Computed and conventional chest radiography: A comparison of image quality and radiation dose

K Ramli,1 BJJ Abdullah, 1 K-H Ng,1 R Mahmud2 and AF Hussain1
1 Department of Radiology, University of Malaya, Kuala Lumpur and 2 Diagnostic Imaging Department, University Putra Malaysia, Serdang, Selangor, Malaysia

SUMMARY
The aim of this study is to compare the image quality and entrance skin dose (ESD) for film-screen and computed chest radiography. Analysis of the image quality and dose on chest radiography was carried out on a conventional x-ray unit using film-screen; storage phosphor plates and selenium drum direct chest radiography. For each receptor, ESD was measured in 60 patients using thermoluminescent dosemeters (TLD). Images were printed on 35 X 43 cm films. Image quality was assessed subjectively by evaluation of anatomic feature and estimation of the image quality, following the guidelines established by the protocols of Commission of the European Communities (CEC). There was no statistical significant difference noted between the computed and conventional images (Wilcoxon rank sum test, p>0.05). Storage phosphor and selenium drum chest radiography were better for the mediastinal and peripheral lungs structures. The patients mean ESD for chest radiography using the storage phosphor, film-screen combination and selenium drum was 0.20 mGy, 0.20 mGy and 0.25 mGy respectively with no statistical significant difference with p>0.05 (Chi-square Tests).

Key words: Commission of the European Communities: film-screen; selenium drum; storage phosphor.