



Agreement between quantitative analysis of fundus and angiographic images by photoshop software and clinical judgment

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Purpose:

To evaluate the agreement between a new method for quantitative analysis of fundus and angiographic images using Photoshop software and clinical judgment.

Methods:

418 fundus and angiographic images of diabetic patients were evaluated by three retina specialists and then by computer using Photoshop 7.0 software. Four variables were selected for comparison: amount of hard exudates (HE) on color and red free pictures, severity of leakage and size of foveal avascular zone (FAZ). Available programs in the software, such as color selection, luminosity channel, and histogram and tools such as magnetic lasso and magic wand were used for measurement. Coefficients of agreement and Kappa measurements (K) were calculated.

Results:

Agreement between the two methods in the amount of HE on color and red free photographs and severity of leakage were 85% (K=0.69), 79% (K=0.59) and 72% (K=0.46) respectively. Agreement in FAZ size with two methods of quantification using the magic and lasso software tools was 54% (K=0.09) and 89% (K=0.77) respectively. Agreement in estimation of FAZ size by lasso magnetic tool and hard exudates on color pictures was perfect; correlation was almost good in the quantification of hard exudates on red free images and the amount of leakage. However, there was no accordance in FAZ size evaluation by the magic wand tool.

Conclusion:

Quantitative measurement of variables on fundus and angiographic images such as hard exudates, leakage, and FAZ can be performed precisely using Photoshop software.

Take- home message:

Graphic software is useful for quantitative analysis of retinal photographs in research programs and patient management.