



# MORBIDITY THROUGH ACUTE STROKE IN ADULT POPULATION OF THE REPUBLIC OF MOLDOVA AND REPUBLIC OF INDIA

Gheorghe Ciobanu , Nasarulla Nasarudeen  
State University of Medicine and Pharmacy “Nicolae Testemiteanu”, Department of Emergency Medicine Chisinau, Republic of Moldova.



## BACKGROUND

According to the WHO annually more than 15 million people worldwide suffers from stroke, 5.5 million die and 5 million are left with permanent disability. Generally, ischemic strokes account for about 80% of stroke cases while hemorrhagic stroke accounts for 20% but the actual proportions of stroke types depend on the population. Approximately 1.1 million inhabitants of Europe suffered a stroke each year, because of the ageing population, the absolute number of stroke is expected to increase by 2025 to 1.5 million people . According to the latest WHO data published in 2017 Stroke Deaths in Republic of Moldova reached 6638 cases or 15.87% of total deaths. The age adjusted Death Rate is 121.53 per 100,000 of population and ranks Moldova 39 in the world. Republic of India has been experiencing significant demographic and epidemiological transition during the past two decades. The cumulative incidence of stroke ranged from 105 to 152/100,000 persons per year, and the crude prevalence of stroke ranged from 44.29 to 559/100,000 persons in different parts of the country during the past decade. The high burden of stroke suggests that primary prevention strategies in the Republic of Moldova and Republic of India are either not widely implemented or not sufficiently effective; in addition to targeting behavioral risk factors, effective screening for conditions that increase stroke risk, such as hypertension, atrial fibrillation, and diabetes mellitus, is essential.

## THE AIM OF THE STUDY

To estimate the prevalence of risk factors for ischemic stroke and evaluation of barriers in ensuring access of patients to modern treatment strategies in the adult population of the Republic of Moldova and of the Republic of India.

## MATERIALS AND METHODS

A retrospective hospital-based study was conducted at the clinical base of the Department of Emergency Medicine, USMF "Nicolae Testemitanu" (IMSP Institute of Emergency Medicine) and a tertiary care Hospital of Assam, Assam Medical College, Republic of India. All medical records with a diagnosis of stroke were identified based on the ICD, R10, from January 01,2019 to December 31,2019. Two groups of patients was used for research, lot 1(80 patients) treated in IMSP Institute of Emergency Medicine (Chisinau, RM) and lot 2 (80 patients) treated in tertiary Hospital of Assam, Assam Medical College, Dibrugarh, India. The statistical processing of the results was performed using programs SPSS 22.0(SPSS inc). The study group I included 44 (55.0%) males and 36 (45.0%) females. 66 patients (83.0%) had ischemic stroke and 14 patients (17.0%) had hemorrhagic stroke. The mean age was 56.4 ± 14.38 years in ischemic stroke group and 53.24 ± 12.45 years in hemorrhagic stroke group. In ischemic stroke patients, 35 (53.0%) were males and 31 (47.0%) were females. The study group II included 49 (61.6%) males and 31 (38.4%) females. 25 patients (31.0%) had ischemic stroke and 55 patients (69.0%) had hemorrhagic stroke. The mean age was 53.02 ± 14.38 years in ischemic stroke group and 52.84 ± 12.45 years in hemorrhagic stroke group. In ischemic stroke patients, 15(60.0%) were males and 10 (40.0%) were females. Age distribution of patients in group I showed that 67.0 % of stroke patients were in the age group 61-80 years, 17.0 % patients were in the age group 20- 60 years, and 18.0% of patients were having age more than 80 years. Age distribution of patients with ischemic stroke in group II showed that about 55% of stroke patients were in the age group 30-60 years, 32.4% patients were of age 60-70 years, and 13% of patients were having age more than 70 years.

