Dermoscopy for melanoma detection in family practice

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CRD summary
This review concluded that dermoscopy has been shown to be a useful and fairly inexpensive tool for melanoma detection in family practice. The included studies consistently demonstrated improved sensitivity with dermoscopy compared with naked eye examination but potential for missed studies and the unknown quality of the included studies mean that the author's conclusion may not be reliable.

Authors' objectives
To assess the diagnostic accuracy and clinical utility of dermoscopy for the detection of melanoma in family practice.

Searching
MEDLINE, EMBASE, PubMed and the Cochrane databases were searched. Search terms were reported. Search dates were not reported.

Study selection
Primary studies of dermoscopy used by family physicians were eligible for inclusion. Studies of dermoscopy used by dermatologists were not eligible for inclusion. The outcome of interest was diagnostic accuracy and clinical utility for the detection of melanoma.

In the included studies the physicians were mostly primary care physicians all of whom were dermoscopy nonusers. In half of the studies, family physicians examined actual patients in clinic using a dermatoscope. The reference standard test in these studies was evaluation by dermoscopy experts with biopsies of suspicious lesions. In the other studies family physicians assessed images of lesions. The reference standard test was histopathological diagnosis of lesions in one study and images of known melanoma and non-melanoma lesions in the other. Most of the studies used the Menzies method as the dermoscopy algorithm (one of which also used a seven-point checklist, the ABCD rule and pattern analysis) and one study used a three-point checklist.

The author did not state how many reviewers selected studies for inclusion.

Assessment of study quality
The author did not state that study quality was assessed but stated that the randomised controlled trials (RCTs) were well executed.

Data extraction
Sensitivity, specificity, positive and negative predictive values and positive and negative likelihood ratios were extracted from studies or calculated using available data. The author did not state how many reviewers undertook data extraction.

Methods of synthesis
Ranges of values for sensitivity, specificity, predictive values and likelihood ratios were reported.

Results of the review
Four studies were included in the review, including two randomised controlled trials (RCTs). The total number of participants was not stated but the total number of lesions assessed was 3,050 between the four trials. Blinding was not feasible in any of the studies.

Clinical studies: Melanoma prevalence ranged from 0.5% to 9% and all malignant tumours (melanoma, squamous cell carcinoma and basal cell carcinoma) prevalence ranged from 3.6% to 11%. Sensitivity ranged from 40% to 54% with the naked eye (compared with 55% to 79% with dermoscopy) for detecting all malignant tumours. One of the studies also reported diagnostic accuracy for melanoma, which was 38% with the naked eye and 53% with dermoscopy. Specificity was similar between the naked eye and dermoscopy, ranging from 71% to 85% with the naked eye and 72% to 89% with dermoscopy.
Image studies: Melanoma prevalence was 50% in both studies. Sensitivity ranged from 55% to 61% with the naked eye compared with 68% to 85% with dermoscopy (depending on the dermoscopy algorithm used) for detecting melanoma. Specificity was 85% with the naked eye and between 73% and 85% with dermoscopy (depending on the dermoscopy algorithm used); only one of the studies assessed specificity.

Authors’ conclusions
Dermoscopy has been shown to be a useful and fairly inexpensive tool for melanoma detection in family practice.

CRD commentary
The review question and inclusion criteria were clear. The author searched relevant databases but the date of the search was not reported, it was not reported whether language restrictions were applied and limited attempts were made to identify unpublished studies so some relevant studies may have been missed. The author did not report how many reviewers undertook study selection or data extraction so reviewer error and bias cannot be ruled out. The author did not state that studies were assessed for validity, therefore, the reliability of the results of the included studies is unclear. Two of the included studies were conducted on patients seen in practice and in two studies images of lesions were assessed. The results for the different study types have been separated in this abstract but in the review the results were not reported separately, which may not have been appropriate given the differences in study design and prevalence between the clinical studies and the studies using images of lesions. The included studies consistently demonstrated improved sensitivity with dermoscopy compared with naked eye examination. However, in view of the potential for missed studies and unknown quality of the included studies, the author’s conclusion may not be reliable.

Implications of the review for practice and research
Practice: The author stated that dermoscopy has been shown to be a useful tool for melanoma in family practice, especially in examining patients at high risk of melanoma, as the current Canadian clinical practice guideline recommends yearly screening in these individuals. Family physicians can use dermoscopic algorithms comfortably after a short training program.

Research: The author did not make any recommendations for further research.

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Record Status
This is a systematic review that meets the criteria for inclusion on DARE.