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Challenging the use of color doppler duplex ultrasound in the present era – findings from two different scenarios in the everyday clinical practice

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We evaluated (I) CDDU parameters suggestive for arteriogenic ED in a contemporary cohort of men without known cardiovascular risk factors (CV); and, (II) we characterized CDDU findings at different ages

Methods

- Data from **127 patients** undergoing **dynamic CDDU** following the same standardized methodology were analysed.
- **Patients were segregated according to the presence of known CV risk factors (CV+ vs. CV-, respectively).**
- Descriptive statistics analysed the prevalence of CDDU parameters suggestive for arteriogenic ED in CV- men. Descriptive statistics and multivariable logistic regression analysis with local polynomial smoothing models tested the probability of pathological findings at different ages.

Results

- According to CV status, 45.6% vs. 55.7% CDDU were suggestive for pathological CDDU findings in CV- vs. CV+ patients, respectively. Of CDDU findings, arteriogenic and venogenic ED criteria were observed in 8.8% vs. 8.6% and 36.8% vs. 47.1% of patients in CV- and CV+ groups, respectively ($p=0.5$).
- At MVA model, the probability of having normal CDDU parameters ranged between 66% <40 years of age to 37% at >60 years of age, similar results were obtained stratifying subjects according to comorbidity status and BMI categories.





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Figure 1. Multivariate logistic regression analysis with local polynomial smoothing method showing the probability of pathological findings at CDDU at different ages (covariates: age, BMI, CCI, hypertension, smoking status).

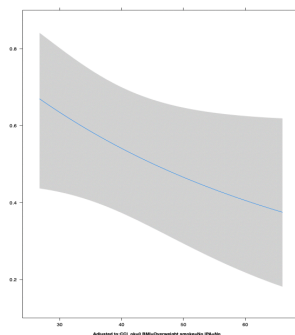


Figure 2. Multivariate logistic regression analysis with local polynomial smoothing method showing the probability of pathological findings at CDDU at different ages stratified by CCI status (covariates: age, BMI, CCI, hypertension, smoking status).

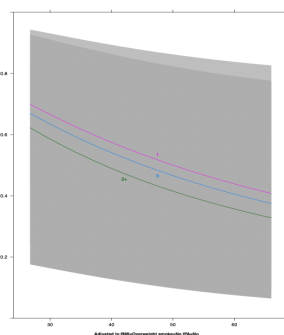
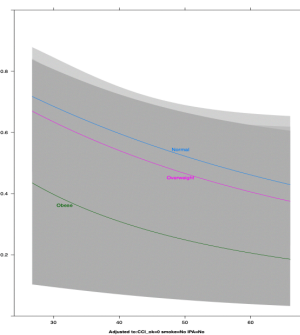


Figure 3. Multivariate logistic regression analysis with local polynomial smoothing method showing the probability of pathological findings at CDDU at different ages stratified by BMI classes (covariates: age, BMI, CCI, hypertension, smoking status).



A significant proportion of ED patients without known CV risk factors have CDDU parameters suggestive for arteriogenic ED. Pathological findings at CDDU are directly correlated with advancing age.

	CV-	CV+	p-value
Patients [N. (%)]	57 (44.8)	70 (55.2)	
Age (yr)	42.0 (34.0-52.0)	53.0 (41.5-60.5)	0.005
Median (IQR)			
BMI	24.9 (22.8-26.5)	26.4 (24.7-29.6)	<0.001
Median (IQR)			
Hypertension [N. (%)]			<0.001
No	57 (100.0)	36 (51.4)	
Yes	0 (0.0)	34 (48.6)	
Type 1 Diabetes Mellitus [N. (%)]			0.06
No	57 (100.0)	63 (91.3)	
Yes	0 (0.0)	6 (8.7)	
Type 2 Diabetes Mellitus [N. (%)]			0.2
No	55 (96.5)	61 (88.4)	
Yes	2 (3.5)	8 (11.6)	
Smoking [N. (%)]			<0.001
Never smoked	57 (100.0)	37 (52.9)	
Former/active smokers	0 (0.0)	33 (47.1)	
Alcohol [N. (%)]			0.2
Abstainers	20 (35.7)	17 (24.3)	
Drinkers	36 (64.3)	53 (75.7)	
Hypercholesterolemia [N. (%)]			0.01
No	57 (100.0)	65 (92.9)	
Yes	0 (0.0)	5 (7.1)	
CDDU findings [N. (%)]			0.5
Normal	31 (54.4)	31 (44.3)	
Arteriogenic	5 (8.8)	6 (8.6)	
Venogenic	21 (36.8)	33 (47.1)	
IIEF-EF [N. (%)]			0.4
Non ED	4 (9.1)	2 (3.6)	
Mild ED	11 (25.0)	8 (14.3)	
Mild-to-moderate ED	3 (6.8)	7 (12.5)	
Moderate ED	8 (18.2)	14 (25.0)	
Severe ED	18 (40.9)	25 (44.6)	



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