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Peri-Procedural Antithrombotic Management from a Patient Perspective: A Qualitative Analysis

Jennifer Acosta, MPH¹, Christopher Graves, BA², Elizabeth Spranger, BA³, Jacob Kurlander, MD, MSc^{4,5}, Anne E. Sales, PhD, RN⁶, and Geoffrey D Barnes, MD, MSc^{1,2}

¹Center for Bioethics and Social Science in Medicine, University of Michigan, Ann Arbor, MI

²Frankel Cardiovascular Center, University of Michigan, Ann Arbor, MI

³Performance Improvement, Department of Internal Medicine, University of Michigan, Ann Arbor, MI

⁴Division of Gastroenterology, Department of Internal Medicine, University of Michigan, Ann Arbor, MI

⁵Veterans Affairs Ann Arbor Health Care System, Ann Arbor, MI

⁶Center for Clinical Management Research, VA Ann Arbor Healthcare System; Department of Learning Health Sciences, University of Michigan Medical School, Ann Arbor, MI

Abstract

Background—Peri-procedural antithrombotic medication management is a complex, often confusing process for patients and their providers. Communication difficulties often lead to suboptimal medication management resulting in delayed or cancelled procedures.

Methods—We conducted telephone surveys with patients taking chronic antithrombotic medications who had recently undergone an endoscopy procedure. In the survey, we sought to better understand the peri-procedural process for patients taking antithrombotic medications. We conducted a content analysis of patients' unstructured responses from the peri-procedural patient phone calls. We used a multi-step group coding process to analyze responses. Relationships between different themes and categories were analyzed using original quotes and retrieving thematic segments from the transcripts.

Corresponding Author: Geoffrey D Barnes, MD, MSc, 2800 Plymouth Rd, B14 G214, Ann Arbor, MI 48109-2800, 734-763-0047 (phone), 734-647-3301 (fax), gbarnes@umich.edu.

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Results—The survey was administered to 81 patients. 74/81 (91%) of respondents said they understood the plan to manage their antithrombotic, but 21/81 (26%) of respondents were not completely satisfied with the coordination, communication, and management of their medications. Five primary themes emerged from the content analysis as patient-centered design features affecting peri-procedural care: (1) patients require accurate and timely information; (2) a patient's prior experience with antithrombotic therapy affects their understanding of the process; (3) patients prefer receiving their information from a single source, and also prefer (4) different methods of instruction; (5) finally, patients expect their clinician(s) to be available through the peri-procedural management process.

Conclusion—To optimize the peri-procedural medication management communication process, patients desire timeliness, accuracy, and adaptiveness to prior patient experience while offering a single, consistently available point of contact.

Keywords

Anticoagulation; Antithrombotics; Patient-Provider Communication; Perioperative

Background

Antithrombotic medications, including anticoagulants (e.g. warfarin) and antiplatelets (e.g. clopidogrel), are commonly used for a wide variety of cardiovascular conditions. Management of antithrombotic medications before procedures, such as gastrointestinal (GI) endoscopy, is a complex and often confusing process for both patients and providers. Challenges can arise from communication difficulties and lack of understanding patients' communication needs at these times.^{1,2} Additionally, each antithrombotic agent has unique properties that affect how it must be managed periprocedurally.

Clinical guidelines and quality measures, including those for the management of atrial fibrillation, have emphasized the importance of incorporating patient preferences into their medication decision-making.⁶ They specifically outline the importance of educating patients to empower them to take an active role in shared-decision making in their medication management. Similarly, patients often have preferences about how medical instructions are communicated, including various in person, audio, or written forms. However, there is sparse literature on specific patient preferences and methods to providing periprocedural antithrombotic management.

Effective patient-provider communication can help prevent medication errors and cancelled procedures with stopping antithrombotic prior to invasive procedures.^{4,7} To better understand how patients view the management of their antithrombotic medication, we conducted semi-structured interviews with patients by telephone to assess their satisfaction with their medication management after undergoing an endoscopic procedure. By combining qualitative themes and survey data, our goal was to better understand how to design a patient-centered model for peri-procedural antithrombotic management.

Methods:

Study Design and Subject Recruitment

We used an Electronic Medical Record (EMR) reporting tool to identify all patients undergoing outpatient, elective GI endoscopy with recent (<30 day) use of an oral anticoagulant (warfarin, apixaban, dabigatran, edoxaban, or rivaroxaban) or P2Y12 inhibitor antiplatelet medication (clopidogrel, prasugrel, or ticagrelor). Patients were excluded if they underwent inpatient or emergent GI endoscopy or were unable to be contacted within 72 hours following their GI endoscopy procedure. The interviews were done over a three month period. The study was conducted at University of Michigan, a large academic medical center that includes one hospital-based and three ambulatory endoscopy centers.

