Cardiotwitter: New Virtual Tools to Advance Skillsets in Interventional Cardiology

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Abstract: Traditional means to stay current in cardiology have been subscription journals and both local and national symposiums. More recently, social media has facilitated a two-way interactive sharing of information. With the use of social media platforms including Twitter, case discussions, educational quizzes and procedural demonstrations can now be shared in a conversation with unlimited parties and represents an excellent interactive educational modality for the global interventional community to share procedural techniques, share opinions and stay current on topics in interventional cardiology.

Keywords: Cardiotwitter, twitter, social media, percutaneous coronary interventions, CardioQuiz, polling.

1. INTRODUCTION

Traditionally, the means to stay current in cardiology have been subscription journals and both local and national symposiums. Too often, textbooks are outdated by the time they leave the publishers warehouse, so this has been a less suitable means to stay abreast of advances in the cardiovascular field. Over the course of the past decade, time commitments, expenses and patient care responsibilities have kept many individuals from attending conferences. Yet, the content of these meetings has been rapidly disseminated by the means of social media. Since the early 2000’s, medical societies and journals have utilized the world-wide-web to expand their outreach by publishing table of contents, published articles, interviews and critiques. In the past where individuals would attend meetings to experience live case demonstrations, they can now do the same from the comfort of their office or home on their computer. The web platform has allowed for the use of images and videos for demonstration purposes that previously were not possible with the more traditional paper journal. More recently, social media has facilitated a two-way interactive sharing of information. With the use of social media platforms including Facebook, Instagram and more commonly Twitter, case discussions, educational quizzes and procedural demonstrations can now be shared in a conversation with unlimited parties. Thus, the creation of #cardiotwitter, a universe of followers discussing all-things related to cardiovascular disease. Beyond these educational conversations, twitter has, in addition, fostered a collaboration of individuals from all parts of the globe on research endeavors, the results of which may ultimately be shared on Twitter, helping in patient care.

Probably, no one in the field of cardiovascular disease has adopted the use social media more than the subspecialty of interventional cardiology. In particular, interventional cardiology has used the Twitter platform to demonstrate procedural techniques, discuss interesting cases and quiz practicing physicians and trainees as a means to educate and advance the science and skills of this subspecialty. One of the most noticeable areas involving #cardiotwitter has been the discussion and promotion of the use of the radial artery (#RadialFirst) in percutaneous coronary interventions (PCI). Following the development of balloon angioplasty by Andreas Gruetzig in 1979, the conventional means of performing angioplasty had been through the use of the femoral artery. With improvement in catheter design and lower profile balloons and coronary stents, it has become more commonplace for these procedures to be performed by the use of the radial artery. This has been driven by studies that have shown lower bleeding complications and a mortality benefit when these procedures are performed via the radial artery, particularly in the setting of an acute coronary syndrome [1-3].

In a study conducted using the American College of Cardiology (ACC) National Cardiovascular Data Registry (NCDR) CathPCI Registry data from 2004-2007, Rao et al. showed that the radial artery was only used in about 1.32 percent of PCI cases [4]. In a similar study repeated using 2008-2011 NCDR data, the U.S. radial usage rose to 16 percent [5]. In January 2017, Doctors Sunil Rao and William Suh launched the Twitter hashtag #RadialFirst as a means to share best practices, interesting cases and tips and tricks regarding the use of the radial artery in PCI. Since its incep-
tion, there have been over 70,000 tweets with the use of the #RadialFirst hashtag. Correspondingly, there has been a greater adoption of #RadialFirst and although there is no hard data to confirm a cause and effect there is the strong possibility that the interactive nature of social media has contributed significantly to this growth.

The use of social media has provided guidance regarding the adoption of the radial approach to PCI and has been described as one of the most successful global efforts in social media to promote the use of practice in interventional cardiology. The strength of the twitter platform is that it provides instant access and responses from thought leaders who have been instrumental in the development of this technique, which dates back 25 years [6]. Ferdinand Kiemeneij, MD, nicknamed the “father of radial access”, is credited with developing the first protocols for using radial access and promoting the technique. He is an active twitter user providing commentary and promoting the use of the radial artery via social media [7]. Similarly, there are many other hashtags used within the #cardiotwitter universe to bring attention to other relevant and important topics in cardiology and specifically interventional cardiology (Table 1).

