

**Abstract:**

Epiluminescence microscopy (ELM) is a non invasive technique used to enhance visualization of microscopic structures of pigmented lesions for the early detection of melanoma. The 7 point check list is a diagnostic method that requires the identification of only seven dermoscopic criteria, defining the image through the use of algorithms. This paper describes an experimental automated diagnosis set up of melanocytic skin lesions through an image processing methodology focused on finding the presence of different epiluminescence parameters. In this paper the image processing set up allows the automatic detection of some specific dermoscopic criteria. We analyze the blue whitish veil, the regression, and the irregular streaks. The procedure developed was tested by considering a set of about 200 ELM images. A good concordance between ELM 7 point checklist parameters detected and the new method of image processing was achieved by kappa analysis. Although ELM doesn't substitute histological evaluation, it could be a reliable instrument to enhance clinical accuracy of skin pigmented lesions diagnosis.