**The effect of camelina oil on vascular function in essential hypertensive patients with metabolic syndrome: A randomized, placebo-controlled, double-blind study**

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**On-line Supplementary Material**

**Supplementary Tables**

**Supplementary Table 1.** Fatty acid composition of Camelina sativa oil

|  |  |
| --- | --- |
| **Fatty acid** | **Weight content (% of total weight)** |
| Lauric acide (C12:0) | < 0.10 |
| Myristic acid (C14:0) | < 0.10 |
| Palmitic acid (C16:0) | 5.30 |
| Palmitoleic acid (C16:1) | < 0.10 |
| Stearic acid (C18:0) | 2.50 |
| Oleic acid (C18:1)  | 12.60 |
| Linoleic acid (C18:2) | 15.60 |
| Alpha-linolenic acid (C18:3) | 30.00 |
| Gamma-linolenic acid (C18:3) | < 0.10 |
| Arachidic acid (C20:0) | 1.20 |
| 11-eicosenoic acid (C20:1) | < 0.10 |
| Eicosadienoic acid (C20:2)  | 2.00 |
| Eicosatrienoic acid (C20:3) | 1.50 |
| Arachidonic acid (C20:4) | < 0.10 |
| Behenic acid (C22:0) |  0.30 |
| Erucic acid (C22:1) |  < 3.00 |
| Lignoceric acid (C24:0) |  < 0.30 |
| Other long-chain fatty acids |  2.50 |

**Supplementary Table 2.** Number of gastro-intestinal adverse events reported during the two follow-up visits and the second exploration visit.

|  |  |  |  |
| --- | --- | --- | --- |
| **Adverse events** | **Placebo**  | **Camelina oil** | ***P*=** |
| Abdominal pain, n | 3 | 5 | 0.50 |
| Bloating, n | 9 | 9 | 0.97 |
| Flatulence, n | 10 | 9 | >0.99 |
| Diarrhea, n | 12 | 6 | 0.22 |
| Constipation, n | 3 | 1 | 0.62 |
| Others, n | 5 | 3 | 0.72 |

**Supplementary Table 3.** Resting brachial artery diameter and blood flow

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameters** | **Group** | **Baseline** | **6-month treatment** | **Mean difference [95%CI]** | ***P*=** |
| Brachial artery diameter, mm | Placebo | 4.52±0.81 | 4.53±0.71 |  |  |
|  | Camelina oil | 4.54±0.63 | 4.55±0.66 | 0.01 [-0.17, 0.17] | 0.97 |
| Brachial artery blood flow, ml/min | Placebo | 148±95 | 158±117 |  |  |
|  | Camelina oil | 157±94 | 148±87 | -18 [-64, 27] | 0.42 |

Values are means±SD. Given *P* values are the treatment group – time interaction effect assessed using mixed ANOVA with time as within-subjects factor and treatment group as between-subjects factor (n=41 patients for placebo and n=40 for Camelina oil at each time points).

**Supplementary Figures**

**Supplementary Figure 1.** Changes in total omega-3 (A) and omega-6 fatty (B) acids and in omega-6 / omega-3 ratio (C) quantified in red blood cell membranes of hypertensive patients with metabolic syndrome supplemented with camelina or placebo during 6 months. A and B, Results are given as percentage of total fatty acids. \**P*<0.05, \*\**P*<0.01, \*\*\**P*<0.001. *P* values were obtained using mixed ANOVA with time as within-subjects factor (before and after 6-month treatment) and treatment group as between-subjects factor (placebo or Camelina oil) followed by Bonferroni’s multiple comparison tests to assess the time effect in each treatment group.

**Supplementary Figure 2.** Pearson correlation analyses of the co-variations in brachial artery flow-mediated dilatation, HOMA index, and red blood cell content in alpha-linolenic acid (ALA), eicosapentaenoic acid (EPA), eicosadienoic acid (EDA), arachidonic acid (AA) and gondoic acid (GA) determined in hypertensive patients (n=81) with metabolic syndrome after supplementation with camelina or placebo during 6 months. Blue and red indicate positive and negative correlations respectively and the color intensity the strength of the correlation. \**P*<0.05, \*\**P*<0.01, \*\*\**P*<0.001.

