

COG Hodgkin Lymphoma Committee

Radiologists:

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Current Open Trials:

1. AHOD1331

Eligibility: Newly diagnosed high risk classic Hodgkin Lymphoma <19 years of age

Imaging Studies Required:

1. Baseline:
 - a. PA upright chest radiograph to evaluate for bulk mediastinal disease
 - b. Diagnostic contrast enhanced CT of neck, chest, abdomen, and pelvis
 - c. PET/CT
2. Post 2 cycles of chemotherapy:
 - a. PET/CT
 - b. Contrast enhanced CT neck, chest, abdomen, and pelvis unless PET/CT performed with contrast and of diagnostic quality
3. Post 5 cycles of chemotherapy:
 - a. PET/CT only if still positive after 2 cycles
 - b. Contrast enhanced CT of neck, chest, abdomen, and pelvis
 - c. MRI can replace CT for follow up once chemotherapy has been completed

Basic Technical requirements:

1. CT neck, chest, abdomen, and pelvis:
 - a. The study should be performed with intravenous contrast with the abdominal portion performed during the portal venous phase
 - b. Oral contrast should be used on the initial study and on subsequent studies if there is abdominal disease
 - c. Slice thickness 5 mm or less
 - d. Coronal and sagittal reconstructed images should be submitted as now non-mediastinal bulk disease can be measured on the cranio-caudal plane
2. PET/CT:
 - a. This should be performed with standard procedure of obtaining blood sugar, dosing, and appropriate FDG uptake phase to imaging. Weight and FDG injection dose are recorded for PET quantitation
 - b. A low dose attenuation correction CT is not acceptable for initial staging and subsequent response
 - c. Intravenous contrast can be used as the attenuation CT component of the PET/CT. This IV contrast CT can be used in place of a dedicated CT during post 2 cycle imaging

- d. Note – at this time dedicated PET/MRI will not be considered for imaging as part of this study due to need for further response assessment in Hodgkin Lymphoma

Key things to note in report:

1. Confirm staging based on location of disease involvement
2. PET positivity in 3 bony foci is consistent with bone marrow involvement even despite negative bone marrow biopsy
3. Response is on the basis of PET activity only and not decrease in mass size although masses are measured to correlate at later date
4. PET response is based on the Deauville scale –
 - a. After 2 cycles of chemotherapy Deauville 1, 2, and 3 are negative and Deauville 4 and 5 positive
 - b. After 5 cycles Deauville 1 and 2 are negative and Deauville 3, 4, and 5 are positive
5. Large Mediastinal Adenopathy (LMA) ($> 1/3$ thoracic diameter) is documented at baseline as this will be irradiated regardless of PET response
6. PET positive lesions after 2 cycles will be documented as these will receive a radiation “boost”

Relevant reading material:

1. Abramson SJ, Price AP. Imaging of Pediatric Lymphomas. Radiol Clin N Am 2008 Mar; 46(2):313-38
2. Allen-Auerbach M, deVos S, Czernin J. PET/Computed Tomography and Lymphoma. Rad Clin N Am 2013 Sept; 51(5):833-44
3. Cheson BD, Fisher RI, Barrington SF, Cavalli F, Schwartz LH, Zucca E, Lister TA. Recommendations for Initial Evaluation, Staging, and Response Assessment of Hodgkin and Non-Hodgkin Lymphoma: The Lugano Classification. J Clin Oncol 2014 Sept 32(27): 3059-68

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