ADVANCES IN IBD

Current Developments in the Treatment of Inflammatory Bowel Disease

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The Use of Mobile Applications in the Management of Patients With Inflammatory Bowel Disease

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G&H Currently, how common is the use of mobile applications for managing inflammatory bowel disease?

MH The use of mobile applications to manage inflammatory bowel disease (IBD) is not yet commonplace in IBD practices, although IBD researchers and practitioners are developing these tools to allow for better monitoring of their patients and to improve compliance. There has been a gradual increase in the use of these tools, mostly coming from the patients themselves. Patients are looking for new ways to take control of their disease, and mobile applications designed for the management of IBD hold promise to help patients achieve this goal. Thus, I expect the use of mobile applications to continue to grow in the future.

Providers also see mobile applications as a tool to better manage their patients and take advantage of technology and the time that so many patients spend on their smartphones. However, despite the desire on both sides to use these tools, adoption in routine clinical practice has been slow to date.

G&H With which mobile applications for IBD are you most familiar?

MH I am familiar with an application that the Crohn's and Colitis Center at Brigham and Women's Hospital has designed for at-risk IBD patients as well as the application designed through the Crohn's and Colitis Foundation (GI Buddy). My patients have also used GI Monitor (WellApps) and My IBD Manager (American Gastroenterological Association). In addition, I have consulted with Portal Instruments on a comprehensive mobile application for IBD and am currently consulting with Oshi Health to further develop its all-in-one IBD management application (Oshi).

G&H What types of features do these tools include?

MH Most of the IBD applications have tracking capability to log symptoms, food intake, and overall quality of life. Newer applications, such as Oshi, also allow for tracking of sleep, exercise, and stress, and enable syncing of devices. Some applications have reminders for medications and tests, and some have information and resources for patients about various aspects of IBD and health. A smaller proportion of these contain evidence-based resources and even the ability to pose questions to IBD experts.

G&H How should patients choose which of the various applications to use?

MH I have found that patients are most interested in diet information, determining what they can eat, and reading up-to-date material that allows them to learn about their IBD so that they can ultimately manage their disease more effectively. In general, an application that has enough to help with the patient's IBD management while keeping the patient highly engaged in his or her health is probably the best tool.

G&H Overall, what are the benefits of using mobile applications for the management of IBD?

MH The biggest benefit is that patients feel empowered. They can work on aspects of their health each day that

will ultimately help them attain and sustain remission. Another benefit is improved communication between the provider and the patient. Although instant messaging is not yet a part of digital applications, increased information gleaned from tracking over weeks and months allows the provider to make more informed assessments to help guide medical treatment. For example, Oshi can display the inputted data for symptoms, stress, diet, and sleep in graphs over time and can calculate symptom and wellness scores over the time period so that the provider can obtain a quick overall idea of how the patient is doing. Other benefits of mobile IBD applications include increased compliance with medications and healthy lifestyle recommendations.

G&H How can the patient data being collected in these applications help gastroenterologists devise more personalized therapeutic recommendations?

MH Patient-reported outcomes are an important concept and are increasingly being collected in IBD research. The best data are based on well-described cohorts of patients with IBD, rather than generalizations regarding all IBD patients. Thus, applications that are able to categorize patients as having a particular type of IBD will be most helpful to the patient-reported data that are being collected. Providers will then be able to characterize subsets of patients more effectively who may respond to different treatments. For example, patients with stricturing types of Crohn's disease who report abdominal pain as their main symptom may be shown to not benefit from medical therapies, and surgical options may be more appropriate.

G&H Has there been any research on the effects of using mobile applications for IBD management?

MH In 2016, an Australian group published an article reviewing the 26 applications that were available at that time to manage IBD, and discussed the various features of the applications as well as the limitations of individual applications, such as the lack of evidence-based information or the lack of a health care expert to review content. At this year's Digestive Disease Week meeting, researchers from Mount Sinai and the University of Pittsburgh presented findings from a randomized, controlled trial of patients using their HealthPROMISE application. The application tracks patient data such as gastrointestinal symptoms, stress levels, and the presence of anxiety or depression, and this information is reviewed in real time by a coordinator who may then share it with the patient's provider. The tool was found to significantly improve overall IBD clinical outcomes, including quality of care

and quality of life. Full publication of these findings is eagerly awaited.

G&H Have you seen effects on quality of life or outcomes in your patients who use mobile applications?

