

Whole-body magnetic resonance imaging in the assessment of pediatric patients with Hodgkin's lymphoma

Ressonância magnética de corpo inteiro na avaliação de pacientes infanto-juvenis com linfoma de Hodgkin

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Over the past few years, the development of new technologies applied to different imaging modalities has determined a considerable impact on the diagnosis, staging and treatment of neoplastic diseases. Consequently an increase has been observed in patient survival as well as in cure rates. Among neoplasms, Hodgkin's lymphomas (HL) and non-Hodgkin's lymphomas (NHL) have been highlighted, with a considerable prevalence in the pediatric population.

Malignant lymphomas correspond to approximately 5% to 6% of all malignant neoplasias, and are the fifth most frequent type of cancer in the United States⁽¹⁾. Once the definite diagnosis of HL or NHL is established by biopsy of a particular region, the disease staging is critical for treatment planning and for determining the prognosis. The role of imaging methods has been to evaluate the involvement of lymph nodes, bone marrow and organs as well as evaluating the treatment effectiveness⁽¹⁾.

Several studies have demonstrated that PET-CT presents a high accuracy both in the detection of pathological lymph nodes in patients with lymphoma, as well as in the identification of lymph nodes presenting with recurrence after chemotherapy. However, such molecular imaging method is coupled with a multi-detector tomography apparatus, utilizing ionizing radiation and requiring injection of a short half-life ra-

diopharmaceutical – FDG (¹⁸F-fluorodeoxy-2-glucose). Such glucose-analog radiopharmaceutical is produced exclusively by cyclotron units available only in large centers in our country.

The development of echo-planar sequences (EPI) and parallel acquisition techniques (SENSE), in association with recent technological developments in the field of magnetic resonance imaging (MRI) gradients, has allowed the acquisition of ultrafast diffusion images with a high *b* value. Additionally, in 2004, the development of DWIB (diffusion-weighted whole-body imaging with background body signal suppression) allowed the study of diffusion in visceral organs without breath-holding^(2,3). Such technique enables an appropriate fat suppression, acquisition of tridimensional images and improvement of whole-body screening strategies⁽³⁾.

A recent study evaluating 31 children and adolescents with lymphoma compared the performance of PET-CT and MRI utilizing the STIR technique with RARE (rapid acquisition with relaxation enhancement), and has demonstrated similar accuracy for both methods⁽⁴⁾. For this reason, many authors have advocated the use of MRI as an initial screening method for selecting individuals who should undergo PET-CT, and also as a follow-up method for patients with lymphoma.

The present issue of **Radiologia Brasileira** brings an interesting study developed by Nava et al.⁽⁵⁾, in which a considerable number of adolescents and young adults diagnosed with lymphoma (*n* = 12) were assessed by MRI using the following pulse sequences: T1 and T2 weighted, STIR and DWIBS sequences. The results of such study have confirmed findings reported in the literature, demonstrating the usefulness of MRI with STIR

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and DWIBS sequences in the diagnosis and staging of lymphomas.

Thus, we conclude that MRI, using such technique, represents an additional method that can be utilized on a nationwide basis for the evaluation and staging of lymphomas, achieving results similar to those of major international centers. Studies such as this one have enhanced the scientific character and relevance of the Brazilian radiology in the international scenario.

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