When the concept of artificial intelligence, big data, and machine learning was first advanced, many dermatologists were naysayers. Some even feared machines could one day replace dermatologists if algorithms were savvy enough. Fast forward several years, and we are now learning to appreciate AI—sometimes called augmented intelligence—and looking forward to its many potential applications.

New research in last month’s issue of *Journal of Drugs in Dermatology* backs up this change of heart. I recently sat down with study author Vishal Patel, MD, assistant professor of dermatology at the George Washington University School of Medicine and Health Sciences and director of cutaneous oncology at the GW Cancer Center in Washington, DC, to discuss the results of the new survey, which found that close to 95 percent of dermatologists are open to incorporating AI into their practices. Here’s what he had to say about the future of AI in dermatology.

Were you surprised by your findings?

Vishal Patel, MD: There were many surprising findings, particularly about how many physicians are open to using AI in various forms in their practices. While most of our survey respondents have not used AI, many embrace the potential positive benefits, such as reducing misdiagnoses, managing electronic medical records, or assisting with medical research. Very surprisingly, nearly all respondents (94.5 percent) would use AI in at least certain scenarios, highlighting that most physicians agree AI is an important part of the future of medicine.

Do you use AI in your practice? If so, how?

Dr. Patel: I use AI in a variety of forms, from medical image reference and unknown lesion diagnostic support to gene expression profiling of skin lesions. I currently am working with a company called LazarusAI for the development of a disruptive, smartphone-based, user-friendly, diagnostic clinical decision support application that utilizes AI and machine learning to allow physicians to quickly assess a lesion with an app and obtain concrete data to help decide if a lesion needs further evaluation or can be conservatively monitored.

What role do you see AI playing in practice in the future?

Dr. Patel: I think AI will help physicians practice medicine that is smarter, faster, and more accurate. It is very early in this technology field, so I do not think there is one definitive product or way to use it, but I think understanding what AI can do and how to use it will improve our ability to avoid errors and more accurately practice evidence-based medicine.

Any obstacles to its more widespread adoption in dermatology?

Dr. Patel: As with any new technology, we need to go through a period of early adoption, rigorous evaluation and testing, improvement, and then widespread adoption. We are still in the early periods of AI development in dermatology. One valid area of criticism has been around the inaccuracy of AI in patients of different ethnicities or skin tones. This highlights the fact that we still have a way to go to accurately train AI with the correct input datasets and documented outcomes so it performs as we expect it to. Furthermore, for AI to be truly useful in dermatology, we need it to match the form and function of the typical practice, which is high volume and fast-paced. Just like with the current capabilities of smartphones, it will take time for AI to get to the level that it will truly help and not hinder the average clinician.

In the past, some people feared that machine learning could replace doctors. Is this fear realistic?

Dr. Patel: I like to use the analogy of the modern jumbo jet. Twenty to 40 years ago, airplanes had a very different technical requirement of the pilot. Nowadays, the airplane

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is safer, faster, and more efficient at getting passengers from point A to B. But most importantly, pilots are still an important element of air travel. The average plane flight needs less than 10 minutes of critical pilot-directed attention—generally during takeoff and landing. This does not mean the pilot is not needed during the flight, but rather, the AI of the plane has been developed to help the pilot focus on the most important parts or when something seems to be off. Either way, the pilot is still needed and in the same way, AI will not replace doctors. It will only make us smarter, more efficient, and more accurate in our diagnoses and treatment plans. Doctors are critical to interpret the data provided by AI and help personalize it to the patient in front of them.

**AI is sometimes called Augmented Intelligence. Which name do you prefer and why?**

**Dr. Patel:** AI provides data utilizing a complex mathematical model. Physicians are highly trained experts who have a knowledge base of a disease process as well as the ability to interpret and process the data provided by AI. The combination of the two creates an augmented intelligence that is superior to either individual piece. Thus, I agree that augmented intelligence is a better name for what the future of this technology really means. It is diagnostic support for the physician’s knowledge and experience. Just like we saw a change of individual physician expertise and experience moving to evidence-based practice, we will soon see a move from evidence-based practice to augmented intelligence that combines physician expertise and experience, evidence-based data, and AI diagnostic support.

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