Lower Bleeding Risk Following PCI in Patients with Diabetes Prescribed Dual Anti-platelet Therapy

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BACKGROUND

- Patients with diabetes experience higher rates of in-stent restenosis, and therefore greater benefit from DES implantation at the time of PCI
- Dual anti-platelet therapy (DAPT) reduces ischemic events post-PCI, but also increases bleeding risk
- Whether bleeding rates differ among patients with and without DM receiving long-term DAPT in real-world practice is unknown

METHODS

- Multicenter US PCI registry
- Patients who underwent PCI and were maintained on DAPT for 1 year were included
- Main outcome measure: patient-reported bleeding (defined according to the Bleeding Academic Research Consortium "BARC") over the year following PCI in patients with and without DM
- Multivariable, hierarchical modified Poisson regression evaluated independent association of DM with bleeding during follow up
- Sensitivity analysis excluded bruising from BARC-defined bleeding events

DISCLOSURES

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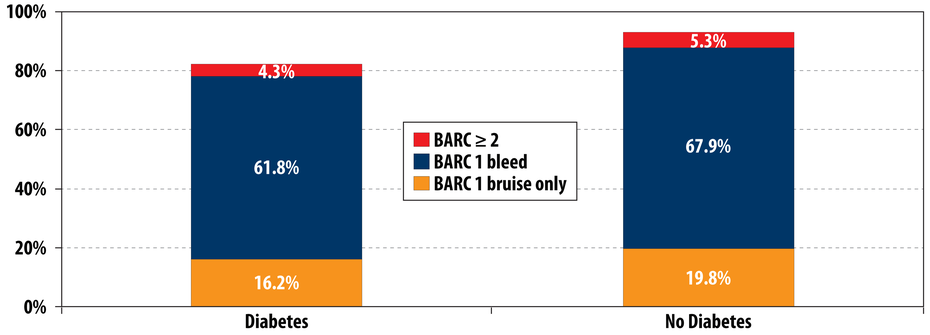
RESULTS

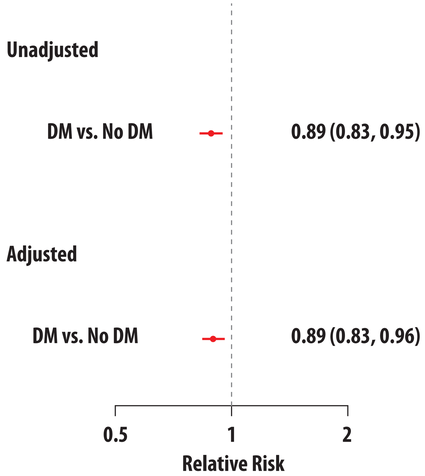
BLEEDING OUTCOMES AT 1 YEAR



*Most severe level of bleeding reported.

*For multivariable adjustment, the following covariates were used: Age, gender, ethnicity, BMI, history of CKD, heart failure and chronic lung disease, history of prior PCI and/or MI, use of anticoagulants during admission, bleeding and/or transfusion during index hospitalization, use of DES and index PCI admission lab values including platelets and nadir hemoglobin.

ASSOCIATION OF DIABETES WITH 1-YEAR BLEEDING



BASELINE CHARACTERISTICS

	Diabetes n=737	No Diabetes n=1533	P-Value
Age (years)	64.9±9.8	64.1±10.9	0.099
Male gender	68.1%	74.3%	0.002
White race	87.8%	93.4%	<0.001
BMI	32.7±6.9	29.3±5.4	<0.001
Chronic kidney disease	13.7%	4.6%	<0.001
Platelet count pre-PCI (x1000)	216.7±63.2	217.7±63.3	0.723
Thrombocytopenia	1.6%	0.5%	0.010
Bleeding problems* (BL)	5.5%	5.8%	0.743
Hemoglobin nadir	12.3±1.7	13.0±1.6	<0.001
Prior heart failure	19.7%	10.2%	<0.001
RBC/ Whole Blood Transfusion	1.9%	1.3%	0.324
Chronic lung disease	14.4%	9.8%	0.001
Prior PCI	48.4%	36.3%	<0.001
Prior MI	32.0%	24.5%	<0.001
Anticoagulation	6.0%	4.8%	0.223
In hospital bleed	1.8%	2.2%	0.477
Drug eluting stent	87.3%	85.6%	0.253

*Defined as answering in the affirmative to the following questionnaire question: Do you have bleeding problems, such as blood in your urine, blood in your stool, coughing up blood or vomiting blood, or an ulcer?

RESULTS

- 2334 PCI patients from 10 US hospitals
- Unadjusted analysis: Patients with DM had fewer bleeding events than those without DM over year following PCI
  - BARC =1: 78.0% vs 87.7%, p<0.001;
  - BARC ≥ 2: 4.3% vs 5.3%, p=0.33
- Following multivariable adjustment: Patients with DM had lower risk of BARC ≥1 bleeding during follow-up
  - RR 0.89, 95% CI 0.83-0.96 vs. no DM

LIMITATIONS

- Despite extensive adjustment, possibility of residual confounding cannot be definitively ruled out
- Although bleeding assessments were based on patient self-report, these were previously demonstrated to be valid when compared with chart-abstracted bleeding events

CONCLUSION

- In this real-world PCI registry, patients with DM experienced lower risk of bleeding following PCI than patients without DM
- As patients with DM also derive greater ischemic benefit from DES (which requires prolonged DAPT), our findings suggest that the balance between benefit and risk of this therapeutic approach is even more favorable in patients with DM than previously considered