FIG . 1 THE PREVALENCE OF STROKE RISK FACTORS AND THEIR DISTRIBUTION BASED ON STROKE SUBTYPES IN POPULATION OF THE REPUBLIC OF MOLDOVA

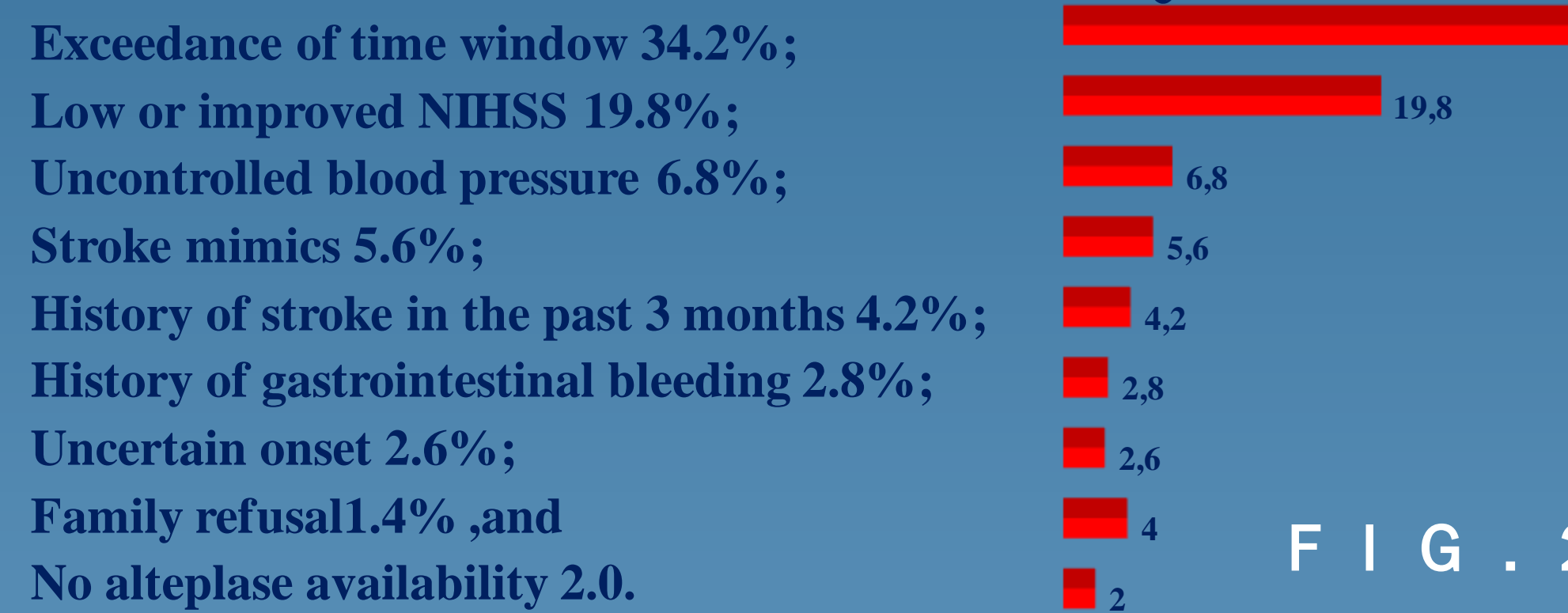
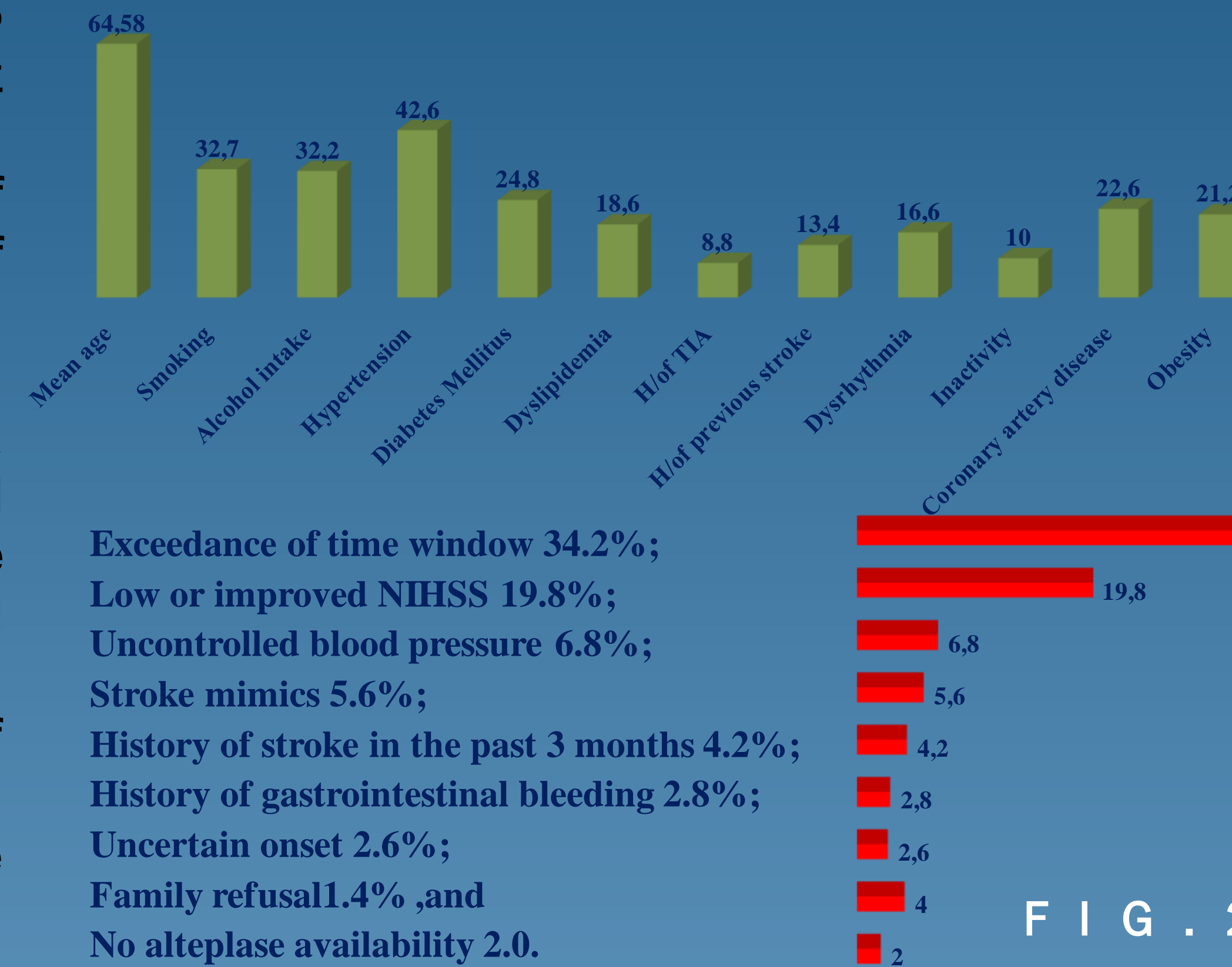


