Supplementary material

Januszek R, Siudak Z, Malinowski KP, et al. Factors determining the frequency of optical coherence tomography and intravascular ultrasound use in patients treated with percutaneous coronary interventions in recent years: Analysis based on a large national registry. Kardiol Pol. 2023.

Table S1. Predictors of IVUS during coronary angiography – multivariate analysis

Variable	OR	95% CI	*P*-Value
Age, years	0.979	0.973-0.984	<0.001
Body mass, kg	0.991	0.987-0.995	<0.001
Total contrast amount, mL	1.004	1.003-1.004	<0.001
Total radiation dose, mGy	1.00016	1.00009-1.00023	<0.001
COPD	1.459	1.085-1.962	<0.05
Prior PCI	2.220	1.924-2.560	<0.001
Prior CABG	0.281	0.191-0.414	<0.001
Kidney failure	1.434	1.129-1.821	<0.005
Killip IV	0.428	0.259-0.709	<0.001
UFH during angiogram	1.464	1.279-1.677	<0.005
Time from FMC to angiography (max. 24 hours)	2.612	2.042-3.341	<0.001
$P2Y_{12}$ during angiogram			
Ticagrelor vs. clopidogrel	1.560	1.290-1.886	<0.001
Clopidogrel	0.661	0.567-0.770	<0.001

Coronary angiography			
LMCA vs. MVD	7.299	6.122-8.703	<0.001
LMCA vs. SVD	3.441	2.921-4.053	<0.001
LMCA vs. no significant stenoses	1.727	1.344-2.220	<0.001
SVD vs. MVD	2.121	1.788-2.516	<0.001
MVD vs. no significant stenoses	0.236	0.183-0.305	<0.001
SVD vs. no significant stenoses	0.502	0.394-0.638	<0.001

Adjusted to year of procedure.

CABG, coronary artery bypass grafting; COPD, chronic obstructive pulmonary disease; FMC, first medical contact; IVUS, intravascular ultrasound; LMCA, left main coronary artery; MVD, multi-vessel disease; PCI, percutaneous coronary intervention; SVD, single-vessel disease; UFH, unfractionated heparin

Table S2. Predictors of IVUS use during PCI - multivariate analysis

Variable	OR	95% CI	*P*-Value
Age, years	0.981	0.976-0.986	<0.001
Body mass, kg	0.403	0.183-0.886	<0.05
Total contrast amount, mL	45.169	25.753-79.222	<0.001
Total radiation exposure, mGy	2.832	1.539-5.210	<0.005
Time from pain to FMC (max. 24 hours)	0.492	0.327-0.741	<0.001
Time from pain to angiography (max. 24 hours)	1.875	1.405-2.502	<0.001
Prior myocardial infarction	1.211	1.004-1.461	<0.05
Prior PCI	1.753	1.456-2.111	<0.001
Prior CABG	0.564	0.413-0.770	<0.001

Kidney failure	1.445	1.177-1.773	<0.001
UFH during angiogram	1.182	1.053-1.326	<0.001
GP IIb/IIIa inhibitor during angiogram	1.511	1.335-1.709	<0.001
Coronary dissection during angiography	3.788	1.547-9.225	<0.001
Aspiration thrombectomy during PCI	1.402	1.157-1.699	<0.001
Rotablation	5.340	3.151-9.049	<0.001
Acetyl-salicylic acid during PCI	0.813	0.708-0.933	<0.001
LMWH during PCI	0.493	0.305-0.798	<0.001
No-reflow during PCI	2.265	1.225-4.185	<0.001
Coronary artery perforation during PCI	7.488	3.636-15.419	<0.001
Bifurcation	1.644	1.437-1.879	<0.001
PCI with drug-eluting stent	0.725	0.598-0.879	<0.005
PCI with bare-metal stent	0.331	0.120-0.913	<0.05
Puncture site bleeding	3.766	1.197-11.851	<0.05
TIMI grade flow 0/1 before PCI	0.736	0.655-0.828	<0.001
TIMI grade flow 3 after PCI	1.610	1.234-2.101	<0.001
Any periprocedural complication	0.344	0.217-0.546	<0.001
Unfractionated heparin	0.642	0.519-0.795	<0.001
$P2Y_{12}$ during PCI			
Ticagrelor	1.750	1.513-2.025	<0.001
Prasugrel	1.672	1.096-2.551	<0.05
Clopidogrel	1.381	1.178-1.619	<0.001
Ticagrelor vs. clopidogrel	1.267	1.090-1.472	<0.005
Location of culprit lesion			

Right coronary artery	0.590	0.465-0.749	<0.001
Proximal right coronary artery	1.622	1.239-2.125	<0.001
Right posteriori descending artery	0.280	0.115-0.680	<0.01
Left main coronary artery	10.523	9.130-12.130	<0.001
Left anterior descending branch	2.025	1.756-2.335	<0.001
1st diagonal	0.748	0.589-0.950	<0.05
2nd diagonal	0.142	0.035-0.581	<0.01
Circumflex branch	0.841	0.722-0.979	<0.05
1st obtuse marginal branch	0.686	0.502-0.938	<0.05
2nd obtuse marginal branch	0.285	0.122-0.664	<0.005
Saphenous vein graft	0.155	0.037-0.644	<0.05

Adjusted to year of procedure.

CABG, coronary artery bypass grafting; FMC, first medical contact; GP, glycoprotein; PCI, percutaneous coronary intervention; TIMI, thrombolysis-in-myocardial infarction.

