

Re:Utility of mobile devices in the computerized tomography evaluation of intracranial hemorrhage

Dear Sir,

We have read with great interest the recent study of Panughpath, *et al.* revealing the utility of mobile devices to detect and assess intracranial hemorrhage on head computed tomography scan performed in the emergency setting.^[1] Authors revealed a mobile device with appropriate web-based picture archiving and communication system is effective in the detection of intracranial hemorrhage present on head CT scan. In our opinion, some points about the study are not sufficiently clear.

In their study, authors compared the iPad review of head CT scans with the review on a two megapixel Dell UltraSharp™ 2007FP liquid crystal display (LCD) desktop monitor (Dell Inc.). The matrix size of this desktop monitor is not satisfactory for diagnostic imaging, and it has been suggested that the matrix size of monitors used for the interpretation of non-mammography medical images by the radiologists or where the primary treatment decision is made in the absence of an interpretative report such as in Emergency department must be at least three megapixel.^[2] Besides, it was shown that the aspect ratio of diagnostic monitor was 4:3 at table 1 in the article of Panughpath, *et al.* [Table 1]. The American College of Radiology recommends the well-suited aspect ratio (width to height) of diagnostic monitors for the presentation of radiographic images is 3:4 or 4:5.^[3]

Secondly, the authors affirmed that the iPad reviews of head CT scans were made by two radiologists independently, and the studies were reviewed on the workstation by both radiologists after one week interval. They also reported that all discordant studies were further assessed by two senior fellowships trained in neuroradiology. Nevertheless, they did not state the inter-intra observer variability of this evaluation.

In discussion section, the authors revealed that minimum contrast ratio for display device for images of non-mammography scans should be more than 50:1. This contrast ratio is not adequate for diagnostic monitors, and not fitting with the American College of Radiology recommendations.^[3] It has been suggested that the contrast ratio should be more than 600:1 for diagnostic monitors

Table 1: Of the study of panughpath *et al*

	iPad	Monitor
Maximum luminance	388 cd/m ²	300 cd/m ²
Contrast ratio	881:1	800:1
Display resolution (in pixels)	1024 × 768	1600 × 1200
Screen type	In-plane switching liquid crystal display extended graphics array, Light emitting diode backlit	LCD
Interaction method	Touch	Mouse
Screen size (diagonal)	9.7 inches	20.1 inches
Aspect ratio	4:3	4:3

LCD: Liquid crystal display

for radiologists, and more than 500:1 for medical staff and consultants (non-radiologists).^[2]

We hope that above-mentioned comments will add to the value of the article by Panughpath *et al.*

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References

1. Panughpath SG, Kumar S, Kalyanpur A. Utility of mobile devices in the computerized tomography evaluation of intracranial hemorrhage. *Indian J Radiol Imaging* 2013;23:4-7.
2. Available from: <http://www.health.qld.gov.au/qhcss/documents/monitor-specifications.pdf> [Last accessed on 2014 Jan 20].
3. ACR technical standard for electronic practice of medical imaging. Available from: http://www.acr.org/secondarymainmenucategories/quality_safety/guidelines/med_phys/electronic_practice.aspx. [Last accessed on 2014 Jan 20].

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DOI:
10.4103/0971-3026.134419