FIG . 2 THE FOLLOWING MOST COMMON REASON WHO DID NOT RECEIVE THROMBOLYTIC THERAPY IN RM

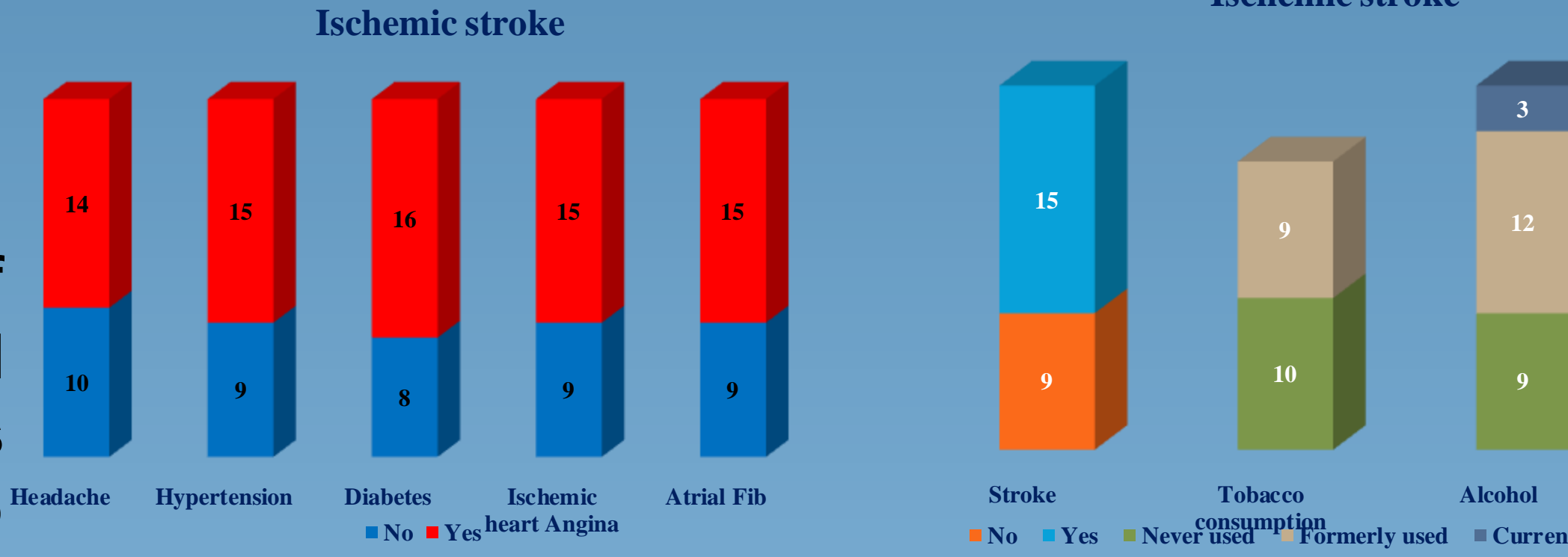


FIG . 3 THE PREVALENCE OF STROKE RISK FACTORS AND THEIR DISTRIBUTION BASED ON STROKE SUBTYPES IN ADULT POPULATION OF THE DIBRUGARH DISTRICT OF ASSAM , REPUBLIC OF INDIA