Data were collected by the research team using a structured survey. In the survey, we sought to better understand the process for patients taking antithrombotic medication who are preparing to undergo an endoscopic procedure. Patients and occasionally their caregivers were asked structured interview questions by a single interviewer (JA) and answers were recorded on the online survey platform. Any further descriptions, thoughts, or explanations provided by the patient were recorded in online survey comment boxes associated with each question.

Additional open-ended questions were asked of the patients and the interviewer recorded their responses on the online survey platform. The survey instrument is provided in the online appendix. Telephone calls were not recorded but the research team entered information into the survey form as accurately and completely as possible during the telephone interview. Although the interviews were not audio recorded, the interviewer documented detailed notes during the phone calls.

This project was reviewed and deemed exempt from regulation by the University of Michigan institutional review board (HUM00122279).

Qualitative Analysis

We conducted a content analysis of patients' unstructured responses from the peri-procedural patient phone calls. We used a multi-step group coding process to analyze responses. Open coding was used rather than using a pre-determined coding guide. The qualitative analysis team (JA and CG) exported the qualitative responses from the survey and came to a consensus on major themes (overseen by GDB). Once all the open ended responses were coded, the project team came back together to identify relationships between codes and additional common themes throughout the responses. All qualitative data were managed in MaxQDA18 (Berlin, Germany).

Relationships between different themes and categories were analyzed using original quotes and by retrieving thematic segments from the unstructured responses. The qualitative analysis was informed by the Tailored Implementation for Chronic Disease (TICD) Framework.⁸ The qualitative analysis team used three guideline patient factors from the framework, a) patient needs, b) patient beliefs, and c) patient preferences. These determinants were coded into the existing codebook, which led the team to develop a

conceptual model displaying the outcomes of ideal patient-centered designed features. This model focuses on how to centralize treatment in the peri-procedural antithrombotic management process (Figure 1). Exemplar quotes for each theme are presented.

Quantitative Analysis

The survey used skip patterns to minimize the number of questions any single respondent had to complete by only asking relevant questions. Descriptive statistics were calculated using Microsoft Excel (Redman, Washington).

Results

We administered the survey to 81 patients, averaging 10 minutes to complete. 74/81 (91%) of respondents stated they understood the plan to manage their antithrombotic medications. A smaller number of patients, 21/81 (26%), reported some or complete dissatisfaction with the coordination, communication, and management of their medications. Five primary themes emerged from the qualitative content analysis as patient-centered design features affecting peri-procedural medication management. As summarized in Figure 1, these were:

- (1) patients require accurate and timely information;
- (2) a patients' prior experience with antithrombotic therapy affects their understanding of the process;
- (3) patients prefer receiving their information from a single source, and also prefer
- (4) multiple methods of instruction;
- (5) patients expect one of their clinicians to be available during the peri-procedural medication management process.

Accurate and Timely Information

The first theme to emerge from the qualitative analysis was that patients require timely information. Several interviewees indicated that they had no problem understanding their peri-procedural instructions, but they did not receive them in time for their procedure.

"It was a very round about, and [an] unnecessarily long way to get the prescription. On top of that, it was very last minute."

Others indicated that they felt they would have liked instructions delivered at least two weeks before their procedure in order to allow them to address any questions they might think of.

"Docs ... expected the patient to know when to stop his Plavix, and what kind of prep to take, etc. My husband mentioned that the instructions should be provided weeks earlier."
(wife of patient)

Single Information Source

Survey respondents indicated that a range of different providers gave them information of periprocedural medication management (Figure 2). Many interviewees indicated that having a single accountable provider would be helpful.

“I would like to receive the information from one provider and not have to go back and forth between clinics and my PCP.”

“My GI doc and the anticoag clinic both gave me confusing instructions, which led to a ton of time wasted. The GI clinic told me to stop my warfarin, while the anticoag clinic told me to use Lovenox”

Prior Experience

Of the surveyed participants, 52/81 (64%) had previous experience with temporarily stopping their antithrombotic medication for a surgery or procedure. Many interviewees stated that this prior experience helped them to better understand the peri-procedural antithrombotic medication instructions they were given.

“Well, I’ve been on Xarelto for about six years, so I understand when to stop my medication before a procedure.”

However, this was not always the case. In certain circumstances, patients may make assumptions about their peri-procedural strategy based on what has happened in the past. This creates confusion given the nuanced nature of these instructions.

“I have had procedures before where I’ve had to stop my Plavix. For the colonoscopy, I had scheduled I figured I needed to stop my Plavix. When I arrived that day for the procedure the hospital staff told me I actually didn’t have to stop my Plavix but they did not cancel the procedure. I thought it would be the same as it was for my EGD.”

Methods of instruction

The methods used to instruct patients during the peri-procedural period vary widely (Table 1). Many larger anticoagulation clinics tend to give instructions over the phone, while instructions given by physicians tend to be in-person at the patient’s clinic visit, or via a mailed letter. Interviewees indicated a wide variety of preferences of how they prefer to receive these instructions.

