Sir,

Statistical analysis of agreement in measurement comparison studies

We read the article by Musadiq *et al*[1] with great interest. The authors compare linear dimensions on fundus photographs between digital and photographic film systems. The authors state that due to high correlation coefficients between both measurements, bias was negligible for software correctly set at 35° field. However, while a high correlation between the two methods makes random operator-error bias unlikely, it cannot account for any systematic (nonrandom) bias occurring.

In comparing agreement between two methods of measurement, one would expect a random scattering of data between the upper and lower 'limits of agreement' ($\pm$2 SD).[2,3] However, both Figures 2 and 3 reveal an almost perfect linear increase in the discrepancy between the two measurement methods with increasing distance measured that could be described using a linear regression model. Rather than this representing a mere 'tendency of the measurements to be less accurate with increasing distances measured' as the authors state, this reveals a systematic measurement bias in the authors' study, with digital measurements overestimating the standard photographic measurements by a fixed percentage of the distance measured. This does not reveal agreement between the two methods, but merely association.

In addition, the authors have incorrectly plotted the 'limits of agreement' method as referred to in their text.[2] This graphical method plots the difference between the two methods against the *mean* value of the two methods. It is a mistake to plot the difference against either value separately as the authors have, because the difference will be related to each value, a well-known statistical artefact.[4]

This study highlights the inherent dangers of using correlation in assessing agreement between methods of measurement, a fact strongly emphasised by the statistical papers the authors refer to,[2,3] as well as others.[5] These methodological errors bring into question the authors' conclusions.

References

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Sir,

Microscopic polyangitis presenting with sub-acute reversible optic neuropathy

Microscopic polyangitis (MPA) is a systemic necrotizing nongranulomatous vasculitis that affects small blood vessels. Clinical features are frequently constitutional symptoms like fever, anorexia, weight loss, fatigue, and renal failure. In all, 100% of patients have haematurea and proteinurea. Rapidly progressive glomerulonephritis may occur.[1,2]

Lung involvement manifests with cough, pleurisy, dyspnea, and haemoptysis. Other features like arthralgia, arthritis, purpura, GIT symptoms, and ocular involvement are rare. We report a case of MPA presenting with an optic neuropathy.

An 80-year-old woman was referred to University Hospital Eye Department, with painless deterioration of vision in the right eye over 4 weeks. She reported fatigue and mild hearing impairment. Headaches and jaw claudication were absent and there were no other symptoms to suggest giant cell arteritis.

She had a history of mild asthma, a long-standing history of mild sinusitis, osteoarthritis, and recent onset of urinary tract infection treated with trimethoprim for 1 week.

At presentation, visual acuity was hand movement in the right eye and 6/6 in the left eye with correction.

Anterior segment examination was normal except for a right relative afferent pupillary defect. Other aspects of her ocular examination were normal, in particular both optic discs were pink and normal in appearance (see Figure 1).