Cancer differentiation analysis technology as a novel technology for cerebral cancer screening.

Sub-category: Central Nervous System Tumors

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Meeting: 2019 ASCO Annual Meeting

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Abstract Disclosures

Abstract:

Background: While the current cancer screening methods mostly failed to detect cerebral cancer, a novel, promising technology named cancer differentiation analysis (CDA) technology has been developed to measure novel bio-physical
properties to obtain valuable multi-level and multi-parameter information including protein, cellular and molecular level information. Initial results showed that CDA technology is capable of detecting cerebral cancer with a high degree of sensitivity and specificity. **Methods:** In this study, samples from 78 cerebral cancer patients and 321 healthy individuals were measured. Peripheral blood of each individual was drawn in EDTA tubes. One class of bio-physical property in blood samples was utilized for CDA tests. CDA data were conducted using SPSS, and the results were shown in table. **Results:** The average CDA values of cerebral cancer and control groups were 52.30 and 33.38 (rel. units) respectively. The results indicated that cerebral cancer could be significantly distinguished from the control (p < 0.001). Area under ROC curve (AUC) was 0.980, and sensitivity and specificity was 92.3% and 96.6% respectively. **Conclusions:** Initial results showed that CDA technology could effectively distinguish cerebral cancer from healthy individuals. As a novel bio-physical based cancer detection approach with multi-level and multi-parameter expressions, CDA could be a potential candidate for cerebral cancer screening. Results from Statistical Analysis of CDA.

<table>
<thead>
<tr>
<th>Group</th>
<th>CDA Data Set</th>
<th>Gender (Male %)</th>
<th>Age Range (year)</th>
<th>Average Age (year)</th>
<th>Median Age (year)</th>
<th>Average CDA (rel. units)</th>
<th>Median CDA (rel. units)</th>
<th>SD of CDA (rel. units)</th>
<th>AUC (rel. units)</th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>321</td>
<td>64</td>
<td>30 - 86</td>
<td>53</td>
<td>53</td>
<td>33.30</td>
<td>33.38</td>
<td>5.81</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Cerebral cancer</td>
<td>78</td>
<td>65</td>
<td>30 - 83</td>
<td>55</td>
<td>57</td>
<td>52.30</td>
<td>51.72</td>
<td>8.06</td>
<td>0.980</td>
<td>92.3%</td>
<td>96.6%</td>
</tr>
</tbody>
</table>

1. Second interim and first molecular analysis of the EORTC randomized phase III intergroup CATNON trial on concurrent and adjuvant temozolomide in anaplastic glioma without 1p/19q codeletion.

**Meeting:** 2019 ASCO Annual Meeting **Abstract No:** 2000 **First Author:** Martin J. Van Den Bent **Category:** Central Nervous System Tumors

2. Randomized phase IIb clinical trial of continuation or non-continuation with six cycles of temozolomide after the first six cycles of standard first-line treatment in patients with glioblastoma: A Spanish research group in neuro-oncology (GEINO) trial.

**Meeting:** 2019 ASCO Annual Meeting **Abstract No:** 2001 **First Author:** Carmen Balana **Category:** Central Nervous System Tumors

3. Updated predictive analysis of the WHO-defined molecular subgroups of low-grade gliomas within the high-risk treatment arms of NRG Oncology/RTOG 9802.

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