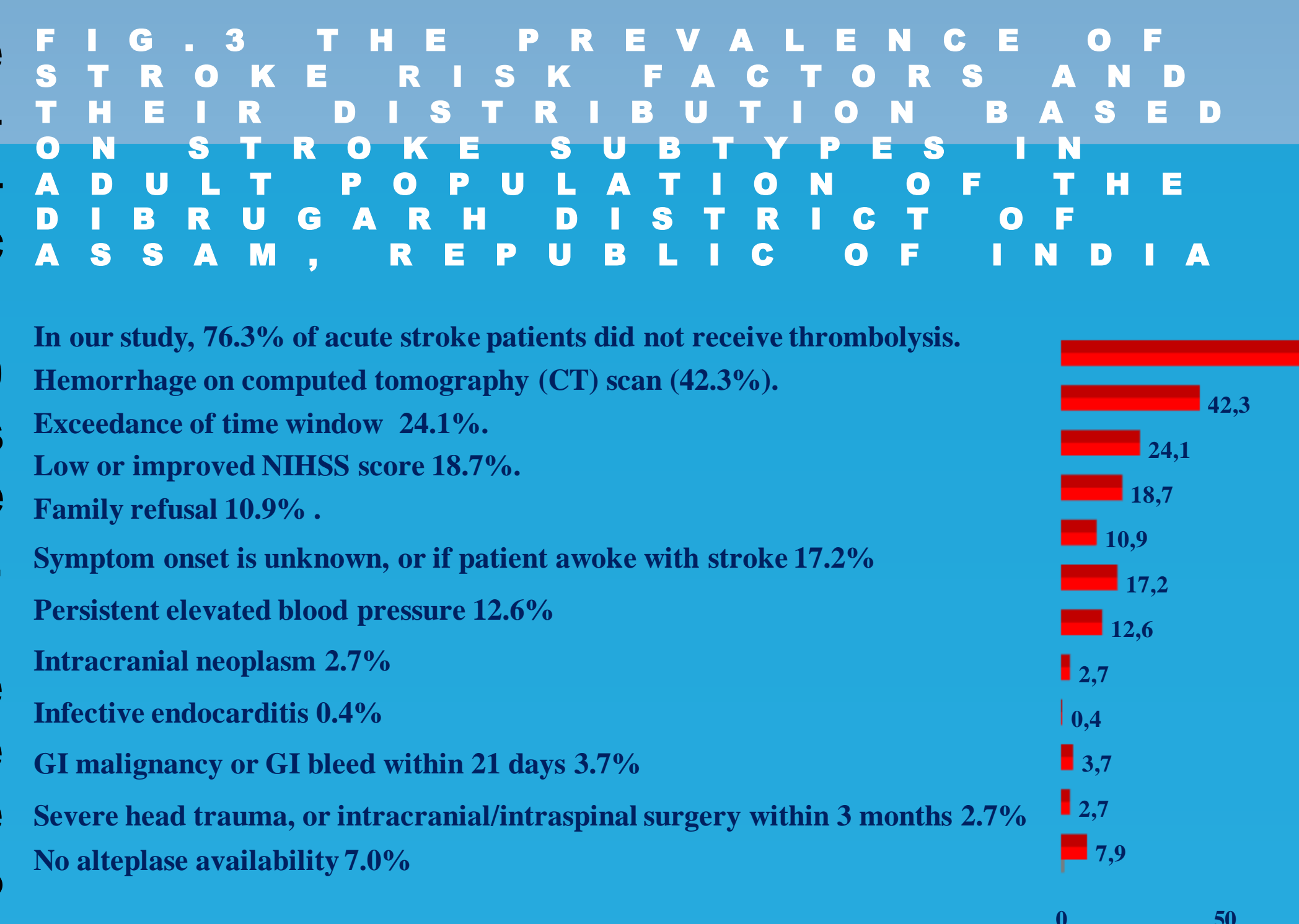


FIG 4 THE FOLLOWING MOST COMMON REASON WHO DID NOT RECEIVE THROMBOLYTIC THERAPY IN REPUBLIC OF INDIA

## RESULTS

Analysis of stroke risk factors in population of the Republic of Moldova showed that the incidence of different risk factors in ischemic stroke were as follows: 42.6% hypertension, 32.7% smoking, 32.2% alcohol intake, 24.8% diabetes mellitus, 22.6% coronary artery disease, 18.6% dyslipidemia, 16.6 % dysrhythmia, 13.4% previous stroke, 10% inactivity, 8.8% transient ischemic stroke in the past. In our study, most common clinical presentation in group II of patients with ischemic stroke was history of TIA in 64.1% cases,disphagia 63.9%,speech problems 61.9%, ocular/visual symptoms 63.8%, weakness in fase/limbs 56% and change in consciousness in 50% of cases. Risk factor assessment among ischemic stroke patients found that history of stroke was presented in 63.9% of cases, tabacco consumption in 36.4%, alcohol consumption in 66.0% cases, 66.3% patients were diabetic, 63.9% patients had atrial fibrillation,63.5% patients had ischemic heart angina and 61.3% patients were hypertensive. The most common reason among ischemic stroke patients who did not receive thrombolytic therapy in RM were: exceedance of time window 34.2%, low or improved NIHSS 19.8%, uncontrolled blood pressure 6.8%, stroke mimics 5.6% and history of stroke in the past 3 months 4.2%, history of gastrointestinal bleeding 2.8%, uncertain onset 2.6%, family refusal1.4% and no alteplase availability 2.0. In the Republic of Moldova only 20,6% of ischemic stroke patients currently receive thrombolytic. The following most common reason among stroke patients who did not receive thrombolytic therapy in Republic of India were: hemorrhage on computed tomography (CT) scan (42.3%),exceedance of time window 34.1%, low or improved NIHSS score 18.7%,family refusal 