Hypofractionated conformal radiotherapy and chemotherapy in treatment of malignant gliomas

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Conflicts of interest: nothing to declare
Introduction

- Patients with **high grade gliomas (HGG)** are usually elderly patients with poor KI.
- We compare **standard radiotherapy** (STD RT, TD = 60 Gy, 2Gy/fr) with **hypofractionated radiotherapy** (HFRT, TD=20 - 45 Gy, 2.66 - 4 Gy/fr) with or without chemotherapy (CT) in 65 patients with HGG.
- End points:
  - Acute toxicity (RTOG scale)
  - Median overall survival (MOS) and overall survival (OS)
Patients and methods

- Histological type
  - GBM 44 (67.69%)
  - Other 21 (32.21%)

- Surgery type
  - Total 50 (76.9%)
  - Byopsy 15 (23.1%)

- Radiotherapy
  - HRT median TD = 30.0 Gy (43 pts)
  - STD RT median TD = 58.5 Gy (22 pts)

Patients by type of radiotherapy

<table>
<thead>
<tr>
<th>Age</th>
<th>KI &lt;70</th>
<th>KI &gt;70</th>
<th>RT HRT</th>
<th>RT STD</th>
<th>CT (TMZ) Yes</th>
<th>CT (TMZ) NO</th>
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</thead>
<tbody>
<tr>
<td>65-69</td>
<td>11</td>
<td>23</td>
<td>19</td>
<td>15</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>70</td>
<td>16</td>
<td>23</td>
<td>24</td>
<td>7</td>
<td>19</td>
<td>12</td>
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<tr>
<td>Total</td>
<td>27</td>
<td>38</td>
<td>43</td>
<td>22</td>
<td>41</td>
<td>24</td>
</tr>
</tbody>
</table>

Patients by type of radiotherapy
Results: Survival and Toxicity

Median OS and OS by treatment type

Toxicity 0-1 2-3
HFRT 25 pts (58.14%) 18 pts (41.86%)
STD RT 16 pts (72.73%) 6 pts (27.28%)

Median OS and OS by RT type:

HFRT: Med OS 10.1 mo; OS 9%
STD RT: Med OS 18.9 mo; OS 20%
Median F-Up 36 months
Conclusions

• Postoperative radiotherapy plus chemotherapy is feasible in patients with HGG and poor prognostic factors

• **Toxicity** is acceptable, with more grade 2 and 3 toxicities in HFRT arm (41.86 % vs 27.28% in STD RT)

• **HFRT** alone or with chemotherapy is a good treatment option for patients with HGG, >65 years, KI< 70

• **Median OS and OS** are better for patients treated with CT and conventional fractionation (18.9 mo vs 10.1 in HFRT arm; OS 20% in STD RT arm vs 9% in HFRT arm)

• **Molecular markers determination** could be useful to select patients who benefit more from combined therapy and aggressive treatment