CARTAS AL EDITOR

Symptom attribution in ischemic stroke: a strategy to increase thrombolysis rate

Dear editor: In Mexico, stroke is responsible of 620.24 disability-adjusted life years per 100 000.[1] Despite its public health relevance, stroke is unknown by most of the population.[2] Correct symptoms attribution has been suggested to influence timely hospital arrival. We evaluated symptom attribution in ischemic stroke patients and its influence in a timely arrival to receive thrombolytic therapy.

We included patients with ischemic stroke who were admitted to the University Hospital Dr. José E. González from January 2018 to April 2019. Data was obtained from an ongoing stoke registry (i-ReNe). Attribution of symptoms was asked as an open-ended question. Stroke severity was measured by the National Institutes of Health Stroke Scale (NIHSS). The study was approved by the Ethics and Research Committee (NR18-0002) from our Institution and participants gave verbal informed consent to participate.

A total of 309 subjects were included, 196 (63.4%) were males. Mean age was 61.02 (±13.4) and years of education was 7.26 (±4.2). Most common cardiovascular risk factors were sedentarism (65%) and hypertension (58.3%), while the most frequent clinical manifestations were upper (80.5%) and lower limb weakness (77.6%). At admission, most of the patients (59.7%) had a moderate stroke severity (NIHSS: 5–15). Attribution of symptoms was reported in 274 (table I) and only 66 (24%) correctly attributed their symptoms to stroke. Those who attributed their symptoms to stroke were more likely to receive intravenous thrombolysis, even after adjusting for age, sex and NIHSS (p=0.018; OR 2.849, 95%CI 1.196–6.787).

Correct attribution of symptoms in ischemic stroke is related to a greater thrombolysis rate. Further, less than 25% of patients attributed their symptoms to stroke, which is concordant with previous reports.[3]

We encourage Mexican Health Authorities to promote stroke educational campaigns with a targeted population, such as the campaign

Table I
Characteristics of the population and answer to the open-ended question regarding attribution of symptoms

N= 309	*(%)*
Age	61.02 ± 13.4
Sex, males	196 (63.4)
Years of education	7.26 ± 4.2
To what disease or condition did you attribute your symptoms when they started? *	
Stroke	66 (24)
Hypertension	32 (11.6)
Fatigue	14 (5.1)
Dizziness	10 (3.6)
Diabetes	8 (2.9)
Myocardial infarction	7 (2.5)
Infection	6 (2.1)
Hypoglycemia	4 (1.4)
Other causes	65 (23.7)
Could not attribute to a disease	62 (22.6)

* Information about attribution of symptoms was reported by 274 patients.

Chécate, mídete, muévete, which has been accepted and well received by the objective population.[4] Health authorities, together with non-profit organizations, such as the Mexican Association of the Cerebrovascular Disease (Amevasc, by its acronym in Spanish) and academic institutions must work together to foster knowledge of stroke and correct interpretation of symptoms to increase the thrombolysis rate and reduce the disability after stroke.

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Increased incidence of *Neisseria meningitidis* infections in Nuevo León, Mexico

Dear editor: *Neisseria meningitidis* is a Gram-negative organism associated with serious diseases; while 13 meningococcal serogroups have been described, most cases are associated with serogroups; A, B, C, X, Y and W.[1] The General Epidemiology Department (DGE, by its acronym in Spanish) of Mexico reported 37 cases of meningococcal meningitis in 2017 (0.02 cases per 100 000 persons) and 20 cases in the first semester of 2018, none of them from the state of Nuevo León.[2,3]

Between August 2018 and March 2019, our laboratory confirmed 10 cases of meningococcal infection; with eight patients from the university hospital and two from two other hospitals.

A confirmed case was defined as described by the CDC. The isolates were identified by MALDI-TOF and the subgroup by standard agglutination. Seven of the 10 cases were meningococcal meningitis, and the other three were respiratory infections.

The cases of meningitis presented the classic signs and symptoms of meningitis plus the purpuric lesions characteristic of meningococcemia. All but one of the patients were adults. The most important laboratory characteristics are listed in table I. Serotyping was performed in eight out of the 10 patients, with three isolates detected to be C, three Y and two W.

The case fatality ratio was 30% (3/10). Two fatalities presented invasive meningococcal disease, developed septic shock, multiple organ failure, and ultimately succumbed. Out of the three patients with respiratory isolates, two were patients with pneumonia and one had pulmonary infiltrates believed to be metastatic without signs or symptoms of pneumonia. The cumulative incidence was calculated as 0.27 per 100 000 persons for meningitis/meningococcemia and 0.39 per 100 000 persons for all meningococcal infection during the study period.[4] None of the patients had a history of meningococcal vaccination nor were they epidemiologically linked with one another. All close contacts and exposed healthcare personnel received prophylaxis with either ciprofloxacin or ceftriaxone, and none of them developed an infection.

The active surveillance of *N. meningitidis* during the last 13 years showed that this species is the main cause of bacterial meningitis in the pediatric population in Tijuana, a city in northern Mexico, bordering San Diego CA, USA.[5] In that study, the predominant serotypes were C, Y and B. In our report, the serotypes were C, Y and W.