Table 1. Twitter hashtag.

| Twitter Hashtag |
|-----------------|
| #RadialFirst    |
| #PCI            |
| #CTO101         |
| #TAVR           |
| #CVD            |
| #DAPT           |
| #CathLab        |
| #STEMI          |
| #TMVR           |
| #NCDR           |

2. TWITTER AS A POLLING VEHICLE

Another common use of Twitter has been to serve as a polling vehicle. An increasing number of interventional cardiologists regularly engage on Twitter utilizing the cardiotwitter hashtag to discuss numerous topics. Twitter provides a polling feature that allows users to seek opinions from an international audience beyond the confines of one’s own institution. This feature allows a user to post a question with up to four answers. Questions can be posted for up to one week with a final tally displayed at the completion of the selected time period. Users frequently post angiograms seeking opinions as to how individuals would treat an anatomical finding. The utilization of Twitter in this manner was demonstrated in a posted case report regarding the use of antiplatelet therapy in the anticoagulated patient after undergoing a complex PCI [8]. In this patient who received warfarin for mechanical aortic and mitral valves, a Twitter poll sought to seek an opinion as to how long this individual should be treated with dual antiplatelet therapy (DAPT) following a complex PCI of both the left anterior descending and left circumflex coronary arteries. Three of the four answers were each chosen by approximately 30 percent of the respondents demonstrating the lack of consensus on the treatment of this patient. (Fig. 1) This poll was widely viewed as reflected in the number of mentions and retweets and received a significant number of votes. Although the Twitter polling mechanism does not allow for the exact identification of the demographics of the respondents it was estimated the majority of respondents were individuals in the cardiovascular field.

69 yo man– St Jude MVR & AVR, EF 10%,worsening DOE,& CTO/ISR of BMS in LAD & OM. RePCI LAD&OM with DESx3. Needs anticoag. ?DAPT duration RT

DAPT~1mo then Plavix only 34%
DAPT for 3-6 months 30%
DAPT for at least 1 year 27%
Plavix only, no aspirin 9%
306 votes · Final results

Fig. (1). Initial Twitter poll from June 2017 with final voting results. The tweet had 10,346 impressions, 859 engagements and 306 votes. Three different DAPT duration options were chosen by ~30% of respondents - indicative of the lack of consensus on managing DAPT in patients on anticoagulation. Reprinted with permission from Savage MP, Fischman DL, Davis M. Antiplatelet Therapy After Complex PCI in the Anticoagulated Patient. Cardiac Interv Today. 2019; 13 (suppl 1): 22-24. (A higher resolution / colour version of this figure is available in the electronic copy of the article).

Following the initial posting of this poll, further data on the management of stented patients requiring anticoagulation were published, suggesting the safety in eliminating aspirin as part of the post-procedure antiplatelet therapy. The exact same poll was subsequently repeated more than a year and a half later. Interestingly there was shift towards shorter durations of aspirin in this patient (Fig. 2). The findings of these two polls thus reflect how change in clinical practice can occur following publications of research in a particular field.
Thus, Twitter polling is an excellent resource to test the adoption of therapies in interventional cardiology, not just procedural such as #radialfirst but also pharmacologic such as #DAPT duration. It is important to be mindful that the use of Twitter in this particular manner is simply serving as a vehicle to gauge opinions and should not necessarily serve as guidance toward a treatment strategy, nor does it necessarily reflect published guideline-directed therapy. The use of Twitter in this manner and with all matters is not without pitfalls. As a public platform, it is important that users maintain professionalism upholding the standard of care practice with patient privacy and safety in mind.

3. CardioQuiz

Alternative novel use of the Twitter polling vehicle is its adaptation as a self-assessment practice exam question (#CardioQuiz). In contrast to a conventional poll which seeks opinions, the CardioQuiz is designed to test and enhance one’s clinical fund of knowledge. This adapted use of the Twitter poll serves as a means to educate trainees by presenting cases that may include images and angiograms, thereby to provide a knowledge-based assessment and to foster a better understanding of published guideline-directed therapy. Examples of this use include the presentation of an angiogram with an anomalous coronary circulation testing the viewer on the anomaly. At the completion of the polling, the correct answer is provided often with reference to supporting documentation. These questions are often presented in a manner similar to the boards and hopefully can serve as a supplemental means of preparation for the interventional cardiology boards.

4. Tweetorial

Finally, a third mechanism by which Twitter helps to advance the knowledge and skills of the interventional cardiologists is the tweetorial. Similar to a live presentation at a conference with the use of PowerPoint slides, a tweetorial is basically a lecture on Twitter stringing together multiple tweets. Due to the 280-character limit, the tweetorial provides a means to teach and is particularly relevant to the American College of Cardiology Fellows in Training (#ACCFIT). The person posting the tweetorial generally provides a hashtag to make it readily easy to follow this presentation. As with other interactive tweets, one can use links, polls, images and short videos. An example of this was a tweetorial presented at TCT on a complex internal mammary artery intervention, which included angiographic images and a discussion referencing the literature [9]. In response to this tweetorial came the following comments from Mirvat Anastag, MD: What makes an ideal tweetorial? 1) Relevant topic selection 2) Brevity of explanations 3) Clarity of explanations 4) Organization of points to make it easy to follow and 5) Examples to emphasize the take-home message.

CONCLUSION

In summary, Twitter represents an excellent interactive educational modality for the global interventional community to share procedural techniques, share opinions and stay current on topics in interventional cardiology.

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CONFLICT OF INTEREST

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