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How Cardiologists Present the Benefits of Percutaneous Coronary Interventions to Patients With Stable Angina:

A Qualitative Analysis

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Abstract

Importance—Patients with stable coronary artery disease (CAD) attribute greater benefit to percutaneous coronary interventions (PCI) than indicated in clinical trials. Little is known about how cardiologists' presentation of the benefits and risks may influence patients' perceptions.

Objectives—To broadly describe the content of discussions between patients and cardiologists regarding angiogram and PCI for stable CAD, and to describe elements that may affect patients' understanding.

Design, Setting, and Participants—Qualitative content analysis of encounters between cardiologists and patients with stable CAD who participated in the Verilogue Point-of-Practice Database between March 1, 2008, and August 31, 2012. Transcripts in which angiogram and PCI were discussed were retrieved from the database. Patients were aged 44 to 88 years (median, 64 years); 25% were women; 50% reported symptoms of angina; and 6% were taking more than 1 medication to treat angina.

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Main Outcomes and Measures—Results of conventional and directed qualitative content analysis.

Results—Forty encounters were analyzed. Five major categories and subcategories of factors that may affect patients' understanding of benefit were identified: (1) rationale for recommending angiogram and PCI (eg, stress test results, symptoms, and cardiologist's preferences); (2) discussion of benefits (eg, accurate discussion of benefit [5%], explicitly overstated benefit [13%], and implicitly overstated benefit [35%]); (3) discussion of risks (eg, minimization of risk); (4) cardiologist's communication style (eg, humor, teach-back, message framing, and failure to respond to patient questions); and (5) patient and family member contributions to the discussion.

Conclusions and Relevance—Few cardiologists discussed the evidence-based benefits of angiogram and PCI for stable CAD, and some implicitly or explicitly overstated the benefits. The etiology of patient misunderstanding is likely multifactorial, but if future quantitative studies support the findings of this hypothesis-generating analysis, modifications to cardiologists' approach to describing the risks and benefits of the procedure may improve patient understanding.

Nearly 500 000 patients received percutaneous coronary intervention (PCI) in 2010. For patients with stable coronary artery disease (CAD), PCI may improve symptoms faster than optimal medical therapy (OMT).^{1,2} However, a recent meta-analysis did not find this benefit³ and further supported prior studies²⁻⁶ showing that PCI does not reduce the risk of death or myocardial infarction (MI) for patients with stable angina. Cardiologists appear to be aware of the benefits of PCI for stable CAD,⁷ but studies have consistently demonstrated that patients with stable CAD believe that PCI will reduce their risk of MI and death.⁷⁻¹¹ It is not known why patients overestimate these benefits. The etiology of patient misunderstanding is likely multifactorial. We sought to better understand cardiologists' approach to describing the risks and benefits of PCI vs OMT. Thus, we performed a qualitative content analysis of conversations between cardiologists and patients with stable CAD regarding angiogram and PCI. Understanding how cardiologists communicate could identify potential sources of patients' misperceptions and inform future interventions to improve patient understanding.

Methods

Study Population

Encounters between patients and physicians were sampled from the Verilogue Point-of-Practice Database; 600 physicians from diverse practices and specialties across the United States contribute to this database, which is used for health services and marketing research. Physicians are recruited from Verilogue's list of board-certified "active" physicians (those who prescribe medications frequently and/or see a large number of patients). Verilogue randomly selects approximately 1000 names from panel lists, then recruits those physicians (using fax, e-mail, or telephone blast). Panel members receive a monthly recording quota and are reimbursed for each conversation. Eligible patients are approached by front desk staff or the physician to participate; with patient consent, the physician records the interaction. Approximately 8 of 10 patients agree to participate. Physicians are not informed which elements of the conversation might be of interest to Verilogue, to reduce the potential

for bias (Jamison Barnett, MS, Chief Technical Officer and Vice President of Verilogue, written communication, December 11, 2013).

For this study, Verilogue searched for outpatient encounters that met the following criteria: patients were 40 years or older, the physician was a cardiologist, and the encounter took place between March 1, 2008, and August 31, 2012, and contained mention of keywords (eg, PCI, stent, angina, angiogram, or catheterization). Verilogue screened the encounters and identified discussions that included active decision making about angiogram and PCI. Two research team members with clinical expertise in internal medicine (M.B.R. and S.L.G.) reviewed these encounters to confirm that they contained active decision making about angiogram and PCI. Patients who were experiencing acute coronary syndrome were excluded. Physicians reported patient demographics and medications as well as their own sex, years in practice, specialty, practice type, and geographical location.

