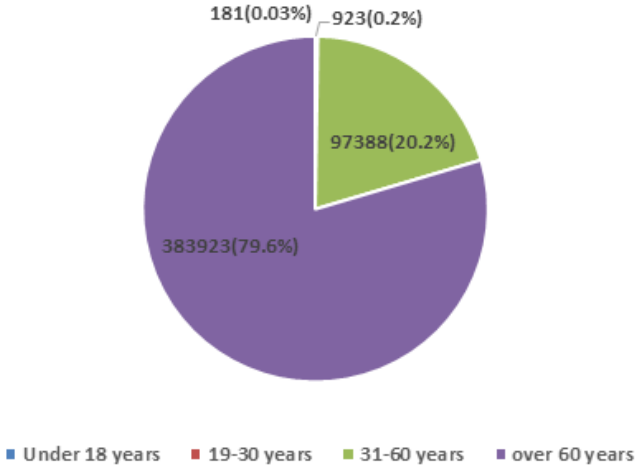
Graph no. 10. Total number of episodes reported in continuous hospitalization, in patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the patient's gender, in the period 2015-2021



Graph no. 11. Evolution of the number of episodes reported in continuous hospitalization, in patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the patient's gender, in the period 2015-2021, at national level

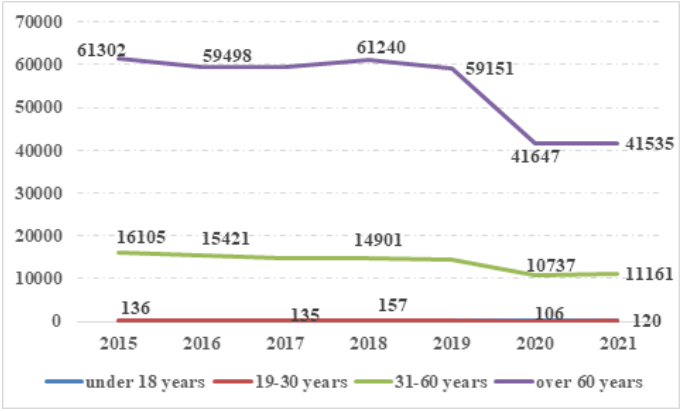


Graph no. 12. Number of reported episodes of continuous hospitalization, in patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the age of the patient, in the period 2015-2021, at national level

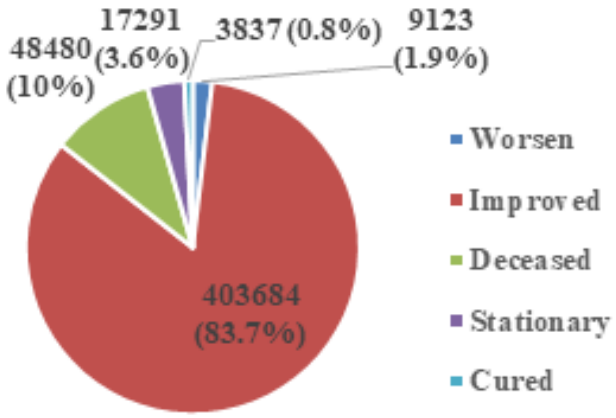


infarction, almost 3 times more compared to myocardial infarction (26.3% versus 73.6%). In the case of myocardial infarction, the highest in-hospital mortality rate was rec-

Graph no. 13. Evolution of the number of episodes reported in continuous hospitalization, in patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the patient's age, in the period 2015 -2021, at national level



Graph no. 14. Number of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke, depending on the discharge status of the patients, in Romania, in the period 2015-2021



orded by acute transmural myocardial infarction of the anterior wall (approx. 40% of total deaths due to myocardial infarction), but also acute transmural myocardial infarction of the lower wall (23%), while in the category of cerebral infarction, the most deaths were observed by Cerebral infarction due to cerebral artery thrombosis (69% of cerebral infarction deaths) and Cerebral infarction due to cerebral artery embolism (17%).

CONCLUSIONS

The analysis and interpretation of the data regarding the continuous hospitalization of patients with thrombotic accidents, such as myocardial infarction or stroke, in the period 2015-2021 lead to the following conclusions:

- The total number of hospitalization episodes for patients with thrombotic accidents, such as myocardial infarction or stroke registered in Romania, in the period 2015-2022 was 482,415 episodes

- there were almost 3 times more hospitalizations for cerebral vascular accidents (predominant cerebral infarction due to thrombosis of cerebral arteries with almost three quarters of the cases) than for myocardial infarction, three locations being observed most frequently, each accounting for approximately one third of the cases, acute transmural myocardial infarction of the anterior wall, acute subendocardial and transmural myocardial infarction of the inferior wall,
- from the point of view of cases evolution, this was relatively constant until 2019, in the next 2 years a reduction between 15-20% in the case of myocardial infarction and 13-19% in the case of cerebral infarction was observed, the greater decrease occurring in 2020 due to coronavirus pandemic which limited access to hospitals for other pathologies
- The predominant residential area for patients with thrombotic vascular accidents hospitalized during this period was urban areas, the difference between the two environments of residence being greater in the case of myocardial infarction, 1.5 times more patients from cities compared to those from the rural,
- at the regional level, the most patients were registered in absolute numbers in the South, North East and North West regions, compared to the West and South East regions, with the fewest. By the number of inhabitants, the descending order is South, South West, North West, the last places being South East and North East,
- at the local level, in absolute numbers, the largest number of cases was registered in Bucharest, almost a tenth of the total, followed by the counties of Prahova, Bacău and Mureș, and the counties of Vrancea, Tulcea, Caraș Severin on the last places. By number of inhabitants, the leading counties were Buzău and Covasna, and the last places occupied by Bucharest, Iași and Cluj.
- Relating to the sex of the patient, more men were hospitalized, and the evolution of hospitalizations throughout the study period showed a decline in hospitalizations, more pronounced in women (by one third compared to the initial year) compared to men. By categories of thrombotic accidents, in the case of myocardial infarction men were affected in almost double the number of women, while for cerebrovascular accidents, the proportions were similar,
- more than three quarters of hospitalized vascular accidents during this period were registered in people over 60 years old, and approximately one fifth in adults (30 -60 years old), the average age being lower for urban patients (69 years versus 71 years), men having a lower mean age (63.7 years versus 71 years, for myocardial infarction, while strokes had a mean age for men of 68.3 years, versus of 70.8 years for women). In the case of myocardial infarction the average age of the patients was 66.3 years compared to 69.6 years in cases of stroke. The evolutionary trend of the number of hospitalizations for all age groups was a slightly decreasing one, for the elderly a steeper decrease in the last two years of the period (1.5 times fewer hospitalizations compared to the initial year).
- Depending on the patient's discharge condition, most patients were discharged in an improved condition (84% of the total), and approximately 10% of the patients died. The calculated in-hospital mortality rate over the entire study period was 10.05%, the trend being an increasing one, from 8.58% in 2015 to 12.96% in 2021. Most deceased patients were registered in the last 2 years of the period, (12.79% and 12.96%, respectively). The share of deceased was higher in the case of cerebral infarction - 10.2% and 9.65% in the case of myocardial infarction, both sexes having similar death shares, with a slight excess in women. Patients hospitalized for cerebral infarction died almost 3 times more frequently compared to those with myocardial infarction. The highest in-hospital mortality rate was recorded by acute transmural myocardial infarction of the anterior wall (approx. 40% of total myocardial infarction deaths), while in the cerebral infarction category, most deaths were observed through cerebral infarction due to cerebral artery thrombosis (69% of deaths due to cerebral infarction).

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