

## PP115

### Effect of multiple botanical extracts on vascular tone and antioxidant activity

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The aim of the present study was to evaluate the relationship between the antioxidant capacity of batches of botanical extracts enriched or not in polyphenols and their effect on ex-vivo effect vascular reactivity. The total polyphenol content (TPC) of 31 different batches of botanical extracts was determined according to the Folin-Ciocalteu method. The effect of extracts (2 mg/ml) on vascular reactivity were evaluated by incubating rat aorta segments in organ bath (20 ml) with cumulative volumes of extracts to reach a final volume of 2 ml of extracts. Moreover, the antioxidant capacity for extracts containing more than 400 mg of TP expressed in mg Gallic Acid Equivalent (GAE)/g extract, were evaluated by the PAOT-liquid® technology on 20 µL of extracts. Correlations between vascular reactivity and polyphenol content as well as antioxidant capacity were analyzed. The mean values of total polyphenols in the batches of extracts tested varied from 0.950 mg GAE/g to 917.38 mg GAE/g. Among the batches tested, those showing vasorelaxation values greater than 50% after addition of cumulative volumes of extracts between 50 µl and 300 µl were grape seed extracts. Moreover, we observed a significant correlation between TPC of all batches tested and vasorelaxation intensity of aorta segments, for 50 µl (p = 0.04), 100 µl (p = 0.003), 200 µl (p < 0.001) and 300 µl (p < 0.001) cumulative volumes in organ bath. PAOT-liquid® values for the extract tested varied from 67.5 ± 4.36 mg (GAE) L-1 to 13543.5 ± 253.12 mg (GAE) L-1. Interestingly, we found also a significant correlation between the TPC introduced in the organ bath and the associated antioxidant capacity for the cumulative volumes comprised between 50 µl and 1500 µl. Among botanical extracts, the polyphenols rich extracts obtained from grape seed extracts showed the best antioxidant capacity and had positive effect on vascular tone. Dietary supplementation with polyphenol rich extracts contribute to maintain a good cardiovascular function. *E-mail address:* [j.pincemail@chuliege.be](mailto:j.pincemail@chuliege.be)

DOI:10.1016/j.freeradbiomed.2021.08.190

## PP116

### Protocol design for the evaluation of chronic antioxidant supplementation on oxidative stress and cognition status in post COVID-19 patients

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Post COVID-19 sequelae include several complications including cognitive impairment, a situation associated

with increased oxidative stress. In a pilot study, we intend to recruit 20 patients having a MOCA (MONTreal Cognitive Assessment questionnaire) score ≤ 25 after their discharge from hospital for COVID-19 infection requiring a long stay (> 30 days) in Intensive Care Unit. The goal of our study was to check how a blend of polyphenols (French Grape (*Vitis vinifera* L.) and North-American Wild Blueberry (*Vaccinium angustifolium* A) extracts) at 800 mg enriched with vitamins and minerals at nutritional doses (Memophenol™) and given each day during 6 months could potentially decrease oxidative stress and improve cognitive status when compared to a placebo. For that, we propose to investigate a large battery of tests including the determination of antioxidants (vitamins C and E (alpha- and gamma-tocopherol), beta-carotene, glutathione, thiol proteins, total polyphenols, paraoxonase, glutathione peroxidase), trace elements (copper, zinc, selenium), oxidative damages to lipids (lipid peroxides, oxidized LDL) and inflammatory biomarkers (myeloperoxidase), respectively before supplementation, 3 and 6 months after. In parallel, the evolution of the MOCA score will be followed. Actually 8 patients have been included in the study. *E-mail address:* [j.pincemail@chuliege.be](mailto:j.pincemail@chuliege.be)

DOI:10.1016/j.freeradbiomed.2021.08.191

## PP117

### Oxidative Stress Status in COVID-19 Patients Hospitalized in Intensive Care Unit for Severe Pneumonia. A Pilot Study

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Background: A key role of oxidative stress has been highlighted in the pathogenesis of COVID-19. However, little has been said about oxidative stress status (OSS) of COVID-19 patients hospitalized in intensive care unit (ICU). Material and Methods: Biomarkers of the systemic OSS included antioxidants (9 assays), trace elements (3 assays), inflammation markers (4 assays) and oxidative damage to lipids (3 assays). Results: Blood samples were drawn after 9 (7–11) and 41 (39–43) days of ICU stay, respectively in 3 and 6 patients. Vitamin C, thiol proteins, reduced glutathione, γ-tocopherol, β-carotene and PAOT® score were significantly decreased compared to laboratory reference values. Selenium concentration was at the limit of the lower reference value. By contrast, the copper/zinc ratio (as a source of oxidative stress) was higher than reference values in 55% of patients while copper was significantly correlated with lipid peroxides (r = 0.95, p < 0.001). Inflammatory biomarkers (C-reactive protein and myeloperoxidase) were significantly increased when compared to normals. Conclusions: The systemic OSS was strongly altered in critically ill COVID-19 patients as