Table S3. Predictors of optical coherence tomography use during angiography - multivariate analysis

Variable	OR	95% CI	*P*-Value
Age, years	0.972	0.967-0.976	<0.001
Body mass, kg	0.995	0.991-0.998	<0.005
Total amount of contrast, mL	1.006	1.0056-1.0064	<0.001
Total radiation exposure, mGy	1.0001	1.00005-1.00016	<0.001
Male	1.303	1.148-1.479	<0.001

Prior stroke	0.541	0.354-0.826	<0.005
Prior MI	2.882	2.577-3.224	<0.001
Prior CABG	0.483	0.369-0.632	<0.001
Smoking status	0.750	0.647-0.869	<0.001
Arterial hypertension	0.824	0.736-0.923	<0.001
GPI IIb/IIIa during angiogram	0.292	0.187-0.457	<0.001
Direct transport	0.381	0.235-0.617	<0.001
Coronary angiography			
LMCA vs. no significant stenosis	0.518	0.416-0.646	<0.001
MVD vs. no significant stenosis	0.240	0.203-0.284	<0.001
SVD vs. no significant stenosis	0.596	0.521-0.682	<0.001
MVD vs. SVD	0.402	0.343-0.470	<0.001

Adjusted to year of procedure.

CABG, coronary artery bypass grafting; GPI IIb/IIIa inhibitor, glycoprotein IIb/IIIa inhibitor; LMCA, left main coronary artery; LMWH, low molecular weight heparin; MI, myocardial infarction; MVD, multi-vessel disease; SVD, single-vessel disease.

Table S4. Predictors of optical coherence tomography use during PCI - multivariate analysis

Variable	OR	95% CI	*P*-Value
Age, years	0.973	0.966-0.980	<0.001
Body mass, kg	0.993	0.988-0.998	<0.01
Total amount of contrast, mL	1.003	1.002-1.004	<0.001
Total radiation exposure, mGy	1.00019	1.00012-1.00026	<0.001
Prior PCI	1.639	1.410-1.906	<0.001
Prior CABG	0.540	0.367-0.794	<0.005

Diabetes mellitus	0.824	0.682-0.995	0.05
Arterial hypertension	0.483	0.416-0.561	<0.001
Killip IV class grade	0.248	0.079-0.777	<0.05
Active smoking	0.655	0.540-0.795	<0.001
GPI IIb/IIIa during angiogram	0.424	0.291-0.618	<0.001
Cardiac arrest at baseline	0.234	0.058-0.948	<0.05
Aspiration thrombectomy	1.701	1.092-2.650	<0.05
Rotablation	4.370	2.875-6.643	<0.001
Chronic total occlusion	1.625	1.224-2.158	<0.001
DES	0.791	0.632-0.991	<0.05
BVS	38.505	28.740-51.586	<0.001
TIMI flow grade 0/1 before PCI	0.558	0.464-0.671	<0.001
Pharmacotherapy			
Acetyl-salicylic acid during PCI	2.399	1.818-3.166	<0.001
LMWH during PCI	0.278	0.124-0.624	<0.005
No-reflow during PCI	2.181	1.104-4.308	<0.05
Ticagrelor	0.772	0.598-0.997	<0.05
Clopidogrel	0.735	0.598-0.903	<0.005
Location of culprit lesion			
Proximal RCA	1.487	1.181-1.872	<0.001
LMCA	2.687	2.051-3.520	<0.001
LAD	1.695	1.447-1.984	<0.001
SvG	2.406	1.252-4.623	<0.01

Adjusted to year of procedure.

BVS, bioresorbable vascular stent; CABG, coronary artery bypass grafting; DES, drug-eluting stent; LAD, left anterior descending artery; LMCA, left main coronary artery; LMWH, low molecular weight heparin; MI, myocardial infarction; PCI, percutaneous coronary intervention; GPI IIb/IIIa inhibitor, glycoprotein IIb/IIIa inhibitor; RCA, right coronary artery; TIMI, thrombolysis-in-myocardial infarction.

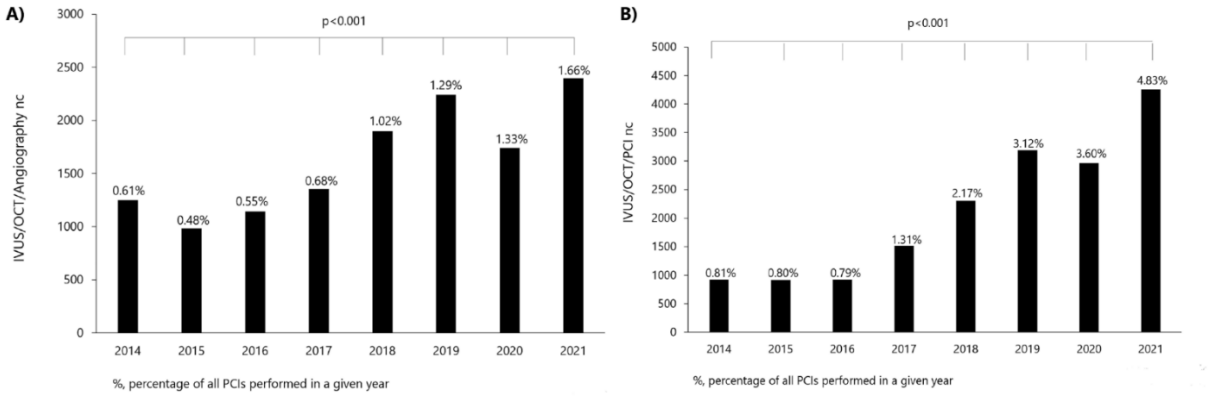

Figure S1. A. Frequency of either optical coherence tomography or intravascular ultrasound use during coronary angiography diagnostics in following years of the analysed period (2014-2021). **B.** Frequency of either optical coherence tomography or intravascular ultrasound use during percutaneous coronary interventions in following years of the analysed time period (2014-2021). IVUS, intravascular ultrasound; OCT, optical coherence tomography; PCI, percutaneous coronary intervention.