Outcome of Hyperfractionated Radiotherapy in Chemotherapy-Resistant Non-Hodgkin’s Lymphoma

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Introduction

Lymphoma patients with chemotherapy-resistant disease often have rapidly progressive disease and a poor prognosis.

Accelerated RT may have a higher biologic effect for such rapidly proliferating tumors. This effect may offer improved local control compared to conventional fractionation.

We have selectively treated patients with chemotherapy-resistant Non-Hodgkin’s Lymphoma (NHL) with a hyperfractionated accelerated radiation regimen of 40 Gy in 30 fractions, given twice daily over 3 weeks.

Their clinical outcome is retrospectively reviewed, focusing on tolerability and local control.

Methods

There were 34 patients treated with the accelerated RT regimen from 1997 to 2003. Total dose ranged from 3900 cGy to 4050 cGy in 30 fractions, over a median overall treatment time of 22 days (range 5-29 days), given twice daily (BID) to the involved field.

Treatment sites were:
- Neck (n=7), Axilla (n=9), Neck and Axilla (n=2), Other supradiaphragmatic (n=10), and infradiaphragmatic (n=6).

The median follow-up was 4.4 years.

Response was assessed within 3 months of completion of RT, and classified as complete response (CR), includes unconfirmed CR), partial response (PR), and no response (NR).

Local control was defined as maintenance of local CR, or lack of progression of the local disease in the PR patients.

Disease recurrence/progression outside of the RT volume was regarded as distant disease.

Patient Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>Median Age</td>
<td>53 years</td>
</tr>
<tr>
<td>Male:Female</td>
<td>20:14</td>
</tr>
<tr>
<td>Stage I or II</td>
<td>19 (56%)</td>
</tr>
<tr>
<td>Stage III or IV</td>
<td>15 (44%)</td>
</tr>
<tr>
<td>Bulky Disease (&gt;=10cm)</td>
<td>12 (35%)</td>
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<tr>
<td>HIV+</td>
<td>2 (6%)</td>
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Results

Following accelerated RT, CR was obtained in 32% (n=11), PR in 65% (n=22), and 3% (n=1) had no response (NR). There are 3 patients currently alive.

Disease was locally progressive in 27% of patients at 1, 2, and 3 years. Distant progression of disease was present in 73% of patients at 1 year, and in 76% of patients at 2 and 3 years.

The overall survival was 24%, 15%, and 9% at 1, 2, and 3 years, respectively.

Progression of disease was present in 82% of patients at 1 year, and 85% had progression at 2 and 3 years.

Conclusions

In patients treated with accelerated hyperfractionated RT local control was obtained in 73% of patients at 3 years. This result is improved over local control rates obtained in a previously published review of conventionally fractionated radiotherapy in this patient population (1).

The accelerated radiotherapy in this regimen was well tolerated by patients. The most commonly reported side effect was grade 1 dermatitis.

This result of improved local control with limited toxicity is encouraging, and deserves further prospective study with a comparison to conventional fractionation regimens.

However, distant disease continues to be a challenging problem in this patient population, resulting in poor overall survival.

References