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ISCHAEMIC STROKES OF THE YOUNG SUBJECT: ETIOLOGICAL PROFILES OF A SERIE OF 160 CASES

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ABSTRACT Ischemic Strokes (IS) of young adults between 15 and 45 years represent globally 10% of strokes at any age. We aim through this retrospective cohort to define the etiological profiles of IS at this particular population in a serie of cases diagnosed and followed up by the neurology team of the military hospital of Meknes over 16 years and to compare our results with those of the literature. The average age of the patients was 36 years with a sex ratio of 0,38 . The topographic distribution of IS did not differ from that of the elderly patients. An etiology was identified in 72 cases: 24 cases of cardiovascular origin, 20 cases of atherosclerosis, 16 cases of angiitis, 8 cases of hematological origin, 4 cases of lacune. The origin remained indeterminate in 88 (55%) patients. Exhaustive initial workup besides close follow up of young adults with IS permit to identify causes, which make it possible to predict the risk of recurrence and to adapt secondary prevention treatment

KEYWORDS : Ischemic Strokes, Young Adults, Embolic Heart Disease

INTRODUCTION:

Ischaemic strokes in young adults from 15 to 45 years of age is a major public health problem because of their frequency, morbidity and mortality. Their etiologies are multiple and hetrogenous, with a large number of IS that remain undetermined despite a thorough etiological assessment. The purpose of our work is to study the etiological profiles in our patients and to compare them with data from the literature.

PATIENTS AND METHODS:

Our study is a retrospective study of 160 IS cases diagnosed at the Neurology Department of Moulay Ismail Military Hospital between December 2002 to December 2018 with an age limits from 16 to 45 years. Initial diagnostic workup included brain CT scan and / or brain MRI, electrocardiogram (ECG), transthoracic echocardiogram, supra-aortic trunk ultrasound scanner, Holter ECG and a standard biological assessment. Other complementary tests were realized according to the etiological orientation (trans-oesophageal echo-cardiography, immunological assessment, lumbar puncture)

RESULTS:

The average age in our patients was 36 years with a sex ratio of 0,38. Cardiovascular risk factors were mainly represented by oral contraception in 7 cases. The topographic distribution of infarction was dominated by carotid territory (77.5%).

The etiologies identified in our series are shown in Figures 1 and 2. The average duration of follow-up was 9 months, 72 patients or (40%) were lost from view as soon as they left the hospital.

Figure 2: Distribution of pathologies according to the TOAST classification

Figure 1: Distribution of etiologies

DISCUSSION:

The IS of young adults represent a particular nosological framework compared to those of elderly patients as there are epidemiological, etiological, and prognostic differences. As in our series, female predominance has been reported in many studies. Which is mainly related to the presence of cardiovascular risk factors specific to this age group, such as oral contraception and migraine [1]. The carotid territory remains the elective seat of the IS of young patients with a percentage ranging from 64 to 70% in several studies [2, 3, 4], at our series carotid territory vascular ischemia represents 77,5%. Embolic heart disease in this series is the leading cause (15%), 20 cases of valvular atrial fibrillation and 4 cases of dilated cardiomyopathy, consistent with literature data (12-40%) [2 , 5, 6]. Atherosclerosis was retained in 20 patients (12.5%) with carotid stenosis ≥50% associated to at least one cardiovascular risk factor, which is consistent with literature data (4-22%) [1, 6].

In our patients, the diagnosis of lacunar infarcts was retained in 4 cases (2.5%), the percentage of this etiology remains very disparate in the literature 0 to 9% [7, 8], but seems more and more accepted. Vascular and hematological diseases can also be responsible for IS in young people (15% of cases in our series), 8 cases of anti-phospholipid syndrome, 8 cases of protein S deficiency, 4 cases of disease of Behçet and 4 cases of primary angitis of the central nervous system. Despite a well-conducted etiological assessment, the cause of IS remains undetermined in 15% to 50% of cases according to the data of the literature [1, 6, 9]. This is mainly due to the insufficiency of the initial assessment and the non-adherence of the patients to the follow-up as was the case in our series where 40% of the patients were lost the follow up.

CONCLUSION:

The strains of IS of the young adults are multiple. Despite a rigorous and thorough etiological investigation, the determination of a cause is not always easy. Only long-term clinical follow-up will reduce the percentage of indeterminate causes.

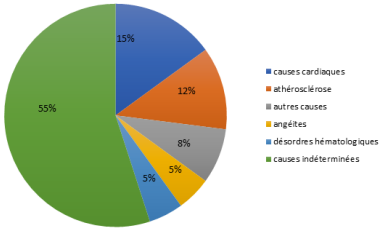

Figure 1: Distribution of etiologies

	Etiologies	Number	Percentage
TOAST I	Atherosclerosis	20	12,5
TOAST II	Embolic cardiopathies	24	15
TOAST III	lacunas	4	2,5
TOAST IV	Other determinate etiologies	24	15
TOAST V	Indeterminate etiologies	88	55

Figure 2: Distribution of pathologies according to the TOAST classification

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