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Diagnostic accuracy of reflectance confocal microscopy using VivaScope for detecting and monitoring skin lesions: a systematic review.

Edwards SJ, Osei-Assibey G, Patalay R, Wakefield V, Karner C. *Clin Exp Dermatol.* 2017 Feb 20. doi: 10.1111/ced.13055.

ABSTRACT

BACKGROUND: Skin cancer is one of the most common cancers in the UK. Patients with suspicious skin lesions are assessed clinically with/without dermoscopy, and lesions still considered suspicious are then surgically removed or have the diagnosis confirmed by a punch biopsy. **AIM:** To evaluate the diagnostic accuracy of the in vivo VivaScope® reflective confocal microscopy (RCM) system, a noninvasive technology designed to provide a more accurate presurgical diagnosis, leading to fewer biopsies of benign lesions, or to provide greater accuracy for lesion margins. **METHODS:** MEDLINE, EMBASE and the Cochrane Library were searched to identify studies evaluating dermoscopy plus RCM, or RCM alone, with histopathology as the reference test. Clinical experts were also contacted for information on unpublished studies. **RESULTS:** Eleven studies met the inclusion criteria but were too heterogeneous to be combined by meta-analysis. Results indicated that VivaScope subsequent to dermoscopy may improve diagnostic accuracy of malignant melanomas compared with dermoscopy. For margin delineation, the data suggest that mapping using VivaScope 1500 for lentigo maligna (LM) and LM melanoma may improve accuracy in terms of complete excision of lesions compared with dermoscopically determined margins. For basal cell carcinoma, the limited data show high diagnostic accuracy with both VivaScope 1500 and VivaScope 3000. Evidence on the effectiveness of VivaScope in diagnosing cutaneous squamous cell carcinomas was very limited. **CONCLUSION:** The use of VivaScope 1500 following dermoscopy may improve patient care and management of suspicious skin lesions, although the generalizability of these results to the UK population remains unclear. © 2017 British Association of Dermatologists. PMID:28218469
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