Teledermatología
Revisión sistemática y evaluación económica

Teledermatology. Systematic review and economic assessment.

Executive summary.
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Executive Abstract

Background
In dermatology, the decision-making process is based on the clinical information provided by the patient together with the morphological description of the cutaneous lesions. Accessibility to target organ of dermatology to get and transfer a graphic registry of a disease through technology currently available (digital photograph, internet) has allowed that many telemedicine applications are developed in dermatology. In this sense, there are teledermatology applications aimed at the skin cancer patient’s managing and making decisions, managing chronic ulcer patients, remote diagnosis and treatment of patients having generalised dermatoses, teleconsultation among medical specialists, as well as teleconsultation expert medical specialists in specific areas of knowledge, etc. These experiences in teledermatology made easy, in many cases, that healthcare problems are resolved in fields where medical specialists’ availability or specific geographic factors hinder to provide the proper care. Moreover teledermatology has proved to play a role in areas where neither distance nor specialists’ availability involve critical factors for patient’s care.

Objectives
The general objective of this study was to know about the clinical utility of teledermatology. The specific objectives were: 1) Estimating validity and diagnostic reliability of teledermatology. 2) Evaluating its clinical effectiveness by using different result measures. 3) Assessing ongoing results on economic and satisfaction experiences.

Methodology
A systematic review of literature on teledermatology was conducted by including papers that met the following inclusion criteria: study design (meta-analysis, randomised controlled trials, case control studies, case series with n≥35, transversal studies, other diagnostic study designs, economic studies), intervention (store-and-forward teledermatology, real-time teledermatology, mobile-phone teledermatology, teledermatoscopy) study population (patients cared through any method and application of teledermatology or health professionals using some of the methods or applications mentioned above) and results (clinical effectiveness, or as healthcare methodology, reliability, validity, economic result and satisfaction scores). The assessment of methodological quality of the papers that had been selected was carried out by applying accepted and validated checklists specific for each kind
of study and developed by CASPe programme (Critical Appraisal Skills Programme, in Spanish, www.redcaspe.org). To allocate level of evidence and grade of recommendation, the results from the systematic review were applied rating systems that were accepted and validated depending on the type of study reviewed following the advices of Scottish Intercollegiate Guidelines Network (SIGN system).

Results
A total amount of 32 papers out of 60 ones that had been retrieved from the search were included in the end. Observational studies predominated over the rest followed by randomized controlled and quasi-experimental trials. Store-and-forward teledermatology was the predominant method in teledermatology. In these studies, the aspect assessed most related to teledermatology was its validity as diagnostic tool, followed by economic assessment, reliability, and clinical effectiveness. Among the clinical applications of teledermatology, the use of teledermatology predominated as consultation means in general dermatology, followed by teleconsultation on suspicious lesions of skin cancer, teleconsultation in chronic ulcers specialized clinics and teledermatoscopy. The results from the systematic review were described according to result measures that had been studied for each of the applications of teledermatology, with the purpose of facilitating its interpretation and adapting the results to the clinical scope from where they were obtained.

The cost-effectiveness analysis conducted on two healthcare alternatives to treat lesions suspicious of melanoma showed the traditional healthcare system is a strategy dominated by teledermatoscopy system. In this sense, the latter is less expensive and more effective.

The univariate sensitivity analysis realised in prevalence, sensitivity and specificity rates and in TD costs with negative diagnostics did not change the results. However, threshold points were identified in the costs from which face-to-face dermatoscopy strategy stopped being dominated. The thresholds were: 129.10€ for face-to-face dermatoscopy with positive diagnostics; 112.08€ in face-to-face dermatoscopy with negative diagnostics; and 210.58€ in TD with positive diagnostics.

Conclusions
The results from this systematic review recommend introducing real-time or store-and-forward teledermatology systems as tool to reduce delays in caring and unnecessary doctor visits in general dermatology clinics, as well as in visits devoted to an only specialty (skin cancer, ulcers, etc.).

There should be conducted study further the barriers related to implantation from the point of view of healthcare decision-makers.