Dermatologists find telemedicine effective for patient care

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UC Davis Health System dermatologists, using videoconferencing technology known as teledemedicine, have determined that live interactive consultations can improve clinical outcomes for patients because they usually involve beneficial changes in medical diagnosis and disease management that otherwise might not occur.

The findings appear in the current issue of the *Archives of Dermatology*, one of the JAMA/Archives journals, which was published this week.

April Armstrong, the study's senior author and a UC Davis assistant professor of dermatology, said she and her team wanted to investigate the efficacy of live video consultations to provide patient care from a distance.

"Telemedicine for dermatology patients is a great tool in dermatology because skin conditions can be readily examined in digital still or video images," said Armstrong, who also serves as director of the health system's teledermatology program. "We measured the differences in diagnosis, disease management and clinical outcomes and found that patient care was usually enhanced by specialty consultations via telemedicine. It enables us to bridge the big care gap for those people who don't have easy or convenient access to a dermatologist."

UC Davis researchers say telemedicine is experiencing increased use in geographically distant regions and other medically underserved communities. Telemedicine in dermatology includes image files that are

saved and forwarded to a dermatologist for review (known as "store-and-forward") at any time. The other method is live, interactive video sessions that enable real-time conversation among patients, referring physicians and specialists. These interactive sessions have the advantage of allowing instant clarification about a patient's health history as well as allowing a specialist to immediately capture additional digital images if more clinical information is needed.

"Live interactive technology is nearly equivalent to physically being in the room with a patient," said Armstrong. "It enables us to see the skin problems, and we can have real-time discussions with patients and their providers as if we were in the room together. Our study confirms that it is an effective tool to improve patient outcomes."

The UC Davis research team conducted a retrospective analysis of medical records for 1,500 patients who were evaluated using live interactive teledermatology between 2003 and 2005. The authors compared diagnoses and treatment plans between the referring physician and the teledermatologists. Patients with two or more teledermatology visits within a one-year period were assessed for changes in clinical outcomes.

Compared with diagnoses and treatment plans from the referring physician alone, the 1,500 teledermatology consultations resulted in diagnostic changes for nearly 70 percent of patients. Those changes in diagnoses included identifying benign lesions where malignant ones had been diagnosed by a primary-care provider, and diagnosing a malignancy for diseases such as basal cell carcinoma after an initial, primary-care diagnosis of benign cell growth.

The consultations also resulted in nearly every single patient (97.7 percent) receiving recommendations via teledermatology to change the way patients managed their skin diseases. Those changes included

dermatologist recommendations to begin or end a medication, to modify the dosage or delivery of a medication, and to undergo additional laboratory tests or cultures.

Armstrong's team found that the live consultations likely resulted in improved diagnostic accuracy and more effective treatment plans. Patients receiving a changed diagnosis had better chances of clinical improvements compared to patients whose diagnoses remained unchanged. Each additional teledermatology follow-up visit was associated with better odds of improved clinical outcomes.

"Our study found real and beneficial differences in the vast majority of teledermatology cases we analyzed," said Armstrong. "With rapid improvements in interactive mobile platforms, connectivity speed and visual clarity, telehealth services like dermatology will play a bigger and bigger role in improving the quality of care and the access to specialty services that people deserve no matter where they live."

More information: "Impact of Live Interactive Teledermatology on Diagnosis, Disease Management and Clinical Outcomes" - http://archderm.ama-assn.org/cgi/content/short/148/1/61

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