

The added value of double inversion recovery (DIR) sequence compared to fluid Attenuation inversion recovery (FLAIR) in identifying Multiple Sclerosis lesions and different cortical subtypes

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Abstract

There is a rising concern about multiple sclerosis (MS) lesions that occur in the cortical gray matter (GM), owing to its direct relationship with the disability and cognition dysfunction that occur during the MS course. Two magnetic resonance imaging (MRI) sequences that aid in the precise identification of these lesions are the Double Inversion Recovery (DIR) and Fluid Attenuation Inversion Recovery (FLAIR) sequences. To study the importance of the DIR for brain lesion detection and the various cortical subtypes distinction in MS-diagnosed patients and its correlations to the level of patient disability by comparing it to FLAIR. Thirty MS patients participated in this retrospective cross-sectional study, who had been previously diagnosed with MS and were routinely followed up at the Radiology Department at Ain-Shams University. Comparing the DIR sequence to FLAIR, the overall MS lesion detection enhanced by 8% ($p < 0.001$). Regarding the detection of cortical lesion subtypes (I–IV), it was discovered that the DIR sequence revealed significantly more lesions than FLAIR ($p < 0.001$). The cortical lesions detected by DIR or FLAIR were found to have positive highly significant correlations with both patients' disability and the MS duration. For lesion identification, DIR is more effective than FLAIR, particularly for cortical and juxtacortical lesions in MS patients.

Keywords: Multiple sclerosis, FLAIR, DIR, Cortical lesions

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Diagnostic Accuracy of Contrast Enhanced Spectral Mammography in Assessment of Indeterminate Breast Lesions in Patients after Breast Conservation Surgery

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Abstract

Breast cancer in women represents a major public health problem being the most common cancer among women in both developed and developing countries, it accounts for 22.9% of all new female cancers. In Egypt breast cancer accounts for 37.7% of the total new cancer cases. Contrast Enhanced Spectral Mammography (CESM) is an emerging advanced technique that depicts breast tumor angiogenesis. CESM has higher diagnostic accuracy compared to MG with or without US and can depict tumor neovascularity in an analogue manner to breast MRI. To evaluate the diagnostic accuracy of contrast enhanced spectral digital mammography in assessment of indeterminate breast lesions in patients after breast conservation surgery. 30 female patients underwent breast conservative surgery presenting with indeterminate breast lesion on mammography had been evaluated by dual-energy contrast enhanced spectral mammography. The age ranged from 32 to 77 years (mean=50.07). Results of histopathological examinations of surgical or biopsy specimens were obtained and served as the gold standard. The surgical and pathological results of our patients revealed 23/33 (69.7%) benign lesions and 10/33 (30.3%) malignant lesions. CESM had a sensitivity of 88.9%, a specificity of 83.3%, a positive predictive value of 66.7%, a negative predictive value of 95.2%. CESM is a promising tool for increasing the sensitivity and the diagnostic accuracy of conventional mammography in follow-up of patients with breast conservative surgery.

Keywords: Breast cancer, CESM, diagnostic accuracy, breast conservation surgery, patients

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Assessment of Nursing Clinical Teachers Knowledge and Competencies of Clinical Reasoning

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Abstract

Background: Clinical reasoning (CR) is the cornerstone of an effective health professions practice in nursing. Aim: was to assess clinical teaching staff's knowledge and competencies about clinical reasoning. Method: A comparative descriptive design was used. All clinical teaching staff in Helwan University (n=71). and Suez Canal University (n=64). Two tools were used to collect data, clinical teaching staff's knowledge questionnaire and structured interview for clinical teaching staff competencies levels about clinical reasoning. Results: There were 84.5% and 78.1% of studied sample at Helwan and Suez Canal Universities had unsatisfactory knowledge regarding clinical reasoning respectively. Additionally, 50.7 % and 57.8% of the studied sample were partially competent in total clinical reasoning competencies at Helwan and Suez-Canal Universities respectively. Conclusion: There was no statistically significant difference between knowledge about clinical reasoning of the studied clinical teaching staff at Helwan and Suez- Canal Universities $p=0.45$. Also, there was no statistically significant difference between clinical reasoning competency levels of the studied clinical teaching staff at both of the studied Universities $p= 0.055$. Recommendations: Curriculum should promote reflective practice and clinical teaching staff should participate in continual professional development activities about clinical reasoning. Further studies: Conduct similar studies in other nursing institutions to explore factors that influence clinical reasoning knowledge and competencies among clinical teaching staff.

Keywords: Clinical reasoning, Clinical education, Nursing education, Competencies

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