The Baystate Medical Center Institutional Review Board determined that this study did not constitute human subjects research because it involved only deidentified data.

Qualitative Content Analysis

Qualitative content analysis includes 3 distinct approaches: conventional, directed, and summative.¹² The conventional approach is used when little is known about a topic and no a priori theories exist; analytic techniques such as grounded theory¹³ are commonly used. A directed approach is used when prior research exists about a phenomenon but is incomplete, and the goal is to extend existing knowledge.¹² The summative approach counts keywords or phrases to make inferences about use. We used the conventional and directed approaches to assess the content of angiogram and PCI discussions between patients and cardiologists and to identify aspects of the discussion that could be related to patients' understanding of PCI benefits.⁷⁻¹¹ In the directed approach, a priori codes are developed based on existing knowledge; new codes are added as unanticipated concepts emerge.¹² Codes are organized into categories and subcategories, presenting evidence that supports or refutes theories. We did not have a priori hypotheses regarding the overall content of the encounters, but based on the evidence that some patients misperceive the benefit of PCI,⁷⁻¹¹ we hypothesized that cardiologists might present information in a manner that influences patients understanding and beliefs about the benefits, including use of loss-framed messaging (ie, the patient will have a negative outcome if they do not follow a recommendation).¹⁴

One investigator (S.L.G.), who is trained in internal medicine and qualitative methodology, developed a provisional codebook using 5 randomly selected transcripts, prior research, and clinical expertise. Another investigator (K.M.M.), who also has extensive experience with qualitative methods, read 4 additional transcripts and reviewed the codebook for completeness and clarity. One of us (M.B.R.) read all the transcripts and discussed decisions about the codebook with the 2 investigators; disagreements were resolved through consensus. The first investigator then performed open line coding on each "turn" (sequential conversation segments for each speaker), adding and revising codes iteratively until theoretical saturation (no new concepts are detected for at least 3 encounters) was reached.¹⁵ The 3 of us then performed secondary coding, in which line codes were organized into broad categories and subcategories related to the study's focus. Differences in secondary coding

decisions were resolved through consensus. Categories were tested for completeness through review of additional transcripts (n = 20) to ensure no new concepts were identified. For each encounter, we also recorded (1) the primary reason for recommending angiogram and PCI and (2) whether angiogram and PCI was scheduled at the end of the encounter. Eight transcripts (20%) were independently coded in an iterative process by 2 investigators (S.L.G. and R.K.), and agreement was assessed.¹⁵

For each transcript, we performed word counts to assess the proportion of the encounter that the cardiologist was speaking compared with the patient and/or caregiver. For descriptive purposes only, we counted the number of transcripts that contained the categories identified.

Results

In the 40 encounters analyzed, all cardiologists (n = 20) were male and had 7 to 31 years (median, 17 years) in practice. Two described themselves as interventional cardiologists; the remainder identified as clinical cardiologists. Most were from the following practice types: outpatient group practices (67%), outpatient individual practices (11%), community hospital clinics (15%), and nursing homes or long-term care facilities (<1%). Four major geographical regions were represented: East North Central (Illinois, Indiana, and Michigan), New England (Massachusetts), Pacific (California), and Middle Atlantic (New York, New Jersey, and Pennsylvania). Patients ranged in age from 44 to 88 years (median, 64 years), 25% were female, and 18% were black. Half of the patients¹⁶ reported angina or angina-equivalent symptoms; others were referred for issues such as an abnormal stress test result (Table). Medication data were available for 34 of 40 patients. Of these, 17 (50%) were taking a statin, 16 (47%) an antiplatelet medication, and 2 (6%) more than 1 medication to treat angina. Nine (23%) had a family member present at the encounter. Cardiologists uttered 86% of the words in coded turns. Intercooder agreement reached 82%.

Encounters followed similar patterns: review of patients' medical history and symptoms, a description of stress test results, if applicable, discussion of angiogram and PCI, and scheduling. The discussion about angiogram and PCI included, to varying extents, a description of what the patient could expect the day of the procedure, benefits and risks, elicitation and solicitation of questions or concerns, and cardiologist's recommendation. The content of the discussions regarding risk and benefit varied substantially.

