

Better outcome of children with newly-diagnosed classical Hodgkin's lymphoma treated with PET response-guided treatment in Taiwan: A single center experience

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Introduction

PET response-guided treatment has been shown predictive of outcome in patients with Hodgkin's lymphoma (HL). Interim PET scan is not widely performed to evaluate early treatment response in children with HL in Taiwan because of the regulation of the National Health Insurance program. We started a pilot approach with adaption of interim PET response to guide treatment of children with newly-diagnosed classical HL since 2015. We aimed to report the preliminary treatment outcome and compared it to our historical cohort.

Methods

Patients younger than 18 years old who were diagnosed with classical HL and received treatment at Linkou Chang Gung Memorial Hospital between 2015 and 2019 were included. The mainstay of chemotherapy was EBVD regimen. It was designed to perform PET/CT scans at 3 time points: prior to starting treatment, after 2 cycles of chemotherapy, and after the completion of chemotherapy. Chemotherapy was intensified to patients whose PET scans were positive after 2 cycles of chemotherapy. Involved field radiotherapy (IFRT) was applied only to patients whose PET scans were positive after the completion of chemotherapy. The historical cohort included 46 classical HL pediatric patients, and the treatment outcome had been reported at the 3rd ISCAY AHL.

Results

A total of 10 children with a median age of 14.9 years (range 6.5 - 17.7) were diagnosed with classical HL and treated at Linkou CGMH. Eight of 10 patients (80%) were aged above 10 years. Overall, two (20%) presented with stage IV disease, and 5 (50%) had B symptoms. Two patients underwent IFRT due to positive PET scan after completing chemotherapy. Interim PET scan was not done in one patient. Among 9 patients with interim PET scans, only one had a positive result and underwent intensified treatment. As of December 31, 2019, one patient had relapsed HL 2.5 years after initial diagnosis. All patients were alive. The 3-year disease-free survival (DFS) and overall survival (OS) rates were 80% and 100%, respectively. The treatment outcome was better compared to our historical cohort (3-year and 5-year DFS: 78.2% and 76%; 3-year and 5-year OS: 91.1% and 84%). However, it did not reach statistical significance (DFS: $P = 0.5$; OS: $P = 0.4$).

Conclusion

Our preliminary analysis showed that prompt adjustment of treatment based on PET scans (interim and after completion of chemotherapy) resulted in better outcome in children with newly-diagnosed classical HL in Taiwan. But it requires more patients and longer follow-ups for validation.

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