Protective effect of red berry and cocoa polyphenols against age-related cognitive impairment

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BACKGROUND

As reported in the last Annual ageing report published by the EU, it is expected a 45% increase in the number of people over 65y in Europe before 2030. This demographical change is already causing an epidemiological shift to a higher incidence of chronic-degenerative conditions, mainly affecting the incidence of cardiovascular and cognitive morbidity. In the late years there has been an increasing interest on the effect of polyphenols at the neurological level based on few studies proving the association of polyphenol ingestion and a better cognitive performance.

OBJECTIVES

1. The objective was to determine the effect of red berry anthocyanins and cocoa flavanols consumption on cognitive function (ie, Spatial Recall Test and Tower of London Test).
2. To establish possible interactions between red berry anthocyanins and cocoa flavanols consumption in their cognitive effects.

MATERIAL AND METHODS

Study design

- Volunteers (n=60, consumed a product rich in polyphenols (either flavanols or anthocyanins), or both, during 8 to 10 weeks.

RESULTS

Table 1: Baseline general characteristics of the study participants according to treatment group

<table>
<thead>
<tr>
<th></th>
<th>TOTAL</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>65(4)</td>
<td>63</td>
<td>66</td>
<td>63</td>
</tr>
<tr>
<td>BMI, kg/m2</td>
<td>25.6</td>
<td>25.17</td>
<td>25.45</td>
<td>26.20</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>130/80</td>
<td>130/80</td>
<td>130/80</td>
<td>130/80</td>
</tr>
<tr>
<td>Sex (M/F)</td>
<td>17/42</td>
<td>5/14</td>
<td>6/14</td>
<td>6/14</td>
</tr>
<tr>
<td>Smokers</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Cognitive function

- Significant improvements are observed only on G3 in tests related to the speed of processing and attention, i.e. time to start and execution of the Tower of London test and in Key number test.
- However, in most tests there is an improvement for all three treatments which can not be explained by learning because parallel tests were used.
- There was an improvement in attentional functions and speed of processing in the group consuming cocoa flavanols plus red berries anthocyanins.

ACKNOWLEDGEMENT

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Food anthocyanins and flavanols as a strategy for a healthy ageing: cardiovascular health and cognitive performance (POLYAGE)
COST Action FA1403
Interindividual variation in response to consumption of plant food bioactives and determinants involved (POSITIVe)