Detection of exudates on color fundus images using texture based feature extraction

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Abstrak

World Health Organisation (WHO) has predicted 300 million peoples will suffer of diabetic in 2025. Long-term diabetics can lead to diabetic retinopathy that can cause blindness in developing countries. One of the abnormalities of diabetic retinopathy is exudate. Exudates are classified into two categories, i.e. hard and soft exudates. This paper proposes feature extraction based on texture for distinguishing hard, soft and non-exudates. The green channel of the original images is enhanced by CLAHE and followed by median filtering and thresholding in red channel to detect and remove the optic disc. The enhanced image is segmented based on clustering to obtain the region of interest of exudates. Feature extraction based on texture is conducted by using GLCM and lacunarity. Results show that classification based on NaïveBayes algorithm achieves accuracy, specificity and sensitivity of 92.13%, 96% and 87.18%, respectively.