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ADHERENCE TO DASH DIET AND LEVELS OF AGES AND VASCULAR AND SYSTEMIC INFLAMMATION MARKERS IN PATIENTS WITH PRE- AND HYPERTENSION

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Background: The DASH diet has been shown to be efficient in reducing blood pressure. Its effect is independent of calorie and sodium restriction, possibly associated to a nutritional mediator. Advanced glycation end products (AGEs) have been suggested as a mediator of endothelial inflammation, involved in the deregulation of arteriolar and blood pressure control. There are no clinical studies investigating the association between dietary patterns and the generation of AGES in hypertensive patients.

Objectives: Assess the impact of adherence to DASH-type diet on plasmatic levels of AGEs and markers of vascular and systemic inflammation in patients with pre- and hypertension.

Methods: This protocol is a sub-project of the PREVER study, a randomized clinical trial registered in the database: clinical trial.gov (no. NCT00970931; NCT00971165). This protocol is a quasi-experiment, conducted in Hospital de Clínicas de Porto Alegre and approved by the Research Ethics Committee (no.08-621). A total of 400 prehypertensive and hypertensive participants, men and women, aged 30-70 years were enrolled after signing a consent form. All eligible participants received a lifestyle intervention based on the American Heart Association recommendations, including a DASH-diet pattern, stop smoking, lose weight, and exercise at least 150 minutes per week, being reassessed three months later. Participants were interviewed regarding socio-demographic, lifestyle, and previous morbidity using a standardized questionnaire. Anthropometric measurements were taken in duplicate and blood pressure four times, using a validated oscillometric monitor. Dietary intake was evaluated through a group food frequency questionnaire (FFQ) developed and validated to be used in the PREVER trial. The adherence to the eating plan, will be assessed through a score based on recommended number of servings per day. Plasma levels of AGEs will be determinated by ELISA essay method and adhesion molecules, selectin and markers of systemic inflammation by Multiplex Panel. Pearson chi-square test will be used to analyze categorical variables, and t test or analysis of variance for continuous (SPSS v.17). The analysis will be carried out using Poisson regression and Cox hazard regression models, which allow controling for confounding factors.

Conclusions: The evaluation of the pattern DASH diet on plasma levels of AGEs can provide additional information to reduce blood pressure through dietary pattern, already recommended. It can also provide data on the inflammatory response that occurs in the genesis and progression of hypertension.

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