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A Novel Collaboration of Specialists towards Proactive Stroke Health Equity and Literacy during COVID 19 Pandemic in Rural South Eastern Greece

Bakides Sofoclis

Head of the Department of Internal Medicine at Molaoi General Hospital Greece

ABSTRACT

Cardiovascular diseases (CVDs) are the leading cause of death globally, taking an estimated 17.9 million lives each year. More than four out of five CVD deaths are due to heart attacks and strokes, and one third of these deaths occur prematurely in people under 70 years of age.

The most important behavioral risk factors are unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol. The effects of these factors may show up in individuals as raised blood pressure, blood glucose, lipids, overweight and obesity. These "intermediate risks factors" can be measured in primary care facilities and indicate an increased risk for CVDs.

Cessation of tobacco use, reduction of salt in the diet, eating more fruit and vegetables, regular physical activity and avoiding harmful use of alcohol have been shown to reduce the risk of cardiovascular disease. Health policies that create conducive environments for making healthy choices available, are essential for motivating people to adopt and sustain healthy behaviors.

Identifying those at highest risk for CVDs and ensuring they receive appropriate treatment can prevent premature deaths. Access to noncommunicable disease medicines and basic health technologies in all health care facilities is essential to ensure that those in need receive treatment and counselling.

*Corresponding author

Bakides Sofoclis, Head of the Department of Internal Medicine at Molaoi General Hospital, Greek NHS, PC 23052. Greece Tel: 00306976760602, 00302732360186.

Introduction

It is important to know the risk factors of stroke in order to prevent it as early as possible. WHO estimated stroke as the second cause of death in Greece. The incidence is approx. 140 /100,000 per year (in EU is 534/100,000).

Hypertension, smoking, diabetes, obesity, hyperlipidemia, and lack of physical activity are the most frequent modifiable stroke risk factors identified. The most frequent irreversible risk factors identified are age, gender, and level of education.

Purpose and Methods

This cross-sectional study included 235 outpatients from our Greek NHS Hospital, aged 60 and over with prior stroke. In cooperation with private practice Internists, Neurologists and public Cardiologists, Internists and Diabetologists, we examined modifiable and irreversible stroke risk factors in patients' history.

Our objective was to inform patients about the risk of recurrent stroke, educate them on the importance of regular follow up and risk factor management. We advised on healthy lifestyle, diet, physical activity and also on prompt stroke symptom recognition.

Results

Subjects diagnosed with stroke were prescribed treatment and

follow-up were scheduled despite the setbacks from COVID 19 pandemic in our remote responsibility area of 21.840 persons. Totally, 235 consecutive patients were examined during the last 3 years. Mean age was 77,8 years, mean incidence of stroke was 110/100,000 per year.

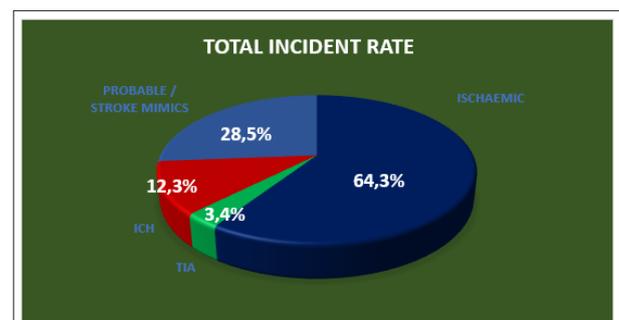| TOTAL INCIDENT RATE	255	
ISCHAEMIC	64,3%	151
TIA	3,4%	8
ICH	12,3%	29
PROBABLE / STROKE MIMICS	28,5%	67

Figure 1

The most frequent modifiable stroke risk factors were : Hypertension (37,04%), Diabetes (12,79%), Atrial fibrillation (10,77%),Coronary stenosis (10,77%), Coronary Disease (10,77%), Hyperlipidemia (8,08%),Smoking (7,07%),Cardiac Failure (6,06%),Carotid stenosis (5,39 %),Alcoholism (2,02%).

MOD RISK FACTORS (ALL INCIDENTS)	235		
SMOKING	7,07	21	136
CAROTID STENOSIS	5,39	16	8
HYPERTENSION	37,04	110	24
DIABETES	12,79	38	
ATRIAL FIB.	10,77	32	67
HYPERLIPIDEMIA	8,08	24	
ALCOHOLISM	2,02	6	
CORONARY DIS.	10,77	32	
CARDIAC FAILURE	6,06	18	
		297	
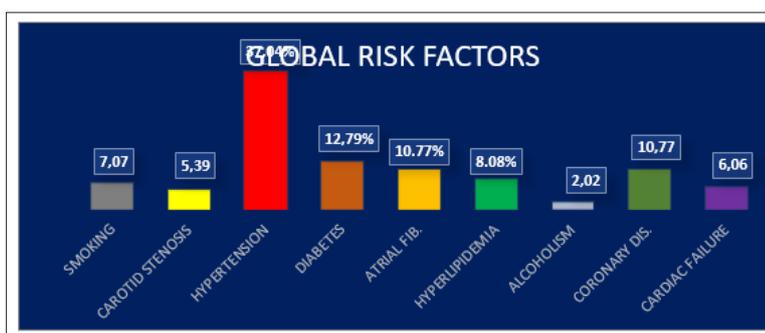
Figure 2

