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Comparison of dermoscopy and reflectance confocal microscopy for the diagnosis of malignant skin tumours: a meta-analysis.

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ABSTRACT

PURPOSE: Dermoscopy and reflectance confocal microscopy (RCM) are non-invasive methods for diagnosis of malignant skin tumours. The aim of this study was to compare the accuracy of dermoscopy and RCM for the diagnosis of malignant skin tumours. **METHODS:** Systematic electronic literature searches were conducted to include PubMed, Medline, Embase, the Cochrane Library database, and Web of Science, up to 26 April 2016. Pooled additional detection rate (ADR), diagnostic accuracy, and 95% confidence intervals (CIs) were calculated using STATA and Meta-Disc analysis. **RESULTS:** Eight published studies were included in the analysis, involving 1141 skin lesions, which reported a per-lesion analysis of dermoscopy and RCM. Within the same patient group and at the per-lesion level, RCM significantly increased the detection rate of malignant skin tumours by 7.7% (95% CI 0.01-0.14). The pooled sensitivity of dermoscopy was similar to RCM [88.1% (95% CI 0.85-0.91) vs. 93.5% (95% CI 0.91-0.96)]. The specificity of dermoscopy was significantly lower than that of RCM [52.9% (95% CI 0.49-0.57) vs. 80.3% (95% CI 0.77-0.83)]. The pooled ADR of RCM for melanoma detection was 4.3% (95% CI 0.002-0.08). Pooled sensitivity and specificity of dermoscopy for melanoma detection were 88.4% (95% CI 0.84-0.92) and 49.1% (95% CI 0.45-0.53), respectively. The pooled sensitivity and specificity of RCM were 93.5% (95% CI 0.90-0.96) and 78.8% (95% CI 0.75-0.82), respectively. **CONCLUSIONS:** When compared with dermoscopy, RCM has a significantly greater diagnostic specificity for malignant skin tumours and so could improve their detection rate. **KEYWORDS:** Dermoscopy; Melanoma; Meta-analysis; Reflectance confocal microscopy; Skin cancer PMID:28289898
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