

## Correspondence

### **Evaluation of the effectiveness of diagnostic & management decision by teleophthalmology for retinal diseases**

Sir,

Gupta *et al*<sup>1</sup> reported the agreement, sensitivity and specificity of diagnosis and management decisions of various eye diseases by teleophthalmology using indigenous equipment, compared with the in-clinic assessment. We put forward our concerns and suggestions regarding results and conclusions of the study in regard to retinal diseases.

The authors used 20 degree posterior pole photography for evaluating retinal diseases. After unveiling first fundus camera with 20 degree field of view in 1926, Carl Zeiss and Co. later released a new camera with a 30 degree field of view, setting a 30 degree field as the minimum standard in ocular fundus photography. Twenty degree retinal photography used by the authors in their study<sup>1</sup> for telescreening is insufficient for retinal disease evaluation and management and drawing any conclusions thereof. Regarding mydriasis, we studied the influence of pupillary dilatation on the gradability of a single-field 45 degree digital fundus image taken in a telescreening model for diabetic retinopathy and found that pupillary dilatation reduced the nongradability of images from 29.1 to 8.6 per cent<sup>2</sup>. However, three-field nonmydriatic fundus images transmitted via satellite can be a good alternative in a country like India, where health care facilities and personnel are scarce compared with patient load<sup>3</sup>.

'Retinal diseases' is a very broad term unlike cataract or glaucoma. The authors have provided general correlation, sensitivity and specificity values for all retinal diseases. On evaluation of eyes with macular degeneration only, sensitivities of photographic evaluation and gold standard clinical examination

ranged from 89.2 per cent for presence of choroidal neovascular membrane to 40.0 per cent for presence of pigment epithelial detachment<sup>4</sup>. It would be more useful to evaluate various retinal diseases separately, to know which diseases are more amenable for agreeable results with telescreening.

The authors report only moderate level of agreement between telescreening and in-clinic assessment in the diagnosis of retinal diseases. They explain it partly by suboptimum focusing of some of the images and believe that improving the quality of optical system of indigenous teleophthalmology equipment will increase the agreement. However, it is also important to increase the field of view for adequate extent of retina to be examined. This could also be the reason for low sensitivity seen by authors in retinal disease management options. The authors also found a low specificity of teleophthalmology diagnosis for retinal diseases. The incorporation of stereoscopic imaging in the indigenous telescreening equipment can improve the specificity for retinal diseases<sup>5</sup>.

In conclusion, we believe that adopting the standard established protocols of using at least 30 degree fundus photography, preferably stereoscopic, should be performed to evaluate the effectiveness of tele screening versus in-clinic-assessment for different retinal diseases.

**Aditi Gupta, Rajiv Raman &  
Tarun Sharma\***

Shri Bhagwan Mahavir Vitreoretinal Services  
18, College Road, Sankara Nethralaya  
Chennai 600 006, India

*\*For correspondence:*  
drtaruns@gmail.com

### References

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