MOD RISK FACTORS ISCHEMIC STROKE				
HYPERTENSION	34%	3,00	20	136
DIABETES	11%		15	8
ATRIAL FIB.	10%		102	24
HYPERLIPIDEMIA	10%		34	
CORONARY DIS.	10%		31	67
SMOKING	7%		31	
CAROTID STENOSIS	5%		8	
CARDIAC FAILURE	5%		29	
ALCOHOLISM	3%		14	
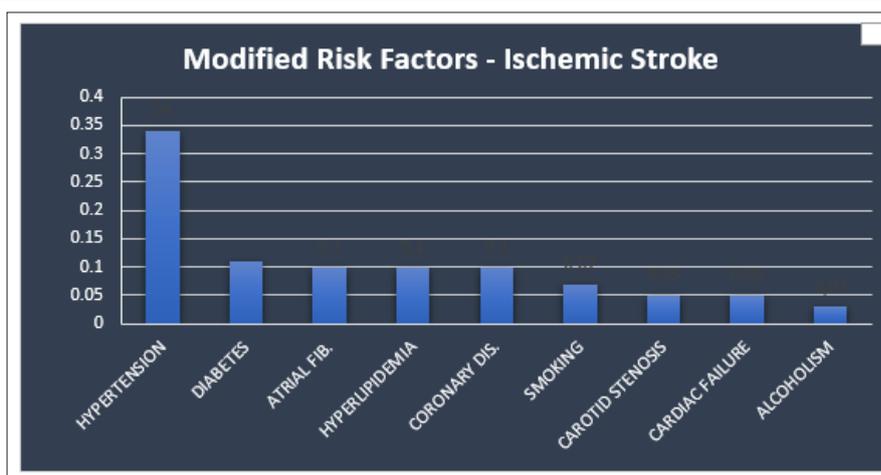
Figure 3

Discussion

Mod Factors Ich	Risk
Hypertension	52%
Smoking	17%
Diabetes	21%
Atrial fib.	14%
Hyperlipidemia	3%
Alcoholism	3%
Coronary dis.	7%
Cardiac Failure	7%
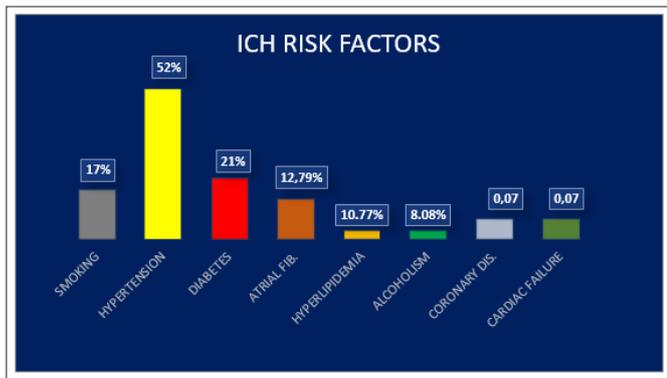
Figure 4

Figure 5

Figure 6

Author	Year	Country	Age mean	HTN (%)	AF (%)	DM (%)	DL (%)	CAD (%)	CS (%)	AA (%)
Grau A. (15)	2001	Germany	65.9	66.6	26.1	28.5	35.3	24.0	27.8	10.3
Béjot Y. (16)	2008	France	74.2	62.1	N/A	17.2	45.5	N/A	23.8	N/A
Vega T. (17)	2009	Spain	61.2	58.2	N/A	26.0	29.8	29.8	14.4	10.9
Malmivaara A. (18)	2015	Finland	72.6	70.9	9.1	20.0	N/A	13.3	N/A	N/A
		Hungary	69.5	76.5	4.5	21.7	N/A	6.9	N/A	N/A
		Italy	73.8	65.4	3.7	23.2	N/A	3.6	N/A	N/A
		The Netherlands	71.6	77.2	2.7	19.6	N/A	N/A	N/A	N/A
		Sweden	76.2	70.3	9.0	16.8	N/A	N/A	N/A	N/A
Correia M. (19)	2016	Portugal	75.4	72.8	18.5	24.9	45.2	N/A	19.3	N/A
Tsivgoulis G. (20)	2017	Greece	75.0	81.1	34.3	26.3	67.0	16.9	22.5	17.3
Köseoğlu Toksoy C. (21)	2018	Turkey	63.3	85.5	N/A	33.7	48.2	N/A	26.5	N/A
Rostohar-Bijelić B. (22)	2019	Croatia	71.6	81.6	19.5	24.1	66.9	N/A	15.5	11.5
Clery A. (23)	2019	England	75.3	66.1	13.8	22.3	N/A	N/A	28.8	54.4

Europe and, especially, Greece since 2010, faces multiple, overlapping, escalating crises, and armed conflicts, fueled by social, political, ecological, and economic pressures. These crises are causing preventable health inequalities to rise between and within European countries. There is still a difference of 9 years in life expectancy between countries in the EU and the gap in healthy life expectancy is up to 18 years. Inequalities lead to social unrest and lack of trust in institutions. Reducing inequalities should therefore be a key priority for the EU. EuroHealthNet launches its priorities for the European Union (EU) to improve health equity and wellbeing in Europe by 2030 through action on the determinants of health – underlying conditions in which people are born, grow up, live, learn and work, and age. **Greece has the largest gap in unmet health needs between high and low income in the OECD**. 18.1% of low-wage earners reported unmet healthcare needs, compared to 0.9% of high-wage earners. Private health payments in Greece are the highest in the EU (35.2%), increasing the risk of catastrophic spending, especially for the poorest.

Conclusions

This year's conference shines a light on the issue of health equity and is titled "The contribution of Health Promoting Hospitals and Health Services to health equity". There are no studies addressing the link between Health Literacy and health outcomes in hypertension or other risk factors of stroke that were conducted in Southern Europe till today [1-15].

This study provides evidence for the need of future studies, the delivery of structured education and multi-level interventions across society.

A transdisciplinary health team can support patient centered health literacy efforts for better stroke secondary prevention. We always need integration of Hospitals and primary care with community-based health and social services.

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