Directed Qualitative Content Analysis

The directed analysis revealed 5 major categories and associated subcategories of potential contributors to patients' understanding of angiogram and PCI benefits: (1) rationale for recommending angiogram and PCI; (2) discussion of angiogram and PCI benefits; (3) discussion of angiogram and PCI risks; (4) cardiologist's communication style; and (5) patient and family member contributions to the discussion. Major categories and subcategories are described in detail below, with selected illustrative quotes. Additional quotes appear in the Box.

Category 1: Rationale for Recommending Angiogram and PCI

All cardiologists provided some explanation of why they thought angiogram and PCI were necessary and what the procedure entailed. Subcategories are described below.

Presence of Ischemia on a Stress Test—An abnormal stress test result was the most common reason for advocating for angiogram and PCI. Twenty patients (50%) did not report having angina or angina-equivalent symptoms. Of these, 11 (55%) had an angiogram and PCI scheduled. Cardiologists generally explained that the abnormal test result could be indicative of a coronary artery blockage that could be opened. One cardiologist discussed the pathophysiologic features of coronary artery disease, but others' explanations were generally limited to stating that the stress test results indicated a problem that required an angiogram to further assess.

Symptoms—While 9 patients (23%) reported having typical angina symptoms, 11 (28%) reported atypical symptoms such as fatigue, shortness of breath, and epigastric burning. The latter were offered angiogram and PCI presumably as a diagnostic procedure, during which PCI could be performed if angiographic narrowing was detected.

OMT Presented as Inferior to Procedural Intervention—Although many patients in this study were not taking statins or antiangina or antiplatelet medication, few cardiologists discussed the need for all patients with CAD to take these medications. When OMT was discussed, it was presented at the time as an inferior alternative to angiogram and PCI. For example, “And again the other option is to just use medications and not even attempt to try these other treatments and that's okay with me but I want you to know that there is an option to fix something here maybe.”

Cardiologist's Desire to Know Coronary Anatomy—Some cardiologists (4 [10%]) cited their discomfort with not knowing the patient's coronary anatomy as a reason for recommending angiogram and PCI. None assessed a patient's desire to know their anatomy; explanations of the clinical importance of angiographic findings were limited. One cardiologist expressed this discomfort while advising a patient: “...if there is a blockage, we can put a stent in and then...open it up, and keep it open....you'd have to establish that there is a blockage. So, I would feel more comfortable knowing that there is not a blockage.”

Category 2: Discussion of Angiogram and PCI Benefits

All transcripts contained discussion of angiogram and PCI benefits; discussions were categorized according to the accuracy of the description.

Accuracy of Description of Benefits—Cardiologists explicitly informed the patient that PCI might improve angina symptoms but would not reduce the risk of death or MI in only 2 of the encounters (5%).

In 5 encounters (13%), explicit overstatements of the benefits of PCI were made. For example, one cardiologist recommended PCI to prevent an MI in the future: “If you don't

look, you won't know if you're a candidate to do something to prevent a problem like a heart attack or sudden death down the line.”

Implicit Overstatement of Angiogram and PCI Benefits—Implicit suggestions that the benefits of angiogram and PCI were not limited to angina relief were common and included references to fixing a problem (14 of 40 [35%]), reducing the pathophysiologic features of CAD to a plumbing issue (17 of 40 [43%]), use of loss-framed messaging (6 of 40 [15%]), and presentation of angiogram and PCI as something that must be done (6 of 40 [15%]) without a clear description of the anticipated benefits.

Many cardiologists indicated that angiogram and PCI could fix the problem of angiographic narrowing, but were less clear about what effect “opening” the artery would have: “...the most commonest problem is blockages. So, my next thought...is whether we should repeat the cardiac catheterization...with the intent of fixing a problem if there is a problem.”

Similarly, cardiologists used plumbing analogies to describe the problem and its solution, with terms such as “Roto Rooter” and “clearing blocked pipes.” Patients may have understood that opening the vessel would “fix” the problem.

Implicit overstatement of benefit was sometimes coupled with loss-framed messaging. For example, while advocating for angiogram and PCI for a reluctant patient, a physician described the left anterior descending artery as “the widow maker” and raised a concern about sudden death, without explicitly stating that the patient's anatomy was currently unknown and the procedure was not expected to prevent death: “I'd give you 3 choices. One is to just watch. I don't advise that just because I don't want the widow maker to, uh, are you married?”

Some physicians also presented angiogram and PCI as something that must be done, without specifying why.

Category 3: Discussion of Angiogram and PCI Risks

We identified 3 subcategories related to cardiologists' discussion of risk that might affect patients' perception of benefit.

