



Impaired systemic arterial stiffness is associated with retinal vein occlusion



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PURPOSE

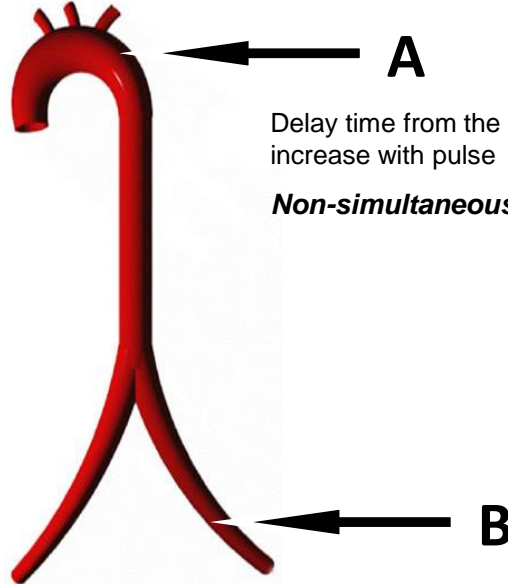
To study whether an association between impaired **systemic arterial stiffness** and **retinal vein occlusion (RVO)** exists.

MATERIALS and METHODS

40 patients suffering from **RVO** and **40 healthy-control subjects** were enrolled in our study. Clinical and demographic data were evaluated. Carotid-femoral pulse wave velocity (**PWV**) was measured to evaluate arterial stiffness.

Exclusion Criteria

- Diabetes Mellitus
- Renal Insufficiency
- Malignancy
- Immunosuppression
- Pregnancy
- Atrial Filbration
- Myocardial infraction (last 6 months)
- Stroke (last 6 months)
- Glaucoma



Delay time from the R-top (ECG) to the 10% arterial diameter increase with pulse

Non-simultaneous recording

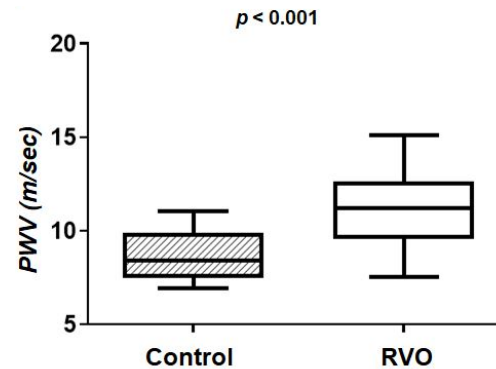


$$PWV = \frac{\text{Distance (AB)}}{\text{Transit time}}$$

RESULTS

No significant differences were detected between the studied groups in sex, age, presence of hypertension or dyslipidemia, body mass index, systolic and diastolic blood pressure, total cholesterol levels, and smoking habits ($p > 0.05$ for all).

	RVO	Controls	P value
Subjects (number)	40	40	
Age (years)	68±11	69±6	0.80
Male Gender (%)	48	50	0.85
BMI (Kg/m ²)	28.64±4.30	27.10±3.88	0.18
Hypertension (%)	78	63	0.26
Dyslipidemia (%)	72	65	0.58
Smoking (%)	41	25	0.24
SBP (mmHg)	134±15	131±17	0.61
DBP (mmHg)	85±13	80±10	0.17
Cholesterol (mg/dL)	189 (164-231)	203 (153-242)	0.38



PWV was also **significantly** and **independently** associated with the development of RVO.

	Odds Ratio	95% Confidence Intervals	P value
Age (years)	1.09	0.89 – 1.34	0.42
Sex (male/female)	1.01	0.06 – 17.59	0.98
BMI	1.77	0.89 – 3.54	0.11
Smoking	1.77	0.02 – 142.11	0.80
Hypertension (Yes/No)	0.16	0.01 – 17.69	0.44
Dyslipidemia (Yes/No)	3.28	0.09 – 114.65	0.51
PWV (m/sec)	4.52	1.18 – 17.39	0.04

CONCLUSIONS

We have shown that RVO is associated with **significantly increased arterial stiffness**. Our results strengthen and highlight the vascular theory, according to which, **systemic arteriosclerosis** plays a significant role in the **pathogenesis of RVO**.