10.9%, symptom onset is unknown, or if patient awoke with stroke 17.2%,persistent elevated blood pressure 12.6%, intracranial neoplasm 2.7%,infective endocarditis 0.4%, GI malignancy or GI bleed within 21 days 3.7%, severe head trauma, or intracranial/intraspinal surgery within 3 months 2.7% and no alteplase availability 7.0%. In our study group II 16.3% of acute ischemic stroke patients receive thrombolysis.

## Conclusion

In Republic of Moldova stroke is predominantly a problem of advancing age, the most affected categories of age are 61-70 years (23,0%), 71-80 years (33,0%) and patients over 80 years were 17,0%, patients over 70 years were 50,0%. In the ischemic stroke motor weakness was seen in 92.0%, speech involvement (38.0%), headache (33.0%), and altered sensorium (20%). Analysis of the incidence of different risk factors in ischemic stroke were as follows: 42.6% hypertension, 32.7% smoking, 32.2% alcohol intake, 24.8% diabetes mellitus, 22.6% coronary artery disease, 18.6% dyslipidemia, 16.6 % dysrhythmia, 13.4% previous stroke . In Republic of India age of onset of Stroke is highest in 40–49 years, which is the most productive period of life. Analysis of the incidence of different risk factors in ischemic stroke were as follows: 66.3% patients were diabetic, 63.9% patients had atrial fibrillation,63.5% patients had ischemic heart angina ,61.3% patients were hypertensive and 59.1% had headache, history of stroke was presented in 63.9% of cases, tabacco consumption in 36.4% and alcohol consumption in 66.0% cases. The most common reason among stroke patients who did not receive thrombolytic therapy in Republic of India were: hemorrhage on computed tomography (CT) scan ;exceedance of time window ;low or improved NIHSS score ; family refusal ;symptom onset is unknown, or if patient awoke with stroke; persistent elevated blood pressure ; and no alteplase availability.