Many cardiologists offered limited discussion of risks. When mentioned, risks were often briefly summarized or mentioned as part of a description of what to expect the day of the procedure. For example, one cardiologist discussed the risk of renal failure by telling patients they could expect to get intravenous fluids the day of the angiogram and PCI so their “kidneys wouldn't get hurt,” and another only explained risk in relation to the rationale for performing angiogram and PCI on separate days. No cardiologists explained what renal failure is or the absolute risk for an individual: “we don't like to give that much dye right away, because that can hurt your kidney...so we do it in 2 stages...”

Quantification of risk was uncommon, and when offered, it was most often described in nonnumerical terms such as “rare,” generally downplaying risk. For example, one physician responded to a patient's desire to hear about potential risks by reassuring the patient: “...it's

an extremely safe test and it gives us such important information that the benefit of doing the test far outweighs any risk.”

Physicians made statements that emphasized their personal comfort with performing PCI without detailing the risks. When one patient expressed concern, the physician responded: “Oh, don't worry about that. I've been doing it [angiogram/PCI] for 8 years...[I] trained at a big institution.”

Category 4: Cardiologists' Communication Styles

A patient's level of participation in angiogram and PCI discussions may affect their understanding of benefits and risks. We identified cardiologists' communication styles that might discourage or encourage patient participation.

Communication styles that may discourage participation in decision making were found in 30 encounters (75%). Subcategories included use of technical language, not listening to the patient, and assumptions about patient knowledge. Technical language examples included “bruit,” “anatomic lesion,” “distal vessel,” “occlusion,” “circumflex,” “infarct,” “pretest likelihood,” “sutured,” “ejection fraction,” “anterior septal defect,” “ischemia,” and “arrhythmias.” Some patients appeared confused by technical language; after one cardiologist described his interpretation of the patient's stress test results in terms of “pretest likelihood,” the patient asked, “So this is considered heart disease?”

Examples of cardiologists not listening to the patient included interrupting, ignoring questions, asking a question then not waiting for a patient's response, dismissing a patient's concern, and disagreeing with a patient's statement of values.

Cardiologists in this study appeared to assume that patients with a history of PCI had full understanding of the procedure without assessing understanding. These discussions were limited to scheduling. For example, “And we'll get you set up for this angiogram. Now, you've had one done before, so you kind of know the drill.”

Examples of communication styles that may encourage participation in decision making were found in 14 encounters (35%). One subcategory was checking for understanding. Although cardiologists regularly asked, “Any questions?,” none used recommended methods for checking for understanding such as teach-back.¹⁷ Cardiologists periodically offered supportive responses, such as acknowledging patient concerns, emotional distress, or values; expressing concern for patient's health or well-being; and acknowledging the complexity of the decision. Some cardiologists also used humor and tried to connect personally with the patient. Finally, some cardiologists provided additional information to the patient using written materials or ancillary staff.

Category 5: Patient and Family Member Contributions to Discussion

Few patients asked detailed questions. Those who did generally received a fuller explanation of benefits, risks, and alternatives. For some patients, efforts made by the cardiologist to encourage participation in the discussion did not improve patient engagement in the discussion.

Most patients' questions related to scheduling or technical elements of the angiogram and PCI. The presence of a family member generally resulted in more questions asked and prompting of the patient for values and preferences.

Discussion

In this qualitative content analysis of discussions between patients and cardiologists about angiogram and PCI for patients with stable CAD, we found evidence that cardiologists may contribute to patients' misperceptions of benefit through explicit or implicit overstatement of benefits, understatement of risks, and communication styles that may hinder patient understanding and/or participation in decision making. Although we also found examples of accurate descriptions of benefit and communication styles that facilitate patient understanding, these were less common.

Most cardiologists (95%) in this sample did not inform the patient that PCI would not lower their risk of death or MI, or that the symptom benefit is gone after 5 years.² In the absence of an explicit statement that benefits are limited to early reduction of angina symptoms, patients may conclude that “opening” a narrowed artery may prevent an MI. Patients' decisions to pursue angiogram and PCI in the absence of angina may be influenced by the cardiologists' implicit or explicit description of benefit, as noted in these encounters. We also found that cardiologists in this sample downplayed the risks of the procedure and provided little explicit information about risk. Studies of the adequacy of information exchange for procedures are mixed. In one study,¹⁸ surgeons provided adequate information about a procedure's risk, benefits, and alternatives, but did not respond to patients questions well. Another study¹⁹ found that cardiologists' communication regarding implantable cardiac defibrillators was characterized by unclear representation and omission of information, and a study²⁰ of information provided following surgery for gastrointestinal cancer found incomplete exchange, particularly for patients receiving palliative care. Given the importance of information exchange in shared decision making, this finding highlights a critical area to assess further.