MH I have not yet seen quality-of-life effects using IBD mobile applications, as I do not have, at this time, sufficient patient follow-up. However, I have seen benefits using digital tools such as Fitbits for exercise and nutrition applications for weight loss. I believe that an all-in-one application for the management of IBD such as Oshi will only have a beneficial impact on the quality of life for its users.

G&H In which patient subgroups do these applications appear to be the most useful?

MH On the provider side, mobile applications are effective at engaging high-risk patients who would benefit from closer monitoring of their symptoms and other health parameters, such as diet, stress, sleep, and exercise. On the patient side, patients who are taking their medications and, in general, doing what their provider has asked but are still experiencing symptoms may also benefit from the use of these tools. These patients may learn new ways to manage their IBD and improve upon what they are already doing.

G&H Do you recommend mobile applications only to high-risk patients or to all of your IBD patients?

MH I currently recommend mobile applications to higher-risk patients who I would like to monitor more closely. Many of these patients also need help with medication compliance and could benefit from having general health and educational resources. Currently, I have been recommending Oshi, the application with which I am now most familiar and which has all of these capabilities. With time, I suspect that I will be recommending the use of mobile applications to all of my IBD patients.

G&H Are there any downsides or limitations to the use of mobile applications?

MH The biggest concern with regard to mobile applications for IBD management is the validity of the information provided. The available content may not be reviewed by health care experts and the articles offering treatment advice may not be evidence-based. Therefore, applications should state where their information came from and who reviewed it. In addition, any sharing of patient information must be done in a secure manner compliant with

the Health Insurance Portability and Accountability Act. Applications that offer the ability for patients to interact with each other are potentially problematic in that patients with one type of IBD may recommend treatments to others who have a very different form of IBD. IBD is very heterogeneous, so what works for one patient will not necessarily work for others and may even be harmful.

G&H What barriers or difficulties may be encountered when trying to incorporate mobile applications in patient management?

MH Patients need to have access to the applications and the skills required to utilize them correctly. Furthermore, patients need to use the applications long term so that the tracking of their information may be meaningful to providers. Providers must be familiar with the applications and have the confidence that these tools will help with patient management so that they routinely recommend the tools to their patients.

G&H Is long-term adherence to these tools a challenge?

MH This is another drawback of mobile applications. Patients need to be enticed to continue to use them. I believe that adherence may be improved if patients know that the tracking that they are doing is positively impacting their treatment. Patients should know that the more data collected about their IBD and health over time, the better this information can assist their provider with IBD management. In addition, using the application on a regular basis will improve patient compliance with healthy decisions relating to diet, exercise, and sleep, which will help with overall wellness. Also, if a patient is deemed to be in remission and doing well while using an application, it is possible that in-person visits could be spaced out more, especially if the application were to allow communication between the provider and the patient.

Other ways to keep patients engaged may include providing updated and interesting reading materials, the ability to interact with providers and other patients, and forms of encouragement from providers and other patients.

G&H In your experience, how has patient reception been to the introduction and use of IBD mobile applications?

MH For the most part, my younger patients, who are used to using their smartphones for everything, are willing to try mobile applications. Older patients are sometimes reluctant to try new technology and may see

the application as a burden and another task that they have to do for their health.

G&H How has the reception been from gastroenterologists regarding the incorporation of mobile applications in their management of patients?

MH I think that gastroenterologists, for the most part, are receptive to mobile applications to manage IBD. We are aware that patients increasingly want empowerment, and we have witnessed, for years, patients reading about their symptoms on the Internet. Patients want to try new diets or exercises to improve their symptoms and health. Because smartphones are omnipresent, it makes sense to harness their capabilities to empower patients while satisfying our own desire on the provider side to improve care. Mobile applications for the management of IBD will be used by patients, so we need to be familiar with them and to be able to give advice on which ones are best for our patients.

G&H What are the next steps in this area?

MH We need to continue to ensure that content on mobile applications is reliable and evidence-based and that patient data are secure. Applications that offer the ability for patients to communicate new symptoms or changes in symptoms to their providers will directly impact treatment. Mobile applications that provide positive encouragement in various forms, potentially from other patients, will keep people using these tools. These features are currently available on existing overall health mobile applications, but not for the management of IBD. We also need more studies evaluating whether the use of IBD mobile applications affects clinical outcomes. Data from such research would help us to refine features on these tools and to learn which provide the highest yield for patient wellness and engagement.

Suggested Reading

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