



Revista Clínica Española

www.elsevier.es/rce



ORIGINAL ARTICLE

Cardiovascular risk factors, nonvalvular atrial fibrillation and retinal vein occlusion[☆]

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Received 5 July 2016; accepted 31 October 2016

KEYWORDS

Retinal vein occlusion;
Cardiovascular risk factors;
Nonvalvular atrial fibrillation;
Anticoagulation

Abstract

Objectives: To analyze the importance of cardiovascular risk factors, ultrasound findings in the supra-aortic trunk and the presence of anticoagulated nonvalvular atrial fibrillation (NVAf) in patients with retinal vein occlusion (RVO) and in a control group.

Patients and methods: A cross-sectional study was conducted of all patients with RVO consecutively referred to the office of internal medicine, comparing them with a control group. We analyzed clinical, electrocardiographic and ultrasound variables.

Results: We studied 212 patients (114 men and 98 women) with RVO and 212 controls (95 men and 117 women) of similar ages. Arterial hypertension, dyslipidaemia and diabetes mellitus were significantly more prevalent in the patients with RVO than in the controls (73.6 vs. 50%, 64.6 vs. 48.6% and 27.8 vs. 12.3%, respectively). We observed arteriosclerotic lesions in the supra-aortic trunk in 55% of the patients with RVO. The patients with RVO and NVAf had a greater burden of cardiovascular risk factors than the controls with NVAf. There were no differences in terms of the international normalized ratio or in the use of direct anticoagulants between the cases and controls with NVAf.

Conclusions: Cardiovascular risk factors (especially arterial hypertension) and arteriosclerotic involvement of the supra-aortic trunk are highly prevalent in RVO. Anticoagulation does not appear to be effective in preventing RVO.

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[☆] Please cite this article as: Lisa Gracia M, Córdoba Alonso A, Hernández Hernández JL, Pérez Montes R, Napal Lecumberri JJ. Factores de riesgo vascular, fibrilación auricular no valvular y obstrucción venosa retiniana. Rev Clin Esp. 2016. <http://dx.doi.org/10.1016/j.rce.2016.10.013>

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PALABRAS CLAVE

Obstrucción venosa retiniana;
Factores de riesgo vascular;
Fibrilación auricular no valvular;
Anticoagulación

Factores de riesgo vascular, fibrilación auricular no valvular y obstrucción venosa retiniana**Resumen**

Objetivos: Analizar la importancia de los factores de riesgo vascular, los hallazgos ecográficos de los troncos supraaórticos, y la presencia de fibrilación auricular no valvular (FANV) anticoagulada en pacientes con obstrucción venosa retiniana (OVR) y en un grupo control.

Pacientes y métodos: Estudio transversal de todos los pacientes con OVR remitidos consecutivamente a la consulta de Medicina Interna, comparándolos con un grupo control. Se analizaron variables clínicas, electrocardiográficas y ecográficas.

Resultados: Se estudiaron 212 pacientes (114 varones y 98 mujeres) con OVR y 212 controles (95 varones y 117 mujeres) de edad similar. La hipertensión arterial, la dislipidemia y la diabetes mellitus fueron significativamente más prevalentes en los pacientes con OVR que en los controles (73,6 vs. 50%, 64,6 vs. 48,6%, y 27,8 vs. 12,3%, respectivamente). Se observaron lesiones arterioescleróticas en los troncos supraaórticos en el 55% de las OVR. Los pacientes con OVR y FANV tenían una mayor carga de factores de riesgo vascular que los controles con FANV. No hubo diferencias respecto a la razón internacional normalizada o a la utilización de anticoagulantes de acción directa entre casos y controles con FANV.

Conclusiones: Los factores de riesgo vascular (en especial la hipertensión arterial) y la afectación arterioesclerótica de los troncos supraaórticos son muy prevalentes en la OVR. La anticoagulación no parece eficaz para prevenir la OVR.

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Background

Retinal vein occlusion (RVO) is the second-leading cause of retinal vascular involvement after diabetic retinopathy and represents a major cause of vision loss.¹ Depending on its location, RVO is classified as central or peripheral, the latter being between 3 and 4 times more common.²

RVO is primarily related to aging and vascular risk factors (VRFs), especially arterial hypertension, and have been considered a manifestation of atherosclerosis.^{3,4} A high prevalence has been observed in arteriosclerotic lesions in the supra-aortic trunks in patients with RVO.^{5,6} The association of RVO with states of acquired thrombophilia (hyperhomocysteinemia and antiphospholipid syndrome) is lower and almost absent in situations of hereditary thrombophilia.⁷⁻⁹ There is controversy regarding antiplatelet or anticoagulant therapy in RVO.⁹

A number of authors have considered that RVO is an independent risk factor for stroke development in patients with nonvalvular atrial fibrillation (NVAF).¹⁰ However, other studies that analyzed patients with NVAF who were anticoagulated with warfarin observed cases of RVO despite adequate anticoagulation.^{11,12}

Based on the above, we proposed the following objectives in a consecutive sample of patients with RVO: (a) to analyze the importance of VRFs, (b) to describe the prevalence of atherosclerotic lesions in supra-aortic trunks; and (c) to study the prevalence of anticoagulated NVAF.

Patients and methods

This was a cross-sectional, case-control study that consecutively included all patients diagnosed with RVO between

December 2008 and April 2015 by the Department of Ophthalmology (based on clinical, fundoscopic and angiographic criteria) who were referred to the Department of Internal Medicine. The control group consisted of 212 patients, matched by age and sex, from a prospective population cohort (Camargo cohort) to study the prevalence and incidence of bone diseases and mineral metabolism disorders in postmenopausal women and men over the age of 50 years.¹³ The study was conducted at the University Hospital Marqués de Valdecilla of Santander, which covers a population of 350,000 inhabitants.

Data collection

Data was collected using a standardized questionnaire in a computerized database, which included demographic and clinical data, laboratory parameters, imaging findings and electrocardiographic findings.

Clinical variables

The following clinical variables were recorded: age, sex, arterial hypertension (blood pressure $\geq 140/90$ mmHg or undergoing antihypertensive therapy), diabetes mellitus (according to the American Diabetes Association criteria),¹⁴ dyslipidemia (total cholesterol levels >230 mg/dL or triglyceride levels >150 mg/dL or undergoing lipid-lowering therapy), active smoking and obesity (defined by body mass index). We also collected information on the location of the RVO (central or branch), the presence of NVAF, personal and family history of thromboembolic disease, presence of stroke or infarction since the anticoagulation

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