“I was very satisfied with the management of my warfarin and really appreciated that my doctor gave me instructions in person, and he wrote down the instructions too.”

“The whole process was very clear. The GI nurse wrote down all of the info for me. I also got a phone call which was also helpful and reinforced my knowledge.”

Clinician Availability

Patients frequently expressed dissatisfaction with the availability of their clinician to answer questions regarding their peri-procedural management. Sometimes this was influenced by not having a single information source:

“It was just such a hassle to find someone to prescribe the bridge. I called three separate doctors, all who said, “call your other doctor to have them prescribe it. It was a very round about, and unnecessarily long way to get the prescription.”

In general, patients who used an anticoagulation clinic had more positive experiences regarding the involvement of their anticoagulation nurse or pharmacist. For patients managed by a physician and not an anticoagulation clinic frequently reported difficulty getting in touch with their provider. While few interviewed patients had experience with both types of management, one patient reported that communication and understanding seems to be better since he started working with the anticoagulation clinic to manage his medication.

Discussion

Literature surrounding patient-provider communication for periprocedural medication has not been robustly discussed. Much of the existing literature has focused on medication adherence and patient-provider communication⁹, as well as cultural barriers to discussions around medication management.^{10,11} This pointed to a need for a comprehensive model that addresses communication barriers beyond language and adherence in the periprocedural period.

In this study of patients on chronic antithrombotic medications who underwent GI endoscopy procedures, key factors affecting patient satisfaction with the communication and coordination of their peri-procedural medication management emerged. These factors included the timeliness of the information, clinician availability, and the ability to get information from a single source, and were affected by patient’s preferred method of instruction and prior experience with peri-procedural management. These findings were reflected in both the multiple-choice survey questions and the open-ended responses.

While our study cohort was limited to patients who underwent endoscopy procedures, these findings can likely be applied to other procedures that require antithrombotic bridging. Although the exact instructions given to patients will differ in accordance with guidelines and medical protocols, broadly speaking, patients were satisfied with their comprehension of the instructions they are given. Patient dissatisfaction occurs when the coordination is not timely, available, or digestible for patients based on their experience and preferences. These factors are not unique to peri-endoscopic antithrombotic management. Indeed, these considerations could be applied outside of peri-procedural bridging. Whenever medications are started, stopped, or otherwise changed, it is a confusing time for patients. Taking into account their perspectives, and taking the time to explain can make this transition easier, safer, and more effective.

Our research has a number of strengths and limitations. This study adds an often-overlooked perspective to consider when developing care processes for peri-procedural antithrombotic medication management. A few limitations are important to mention as well. First, while every effort was made to enroll a diverse cohort, this study was limited to a single institution and therefore, the study population was limited to the surrounding community. It reflects the healthcare delivery of this single institution (e.g. phone-based instead of face-to-face anticoagulation clinic model). This may affect the generalizability of our findings. Second, as with all observational research, we are unable to comment on causality. By pairing quantitative findings with qualitative findings, we strengthen the likely association between our key findings. Finally, while audio recordings of the interviews were not obtained, the interviewer documented detailed notes during the phone calls.

In summary, while peri-procedural care models for antithrombotic therapy have been well-developed around medical protocols and clinical best practice guidelines, institutions infrequently take into account patient-centered design features in these models. Instructing patients on a topic as complex and nuanced as peri-procedural antithrombotic management is no doubt challenging, but there are several things institutions can do to improve communication and understanding with their patients. Care can be improved by ensuring the timely delivery of instruction to patients, factoring in patient's prior experience, understanding, and preferences, and ensuring a single provider group which is available to help manage the peri-procedural process. A care process that takes into account both medical protocols as well as these patient-centered factors has the potential to provide more streamlined, effective, and safe peri-procedural management.

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Clinical Significance:

- Medication management around the time of surgical procedures can be confusing for patients and may lead to canceled procedures if medications are mis-managed
- Peri-procedural care models for medication management can be improved by ensuring the timely delivery of instruction to patients while factoring in patient's prior experience, understanding, and preferences.
- Many patients prefer to have a single point of contact for all peri-procedural questions, including how to manage medications

Figure 1–.
Patient-centered Peri-procedural Communication Themes

- Primary care provider
- Gastroenterologist
- Cardiologist
- Anticoagulation clinic nurse or pharmacist
- Other

Figure 2:
Which provider gave you instructions on how to take your blood thinner?

Table 1:

How did you receive instructions for managing your blood thinner?

<i>Answer</i>	<i>Percent</i>	<i>n</i>
In person during my clinic visit	31%	25
On a print out from my visit (such as the “After Visit Summary”)	5%	4
From a phone call after my clinic visit	44%	35
In a mailed letter or Patient Portal message after my clinic visit	20%	17
Total		81