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Title

Non-inferiority comparison of on-site dermatologic diagnosis by residents versus remote, asynchronous diagnosis by faculty

Priority 1 (Research Category)

Evaluation of diagnostic or screening test

Presenters

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Abstract

Context: Telemedicine is proving to be a cost-effective alternative to in-person visits. It can bypass the need for referrals, improve accessibility in remote areas, and facilitate information exchange between clinicians. The accuracy of teledermatology diagnosis is not well established, and there is a paucity of literature on the use of teledermatology in a generalized patient setting.

Objective: To compare the diagnostic accuracy of dermatologic lesions between on-site residents and remote, asynchronous faculty.

Study Design and Analysis: A single-blinded prospective comparative trial was performed. Four Dermatology residents from the University of São Paulo (USP) provided care to a remote population in Iguape, Brazil through a joint effort between USP and the Unidade Mista de Saúde. Residents documented each patient's medical history, examined the dermatological lesion(s), and made a clinical diagnosis. After obtaining patient consent, image(s) of the lesions were also captured using digital cameras. The history, image, and diagnosis for each patient were assigned a random identifier number and uploaded to a USP server. USP dermatology faculty (blinded to resident diagnosis) reviewed each patient's history and image(s) and made an independent diagnosis. Diagnoses were then compared. Diagnoses were considered the same if they were either identical or if the difference was not clinically significant, as determined by independent faculty review. (E.g., a diagnosis of "acne" was considered the same as a diagnosis of, "acne vulgaris.") Concordance was measured as the percentage of resident and faculty diagnoses that matched.

Setting: Rural outpatient clinic

Population Studied: Patients living in the greater Iguape, Brazil catchment area.

Intervention: Dermatologic assessment.

Outcome Measures: Percent concordance between on-site resident diagnosis and remote, asynchronous faculty diagnosis.

Results: Of 126 patients evaluated, 86.5% of on-site diagnoses by residents were the same as those of remote, asynchronous diagnoses by faculty (73.0% identical, 13.5% clinically insignificant difference.)

Expected Outcomes: On-site resident diagnosis of dermatologic lesions is comparable to that of remote, asynchronous diagnosis by faculty. Asynchronous teledermatology consultation using a brief history and high-quality image may be used to expand dermatology capacity in remote areas.