P0574 **IS PERIPROCEDURAL BLOOD LOSS FOLLOWING PERCUTANEOUS CORONARY INTERVENTION A RISK FACTOR FOR CONTRAST-INDUCED ACUTE KIDNEY INJURY ?**

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Background and Aims: Contrast-induced acute kidney injury (CI-AKI) is a significant concern with the use of intraarterial contrast agents, especially in percutaneous coronary interventions (PCI) in which higher contrast volumes are used. Presence of anemia is a risk factor for CI-AKI and is a component of various risk-prediction models. However, the impact of periprocedural hemoglobin (Hb) drop following PCI on CI-AKI is not known, despite the fact that significant blood loss is fairly common in patients undergoing PCI. The aim of this study was to examine whether periprocedural Hb drop is a risk factor for development of CI-AKI following PCI.

Method: This was a single-center, retrospective study of patients admitted for elective or primary PCI at our center between January 2015 and December 2018. Patients with baseline eGFR <15mL/min/1.73m^2 were excluded. CI-AKI was defined as per the KDIGO 2012 guidelines as an increase in serum creatinine by at least 0.3 mg/dl, or 1.5-1.9 times the baseline values within 48 hours after administration of contrast media. Periprocedural Hb drop was defined as fall in Hb by at least 1g/dL below baseline values within 48 hours following PCI.

Results: A total of 6418 patients were included. Baseline characteristics of the study population are shown in **table 1**. Overall incidence of CI-AKI in our study was 7.6% (n=490), of which 3.9% (n=19) required dialysis. Higher incidence of CI-AKI was seen in those with baseline eGFR < 60 ml/min/1.73m^2 (16.4%) and a pre-procedural Mehran score >11 (33%). Peri-PCI Hb drop was seen in 49.9% (n=3203), with a drop >2g/dL in 18.5% (n=1185). On multivariate logistic regression analysis (**Table 2**), it was found that periprocedural Hb drop >2g/dL was independently associated with CI-AKI (OR 1.49, 95% CI 1.18-1.88, P=0.001). Furthermore, in those with periprocedural blood loss, the risk of CI-AKI was increased by 1.3 times for each 1g/dL drop in Hb (OR 1.30, 95% CI 1.14-1.49, P<0.001). Additionally, apart from traditional risk factors, hypertension was independently associated with development of CI-AKI (**Table 2**).

Conclusion: Periprocedural blood loss was associated with a higher risk of CI-AKI after PCI. Moreover, risk of CI-AKI increased with increasing severity of blood loss. Whether measures to minimize blood loss, like using a transradial approach, staging complex procedures and close monitoring of anticoagulation/antiplatelet regimens, will help reduce risk of CI-AKI needs to be studied.

Table 2. Correlates of CI-AKI.

Variables	Multivariate Analysis			
	Odds ratio	Lower 95% CI	Upper 95% CI	P value
Peri-PCI Hb drop >2g/dL	1.49	1.18	1.88	**0.001**
Age >75 years	1.23	0.91	1.66	0.449
Male gender	0.96	0.77	1.19	0.734
Diabetes mellitus	1.01	0.83	1.24	0.859
Hypertension	1.41	1.15	1.73	**0.001**
Primary PCI	1.54	1.19	1.97	**0.001**
STEMI	1.50	1.16	1.93	**0.002**
Anemia	1.46	1.19	1.81	**<0.001**
eGFR<60 mL/min/1.73m^2	2.29	1.86	2.80	**<0.001**
Pulmonary edema	3.65	2.81	4.74	**<0.001**
Hypotension	2.17	1.48	3.17	**<0.001**
IABP	1.75	1.16	2.64	**0.007**

Table 1. Baseline characteristics

	No CI-AKI (n=5928)	CI-AKI (n=490)	P value
Clinical			
Age (years)	60.3±10.8	64.2±10.4	**<0.001**
Male, n (%)	4439 (74.9%)	337 (68.8%)	**0.004**
Diabetes mellitus, n (%)	2542 (42.9%)	227 (46.3%)	0.141
Hypertension, n (%)	3074 (51.9%)	300 (61.2%)	**<0.001**
Primary PCI, n (%)	2325 (39.2%)	284 (58%)	**<0.001**
STEMI, n (%)	3012 (50.8%)	334 (68.2%)	**<0.001**
Pulmonary edema, n (%)	295 (5%)	120 (24.5%)	**<0.001**
Hypotension, n (%)	147 (2.5%)	55 (11.2%)	**<0.001**
IABP, n (%)	135 (2.3%)	48 (9.8%)	**<0.001**
Lab parameters			
Serum creatinine (mg/dL)	1.03±0.32	1.21±0.56	**<0.001**
eGFR (mL/min/1.73m^2)	79.6±21.5	69.8±27.2	**<0.001**
Baseline eGFR <60mL/min/1.73m^2, n (%)	1023 (17.3%)	200 (40.8%)	**<0.001**
Hb (g/dL)	13.4±2.0	12.9±2.4	**<0.001**
Anemia, n (%)	2021 (34.1%)	226 (46.1%)	**<0.001**
Peri-PCI Hb drop, n (%)	2925 (49.3%)	278 (56.7%)	**0.002**
>2g drop, n (%)	1043 (17.6%)	142 (29%)	**<0.001**
Risk score			
Pre-procedure Mehranscore >11, n (%)	193 (3.3%)	95 (19.4%)	**<0.001**