

Figure S1 (A) (supplement of *Figure 3*): ^{18}F -FDG PET/CT imaging of patients (33-year-old woman) with Musculoskeletal involvement of LCH. (E,E1) Axial CT and fused image show reb lytic lesion and associated nodule with medium metabolic activity. (F,F1,F2) Axial CT (bone and soft window, fusion image) show left tibia lytic lesion with sclerosis margin and medium FDG uptake. (G,G1) Axial CT (bone window) and fused image show local hypermetabolism but no visible destruction in lumbar vertebra. (B) Images comparison of CT and PET/CT of a patients (2-year-old boy) with Musculoskeletal involvement of LCH. Axial CT (H1) showed no pathological lesions in either distal humerus. PET/CT fused image (H2) and PET MIP (H3) revealed focal FDG uptake in corresponding site, in addition, PET MIP showed multiple similar bone lesions (black arrows. Red arrows: osteolytic lesions in rib and iliac).

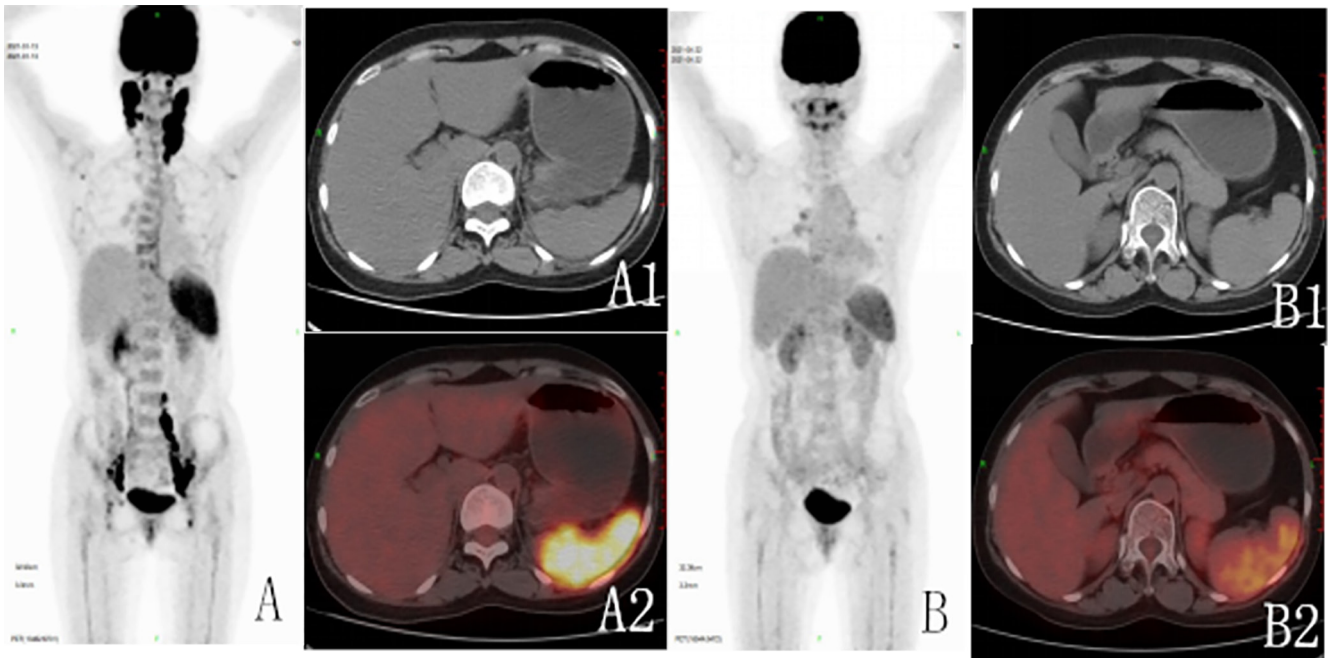


Figure S2 ^{18}F -FDG PET/CT imaging of a 35-year-old patient with lymphatic system involvement of LCH before and after treatment. (A-A2) Before treatment multiple swelling lymphadenopathy and spleen show hypermetabolism; (B-B2) cervical and basin swelling lymph nodes disappear, the metabolic activity of spleen decrease. (A,B: PET MIPs; A1,B1: Axial CTs; A2,B2: PET/CT fusion images).

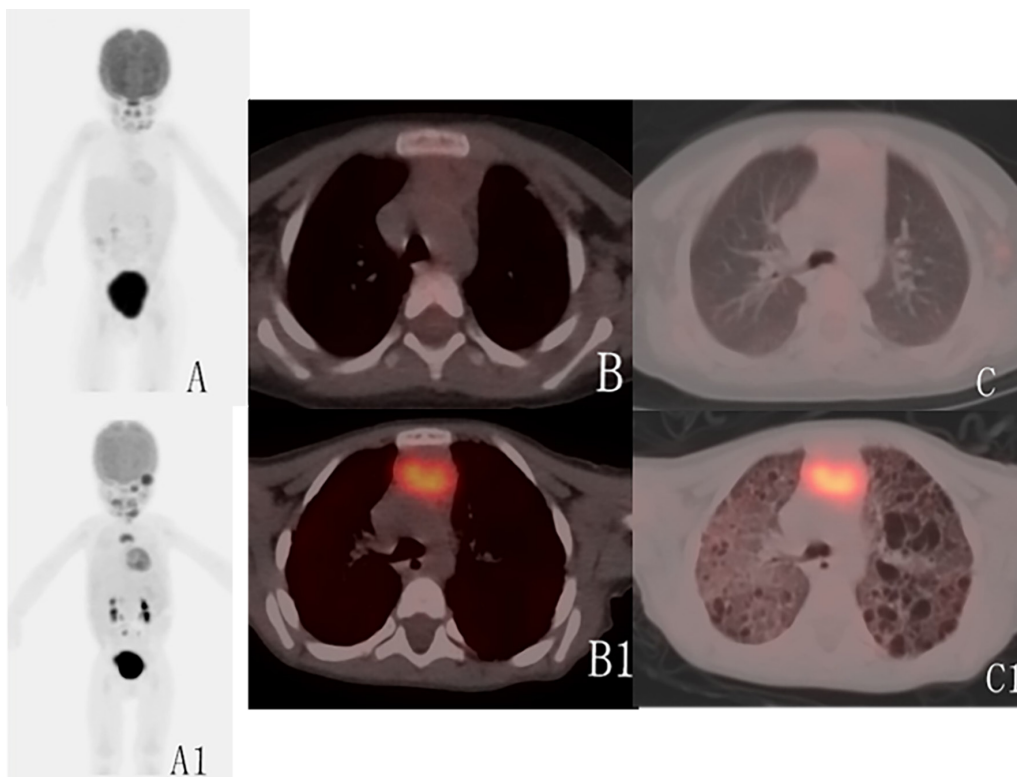


Figure S3 Comparison of PET/CT imaging of a 1-year-old girl with multi-system LCH. Imaging after chemotherapy (A-C) show metabolic activity of LCH lesions and cystic spaces in lung significantly decrease than imaging before chemotherapy (A1-C1).