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Percutaneous coronary intervention in patients with diabetes mellitus

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Introduction: The aim of this study was to investigate the frequency of percutaneous coronary intervention (PCI) performance in patients undergoing coronary angiography, with particular emphasis on gender differences, the presence and type of diabetes, patient age, and the indications for the procedure. The results contribute to better understanding of the link between diabetes and coronary artery disease[1,2].

Patients and Methods: Data was obtained retrospectively from Hospital Information System. Data of 1015 patients who underwent coronarography in Thalassotherapia Opatija between January 1, 2023, and January 1, 2024 was analyzed using non-parametric tests and Pearson's chi-square test in Statistica 14.0 software. All tests were evaluated at a statistical significance level of 0.05 (5%).

Results: The results showed no statistically significant difference in PCI performance between men and women in the study sample: $x^2(1, N=1015)=1.38$, $p=0.239$ (**Table 1**). PCI is performed more often in subjects with diabetes (**Table 2**). PCI was performed statistically more frequently in patients with Type 1 diabetes compared to those with Type 2 diabetes (**Table 3**). Subjects who underwent PCI were significantly older than those who did not. No statistically significant difference was found in the age of participants with diabetes who underwent PCI and those who did not. Subjects without diabetes who underwent PCI were significantly older than subjects who did not (**Table 4**). Subjects with diabetes who underwent PCI (N=73) had a median age of 70 (IQR 65-73) years, and those without diabetes who underwent PCI (N=181) had a median age of 70 (IQR 65-76) years. No statistically significant difference was found in the age of the mentioned respondents U=6195, z=-0.78, $p=0.437$. The most common indication for coronary angiography, after which PCI was performed, was chronic coronary syndrome

TABLE 1. Frequency of percutaneous coronary intervention (PCI) by gender in the study sample.

Coronary angiographies – N (%)	Total	Men	Women	p*
PCI performed	254 (25.02)	180 (26.12)	74 (22.70)	0.239
PCI not performed	761 (74.98)	509 (73.88)	252 (77.30)	
Total	1015 (100.00)	689 (100.00)	326 (100.00)	

*Pearson's Chi-square

TABLE 2. Frequency of percutaneous coronary intervention (PCI) in relation to the presence of diabetes in the subjects.

Coronary angiographies – N (%)	Patients with diabetes	Patients without diabetes	p*
PCI performed	73 (32.44)	181 (22.91)	0.004
PCI not performed	152 (67.56)	609 (77.09)	
Total	225 (100.00)	790 (100.00)	

*Pearson's Chi-square

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TABLE 3. Frequency of percutaneous coronary intervention (PCI) according to diabetes type.

Patients with diabetes mellitus – N (%)	Type I	Type II	p*
PCI performed	8 (88.89)	65 (30.09)	
PCI not performed	1 (11.11)	151 (69.91)	<0.001
Total	9 (100.00)	216 (100.00)	

*Pearson's Chi-square

TABLE 4. Frequency of percutaneous coronary intervention (PCI) according to age and presence of diabetes in the subjects.

Age of subjects (years)	N	Median	Mode	Mode frequency	IQR	Range	p*
Total	1015	68	67	63	62-74	35-97	
PCI performed	254	70	Multiple	15	65-76	35-97	<0.001
PCI not performed	761	68	67	50	62-74	38-91	
With diabetes	225	69	68	19	64-74	45-91	
PCI performed	73	70	73	8	65-73	46-88	0.433
PCI not performed	152	68	68	17	63.50-74	46-88	
Patients without diabetes	790	68	67	46	62-75	35-97	
PCI performed	181	70	Multiple	10	65-76	35-97	<0.001
PCI not performed	609	68	67	38	62-74	38-87	

*Mann-Whitney U test

(CCS), which was recorded in 55.12% cases (N=140), and acute coronary syndrome (ACS) in 13.38% cases (N=34). Indication for PCI in DM type I patients was ACS (75.00%; N=6) and in those with DM type II CCS (80.00%, N=52). Comparison of the frequency of CCS and ACS indications between subjects with DM type I and II proved to be statistically significant, p=0.003.

Conclusion: Although the results of this study support previous research, it revealed some significant differences: no statistically significant difference in age between patients with and without diabetes who underwent PCI was found. A possible explanation may be specific to our population and likely reflects clinical practice which prioritizes referring older patients. Small sample limits definitive conclusions, thus further studies are warranted.

LITERATURE

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