The increasing number of cases have a special impact on several levels; on healthcare professionals and the public due to potential exposure (in most cases) without previous vaccination. In addition, the national and international epidemiologic repercussions such as a high bilateral flow of the local and migrant population that use this region as passage since Nuevo León is a bordering state with the United States of America.

This work reports the considerable increase in the number of cases of infection by *N. meningitidis* in Nuevo León, with the notable circulation of serogroup W, which has an increasing incidence and has been reported in Africa, South America, but has not been predominant in Mexico or on the border between the United States and Mexico.[6] It is important to increase epidemiological surveillance and reevaluate the primary prevention strategy.

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Table I
DESCRIPTION OF THE PATIENTS' CHARACTERISTICS. HOSPITAL UNIVERSITARIO DR. JOSÉ ELEUTERIO GONZÁLEZ, MONTERREY, MEXICO. JULY 2019

				Blood				*CSF*					
Pt	*Date (m/y)*	*Gen/Age (years)*	*CC*	*WBC (k/mL)*	*Plat (k/mL)*	*BUN (mg/dL)*	*Creat (mg/dL)*	*Glu (mg/dL)*	*Lact (mg/dL)*	*WBC (k/mL)*	*Prot (g/dL)*	*SG*	*O*
1	8/18	M/21	None	25.8	89.4	26	4.3	5	14.2	ND	118	C	S
2	9/18	M/56	None	12.2	94.5	18	3.3	26	10.1	652	81.6	C	D
3	10/18	F/44	None	54.2	201	22	2.6	62	ND	ND	672	C	S
4	11/18	F/53	Lung cancer	10.2	207	7	0.6	ND	ND	ND	ND	ND	S
5	02/19	F/62	None	ND	ND	ND	ND	31	ND	3575	178	Y	S
6	02/19	F/39	Surgery	11.7	209	4	0.5	ND	ND	ND	ND	W	D
7	02/19	F/64	Lung cancer	ND	ND	ND	ND	ND	ND	ND	ND	W	S
8	02/19	F/74	DM/SAH	42.4	68.7	39	3	8	23.8	30	3500	ND	D
9	03/19	F/4m	None	23	338	11	0.3	1	ND	15040	219	Y	S
10	03/19	F/24	Obesity	24.6	165	39	1	54	9.7	462	44	Y	S

CC: Complications/Commorbidity; Creat: creatinine; CSF: cerebrospinal fluid; D: Died; DM: Diabetes Mellitus; Gen: Gender; Glu: Glucose; Lact: lactate; ND: no data; O: Outcome; Plat: Platelets; Prot: Proteins; Pt: patient; S: Survived; SAH: systemic arterial hypertension; SG: Serogroup; WBC: white blood cells; BUN: blood urea nitrogen.

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Prostate cancer screening and socioeconomic disparities in Mexican older adults

Dear editor: With an estimated 1 600 000 new cases and 366 000 deaths every year, prostate cancer (PCa) is the most commonly diagnosed cancer and cancer-related cause of death in men around the world.[1] In Mexico, PCa was one of the most common types of cancer diagnosed in men between 2000 and 2013, having one of the highest cancer-related mortality rates.[2] It has been pointed out that Mexico lacks a coordinating entity for cancer prevention and control and that the health system is fragmented which has led to inadequate control of patients undergoing PCa testing.[3] The present study aimed to seek socioeconomical factors associated with frequency of PCa testing in Mexico. We conducted a cross-sectional analysis

of 5 339 Mexican males years old from the fourth wave of the Mexican Health and Aging Study (MHAS, 2015).[4] Testing activity regarding PCa in the past two years was obtained from a self-reported question. Independent variables included years of education and financial situation. Adjusted multivariate logistic regression model was performed. Following, odds ratio (OR) with a confidence interval (CI) of 95% were obtained.

A 30.9% of the sample reported that had undergone PCa testing within the last two years. Significant differences were found in the bivariate analysis. Subjects that had attended school (7 or 1-7 years) were more commonly tested than those who did not attend it (41.1 vs 46.9 vs 12.0%; $p<0.001$). Likewise, there was a higher prevalence of subjects with a poor financial situation (70.7 vs 29.3%; $p<0.001$). Such associations were also found to be significant after model adjustment (*Education* OR 1.96; CI 1.57 to 2.45; $p<0.001$; *Financial situation* OR 0.73; CI, 0.626 to 0.85; $p<0.001$ [table I]).

These results suggest that education level may be associated with increased awareness of PCa testing and access to PCa testing programs. Similarly, financial status relevance might highlight a disparity in access to and utilization of PCa testing. These findings are consistent with other studies showing that health care utilization among older Mexicans is associated with socioeconomic inequalities.[5]

Table I
Multivariate analysis of the Mexican Health and Aging Study fourth wave, 2015

Variable	*OR*	*CI95%*	*P value*
Education level			
1-7 years	1.19	0.98-1.46	0.075
> 7 years	1.96	1.57-2.45	< 0.001
Financial situation			
Poor	0.73	0.63-0.85	< 0.001

Adjusted by age, depression, cognitive status, number of comorbidities and frailty. Reference categories were no education level and good financial situation (excellent, good or fair).
OR: odds ratio; CI: confidence interval.

A revision of current strategies and public policies allowing a more equal access for all the population could be useful in order to improve current PCa testing practices in Mexico.

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