Although it is not possible to know why some cardiologists' in this study explicitly or implicitly suggested that PCI would prevent MI, it is possible that they did not yet know the results of the Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial,^{2,16,21} or that they may have believed that the COURAGE trial findings did not apply to that particular patient. Even those who believed the COURAGE trial results may have still recommended the procedure to eliminate ischemia. An observational sub study of the COURAGE trial found that a reduction in ischemia (with or without PCI) was associated with a lower risk of MI²²; this may contribute to targeting ischemia reduction. However, a subsequent analysis of COURAGE, published after these conversations took place, showed no reduction in MI with PCI, regardless of baseline ischemia.²³ If cardiologists are not aware of the limitations of PCI in treating stable CAD, then further education might encourage them to present this evidence to patients. Current reimbursement favors procedures over medication and lifestyle change, and it is possible that reimbursement may influence physicians' recommendations.²⁴

The recent focus on patient-centered medical homes and the creation of the Patient-Centered Outcomes Research Institute as part of the Patient Protection and Affordable Care Act has increased appreciation of patient-centered care.²⁵⁻²⁷ Optimizing communication between patients, family members, and clinical teams is necessary to achieve this goal.^{11,28-33} Because the value of symptom relief varies among patients, the decision to pursue angiogram and PCI for stable CAD should be sensitive to patient preference.^{26,27,34-37} The American Medical Association and its Joint Commission assert that ensuring that patients understand the risks and benefits of PCI may reduce overuse in health care.³⁸ Although we found examples of communication styles that enhance communication (eg, supportive responses, making a personal connection, and information sharing), we found many more examples of communication styles that limit patient understanding (eg, use of technical terms and/or jargon, interrupting, and limited assessment of understanding).³⁹ Improvements in cardiologists' communication about benefits are likely needed to achieve optimal understanding and shared decision making.⁴⁰

Patients and family members in this study were usually passive participants, but those who did take an active role appeared to experience a greater exchange of information. Whether such information exchange leads to more informed patients requires further study. Physician dominance may explain, in part, why patients in this study were passive.⁴¹ Use of decision aids can promote shared decision making, and such aids exist for deciding about PCI for stable angina.⁴² However, these decision aids are used infrequently.⁴³

This study has limitations. First, although our results suggest that some cardiologists' explanations of angiogram and PCI may contribute to misperception of benefits, this study was not designed to determine this association. Further studies that include assessment of patient understanding and decision making related to the information provided by cardiologists are needed. Second, we were unable to clearly discern, for some encounters, whether the physicians' comments pertained to angiogram, PCI, or coronary artery bypass grafting. Although this may have meant that we misattributed some comments about PCI benefit, patients probably experienced a similar lack of clarity. Finally, informed consent can be an iterative process, and it is possible that more detailed and accurate presentations of benefit occurred during subsequent unobserved encounters; however, no transcripts clearly indicated additional visits were planned prior to the angiogram and PCI.

Conclusions

This study reveals that some cardiologists overstated the benefits of angiogram and PCI implicitly or explicitly. Further quantitative study of how patients' decisions regarding angiogram and PCI are affected by physician communication of benefits, risks, and alternatives is warranted. If physicians contribute to patients' misperceptions of benefits, then interventions that use standard informed consent documents⁴⁴ and patient decision aids^{30,31,45,46} may improve patients' understanding and enable them to make decisions that are fully informed and consistent with their preferences, values, and goals.

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Box**Selected Quotes****1. Rationale for Recommending Angiogram and PCI**

Presence of ischemia on stress test

“Let's just look at your stress test because...the heart function at rest doing nothing was fine, but when I gave you that medicine to mimic exercise, the heart function went down a little bit...”

“...as we discussed before, the stress test was abnormal...and that indicates there could be a reduction of blood flow to the heart.”

Symptoms

“...I'm a little concerned that he's getting more short of breath. You hadn't expressed that before.”

“...so because of the worsening shortness of breath...we are going to proceed with heart catheterization...”

“...so...when you walk you have... to slow down whenever you have...pain or short of breath?”

Cardiologist's preference for coronary angiogram and PCI

I don't have strong feelings, but I want to do something because I'm not happy sitting and not knowing for sure.”

