We acknowledge limitations to this study. Because sinusitis is diagnosed based on physical examination findings and symptoms, data not captured in NAMCS/NHAMCS, we were unable to determine which patients had acute bacterial sinusitis as strictly defined based on the criteria suggested by recent clinical guidelines. We were also not able to determine if patients receiving antibiotic treatment had recurrent sinusitis or had previously experienced treatment failure with narrow-spectrum therapy for sinusitis, either of which might have made prescription of a broad-spectrum agent acceptable. Previous studies have suggested, however, that bacterial sinusitis composes a relatively small fraction of acute sinusitis cases seen in primary care, and treatment failure is also uncommon. We were also unable to determine which patients had an allergy to recommended agents.

This study highlights that prescribing of broad-spectrum antibiotics for sinusitis, especially quinolones and macrolides, is extremely common. This is an important target for antimicrobial stewardship efforts partially because the benefits of antibiotic therapy are limited. Qualitative research to explore the health care provider and patient attitudes that influence antibiotic selection is a next step to understanding the problem. Also critically important are adoption of clinical guidelines that promote appropriate antibiotic use. Changes in prescribing behavior of health care providers for sinusitis are urgently needed to improve health care quality and stem the rising tide of antibiotic resistance in the United States.

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Periprocedural Management of the Patient With Diabetes Mellitus Undergoing Coronary Angiography: Current Practice

Despite advances in procedural technique and pharmacotherapy, patients with diabetes mellitus (DM) experience worse outcomes than patients without DM undergoing percutaneous coronary intervention (PCI). Periprocedural hyperglycemia is associated with adverse clinical outcomes in patients undergoing PCI, and studies have suggested that treating periprocedural hyperglycemia may improve outcomes by attenuating glucose-mediated ischemic injury at the time of PCI. Simple preventive strategies, such as continuing long-acting hypoglycemic medications, have not been evaluated, and there are no guidelines for periprocedural use of these medications.

We conducted an anonymous electronic survey of cardiologists referring patients for coronary angiography using the American Heart Association Cardiology Fellows Society of Greater New York and the Society of Cardiovascular Angiography and Interventions from March through July 2011. Of the 144 survey responders, 24% were fellows-in-training, and 33% were faculty at a medical school. Among this cohort, 60% believed that hyperglycemia at the time of PCI is harmful, and 94% believed that hypoglycemia at the time of PCI is harmful. Although most clinicians routinely hold oral hypoglycemic medications prior to angiography, substantial numbers do not, with nearly half routinely continuing thiazolidinediones on the morning of coronary angiography (Table). Clinicians are more likely to continue insulin-based regimens than oral medications, but again there is no uniformity of practice. In patients with uncontrolled DM (glycosylated hemoglobin level >10% or blood glucose levels >200 mg/dL), a little more than one-third of physicians reported they would change their usual practice and continue hypoglycemic medications prior to coronary angiography. (To convert glycosylated hemoglobin to a proportion of total hemoglobin, multiply by 0.01; to convert serum glucose to millimoles per liter, multiply by 0.0555.)
The risk of hypoglycemia seems to be a major factor preventing physicians from continuing long-acting hypoglycemic medications prior to PCI. Delays in scheduled cardiac catheterization procedures frequently occur, and, therefore, uncertainty exists regarding how long a patient will be fasting prior to his or her coronary angiogram. However, hypoglycemia is not likely to complicate routine coronary angiography because patients with a procedure scheduled for late afternoon are usually given permission to have a light breakfast and to eat relatively soon after the procedure is completed even when conscious sedation is administered. Furthermore, there is substantial variability in eating patterns and stress levels on the day of PCI, which may lead to hyperglycemia at the time of arterial access. This may explain why most physicians report continuing at least half the dose of long-acting insulin in all patients with DM prior to angiography.

Our data suggest that physicians are influenced by the pharmacologic properties of the various hypoglycemic agents when designing management strategies for patients with DM undergoing coronary angiography. For example, thiazolidinediones and glargine-insulin are unlikely to cause sudden hypoglycemia in the setting of variable eating patterns. Physicians are, therefore, less likely to hold thiazolidinediones compared with sulfonylureas prior to cardiac catheterization. Similarly, physicians are more likely to continue full-dose glargine-insulin than neutral protamine Hagedorn (NPH)-insulin on the day of coronary angiography. Thus, it is a cause for concern that the management of patients treated with metformin reflects a lack of knowledge of the pharmacologic properties of this drug. Metformin is contraindicated in patients with chronic kidney disease owing to the risk of lactic acidosis at very high metformin concentrations. However, in patients with normal kidney function, renal function is unlikely to change following angiography unless contrast-induced nephropathy develops, a complication that occurs 48 to 72 hours after contrast exposure. The half-life of metformin is 2 to 5 hours, and, therefore, the drug label instructs patients to stop the medication for 48 hours after contrast exposure. Nevertheless, 88% of physicians in the current survey report holding metformin prior to coronary angiography. Furthermore, of these physicians, 28% report holding metformin for both 2 days before and 2 days after coronary angiography.
Shah, Danoff, Radford, Rolnitzky, and Sedlis. Drafting of the manuscript: Shah and Sedlis. Critical revision of the manuscript for important intellectual content: Shah, Danoff, Radford, and Rolnitzky. Statistical analysis: Shah and Rolnitzky. Administrative, technical, and material support: Shah. Study supervision: Danoff and Sedlis.

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Results. Of the 277 respondents (response rate, 41.4%), 44% were physicians, and 56% were nurses; 65% had more than 10 years’ work experience. Only 3% had been asked by a patient whether they had cleansed their hands before being cared for in the previous month. Although 74% believed that patients could help to prevent health care–associated infections, 29% of respondents did not support the idea of being reminded by patients to perform hand hygiene, 27% believed that such an inquiry is not part of the patients’ role, and 37% would not consent to wear a badge inviting patients to ask about hand hygiene. Seventy respondents (26%) considered that inviting patients to inquire about staff hand hygiene would be too time consuming, 17% believed that patient inquiry would be upsetting, and 27% felt that it would be humiliating. Forty-four percent admitted to a feeling of guilt if patients discovered that they omitted hand hygiene, and 43% would be ashamed to disclose that they forgot to cleanse their hands. Forty-six percent feared that acknowledging omission could stir patient anger, and 26% believed that it would make them seem inept. Interestingly, 18% feared that admitting their omission to perform hand hygiene could lead to legal action.

By multivariate analysis (Table), endorsement of patient inquiry was independently associated with the beliefs that patients can help prevent medical errors and that patient inquiry can improve HCWs’ hand hygiene behavior. By contrast, endorsement was inversely associated with the belief that omitting hand hygiene is inconsequential, the perception that patient inquiry would be humiliating to HCWs, and that such a strategy would call into question their competency.