Melanoma

Improving diagnosis in general practice

Jon Emery

Australia is the world capital of melanoma and despite our best efforts to 'slip-slop-slap' the incidence of melanoma continues to rise. In 2007, 10 342 Australians were diagnosed with melanoma and 1279 people died from the disease.[1]

About half of melanomas are first noticed by the patient and consultations about moles are relatively common in general practice. Early detection and treatment of thin melanomas is associated with better survival, but diagnosing melanoma in its early stages can be challenging. While several studies have shown that Australian general practitioners have high sensitivity and specificity for diagnosing nonmelanoma skin cancer, they have also demonstrated the difficulties distinguishing melanoma from other common pigmented skin lesions. Youl et al's[2] study comparing the diagnostic performance of GPs and primary care skin cancer clinic doctors in Queensland showed that both groups excised approximately 20 pigmented skin lesions for each melanoma diagnosed. In this study GPs showed a sensitivity to detect melanoma of 29%.

So the challenge GPs face is to identify early melanomas while managing patient anxiety and not breaking the Medicare budget through excising large numbers of benign lesions. There has been considerable interest in various methods to improve GPs' ability to diagnose melanoma including the use of diagnostic checklists, such as 'ABCD' (Asymmetry, Border irregularity, Colour variation and large Diameter [>6 mm]), and the '7-point checklist', and a range of imaging devices.

Dermoscopy uses a hand-held magnifying device coupled with application of a liquid between the skin and the transparent plate of the dermatoscope. It allows visualisation of diagnostic features that cannot be observed with the naked eye. Several studies, mainly conducted in dermatology settings, have shown that dermoscopy can improve the diagnostic accuracy for melanoma.[3] Dermoscopy can be combined with short term sequential digital imaging (SSDI) in which dermoscopic images are stored and comparisons made over 2–4 months. The absence of change over that time period is a strong predictor that the lesion is benign.

In collaboration with the Sydney Melanoma Diagnostic Centre, the School of Primary, Aboriginal and Rural Health Care at the University of Western Australia, ran a trial involving 102 Perth GPs to examine the effect of using dermoscopy and SSDI on the management of pigmented skin lesions. Using these techniques reduced excisions or referrals for pigmented skin lesions by 56% while maintaining 97% sensitivity to detect melanoma.[4] This is fairly convincing evidence that these imaging methods are potentially worth using in general practice. However, the GPs in this study spent 10–20 hours of online learning to develop expertise in interpreting dermoscopy and only 62% of GPs in the study actually used the devices.

We have therefore been interested in other diagnostic aids that require less time to learn. One such technique applies SIAscopy, a hand-held device which shines different wavelengths of light through the skin and identifies the location of collagen, melanin and dermal blood in the epidermis and dermis. A series of images for each lesion is produced which can be used to identify diagnostic features associated with melanoma and other common skin lesions. We have collaborated with researchers at Cambridge University to assess the clinical utility of SIAscopy for general practice. We have shown that Australian GPs can learn to interpret SIAscopic images within 2 hours using an online learning module. In a validation study run in Perth and Cambridge, we found that a primary care algorithm to assess SIAscopic images has good diagnostic accuracy for melanoma with an 'area-under-the-curve' of 83%.[5]

The Molemate trial is a randomised controlled trial run in East England in which patients presenting in general practice have been allocated to have their pigmented skin lesion assessed either with SIAscopy or the 7-point checklist. Initial analyses suggest that SIAscopy performed very well, identifying all melanomas but at the expense of poorer specificity.

We aim to publish the full results of this trial later this year, which could have important implications for how we might improve the diagnosis of melanoma in general practice.

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Conflict of interest: none declared.

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