“...it's a fairly straightforward procedure. I would guess you'd probably feel better if it is opened up.”

OMT is an inferior alternative to coronary angiogram and PCI

“I can't tell you without doing the angiogram. So you know that's perhaps may be the better way to look at it [compared to OMT].”

“They [medications] will not get rid of the blockage.”

“So, you know, it would be nice to, to open that up...with the procedure...if you don't want to...you could probably do okay with the medicines...you'd probably feel better if...it was opened up [with procedure].”

Cardiologist's discomfort with not knowing the coronary anatomy

“...I think it's more dangerous not to do anything because we need to find out [the coronary anatomy].”

2. Discussion of Angiogram and PCI Benefit

Accurate

“And, in general, if you open up the blockages, people have less angina than with medications alone. But the long term, the death rate, and everything else is the same. People have this misconception if they get a stent, they're going to live longer. That's not true. The main thing stents do is they prevent symptoms.”

Explicit inaccurate

Cardiologist: “If you don't do it [angiogram/PCI], what could happen? Well, you could infarct or have a heart attack involving that area which can lead to a sudden death potentially or at the very least could damage more of the heart as you go into worse heart failure because the heart muscle is pretty weak already.”

Patient: “I thought, well what are we going to do, just let me have a heart attack [if I don't have the procedure].”

Cardiologist: “No, I know that sounds strange and unusual.”

Implicit inaccurate

Fixing the problem

“So that's...where we start thinking well maybe we better we better try to fix that [blockage].”

Plumbing analogies

“...sometimes we can also use...a Roto Rooter...it drills through the plaque...and then there's a suction device that sucks out the calcium. It's like a vacuum cleaner.”

Loss-framed messaging

“And the next one might be the fatal one or might be the one that leaves you so impaired that quality of life is dramatically diminished. You know?”

“So if you lose another wall of the heart [if you don't have procedure], you know that could be either fatal or leave you severely disabled from that.”

Must be done

“I think it's a no brainer; I think you should have a catheterization.”

3. Discussion of Angiogram and PCI Risks

Limited discussion

“Risks are bleeding, pain, stroke, and heart attack during the procedure. Those are rare complications. I think in your case it's riskier not to do anything and, hopefully, we'll be able to fix the problem.”

Minimization

“Fortunately, never had it [heart attack, stroke or death] happen to us.”

“Not a big deal, may...sound like a big deal to you, but not a big deal, because it is a procedure that we do routinely.”

Nonnumeric description of risks

“In a very small amount of cases, it can cause heart attacks, stroke, or death.”

4. Cardiologists' Communication Styles

May discourage patient participation in discussion

Technical language

“I suspect that he's got an occlusion of the graft that goes to the circumflex.”

“Do you ever get arrhythmias, like a palpitation feeling?”

“...because you had the bruit on the other side.”

Blaming patient

“Just because the contrast that we are going to give you... could cause problems with your creatinine and your BUN...?”

“...usually, they [radiology] tell me [results of stress test]. But you never called to find out the results either.”

Dismisses patient concern

“Oh come on, it wasn't that bad.”

Sarcasm

“So she's [patient's daughter] just going to sit there and let you make the decision?”

May encourage patient participation in discussion

Empathy

“Okay, that's probably one of the reasons you're petrified.”

“What do you do [for work]?”

Effort to connect personally

“What's your nickname?”

Humor

Patient: “But I'm no doctor.”

Cardiologist: “I'm glad you're not or I'd be out of business.”

5. Patient and Family Member Contributions to Discussion

Questions primarily about process

“They do the same procedure in one day?”

“Do you feel any pain?”

“When do you want to do the angiogram?”

Family member advocated for patient

Cardiologist to patient: “So you've got to physically get it [prior angiogram report] from his office.”

Family member to cardiologist: “You can't get the report from [name of cardiologist] on the angiogram?”

Abbreviations: BUN, blood urea nitrogen; OMT, optimal medical therapy; PCI, percutaneous coronary intervention.

Table
Indications for Coronary Angiogram and PCI

Symptom	No. (%) ^a
Typical angina	9 (23)
Fatigue or shortness of breath	8 (20)
Atypical chest pain	3 (8)
Abnormal stress test results	24 (60)
Preoperative state	4 (10)
Other or unclear	4 (10)

Abbreviation: PCI, percutaneous coronary intervention.

^aPercentage may not total 100 because some patients had more than 1 indication.

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