ADVANCED OXIDATION PROTEIN PRODUCT LEVELS AS A MARKER OF OXIDATIVE STRESS IN MICE WITH HYPERGLYCEMIA

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THE AIM of this study was to establish the oxidation stress of Prunus spinosa L. flower extract (PSE) polyphenol glycosides in C57BL6 mice organs after repeated subchronic (10 days) administration of entry dose of 25 mg kg⁻¹ bw of total polyphenols by gavage.

Background: We aimed to determine whether advanced oxidation protein product (AOPP) levels can serve as a marker of oxidative stress in mice with hyperglycemia.

Methods: Hyperglycemia in mice induced with 150 mg kg⁻¹ bw of alloxan. The experiment lasted 10 days using C57BL/6 mice divided in four groups: group 1 as control (C), group 2 as Prunus spinosa L. flower extract (ECT), group 3 as alloxan (AL) and group 4 as AL with ECT. AOPP levels in the tissue homogenate (liver and kidney) were measured by the spectrophotometric method (microplate reader).

Results: Tissue homogenate (liver, kidney) AOPP levels were significantly higher in the alloxan group (liver: 52.18±3.29 ng mL⁻¹; kidney: 36.12±2.29 ng mL⁻¹) than in the control group (liver: 31.4±1.91 ng mL⁻¹; kidney: 23.73±1.78 ng mL⁻¹; P < 0.001). In addition, the mean AOPP level in the homogenate tissue in the alloxan group was significantly higher than the mean homogenate tissue AOPP levels in the AL+ECT group (liver: 36.15±4.96 ng mL⁻¹; kidney: 27.69±1.75 ng mL⁻¹; P < 0.026).

Conclusion: AOPPs may represent a novel class of pro-inflammatory molecules that are involved in oxidative stress in hyperglycemia. AOPPs may be used as a marker of oxidative stress in patients with hyperglycemia.

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