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11 - Therapeutic

Double blind, randomized, controlled clinical trial of NaCl + Chitosan 3% vs. NaCl on the decrease of blood pressure induced by a low salt diet in healthy prehypertensive volunteers

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Background Because of the impressive increase in the risk of cardiovascular complications associated with levels of blood pressure (BP) previously considered as normal, the JNC 7 report has introduced a new classification that includes the term ''prehypertension'' for those with BP ranging from 120-139 mmHg systolic and/or 80-89 mmHg diastolic. In the framework of a salt reduction as recommended by health authorities, this trial evaluated if the use of Symbiosal® reduces more prehypertension than standard table marine salt (NaCl).
Methods Study design: monocentric, randomized, double blind, controlled trial comparing the marine salt NaCl + Chitosan 3% (specific patent Symbiosal) and the standard table marine salt NaCl. The study has been conducted in 2 parallel arms: every subject received, according to the randomization Symbiosal or NaCl. The main objective of this clinical trial was to demonstrate a higher reduction of systolic BP (SBP) with Symbiosal than with NaCl in the framework of a table salt reduction to a maximum of 3 g per day in prehypertensive patients.
Results Twenty-two subjects were included in the Symbiosal group and 19 in the NaCl group after randomization. The two groups have the same salt consumption: a daily intake of respectively 2.2 ± 1.1 g/day *vs.* 2.5 ± 1.2 g/day ($P = 0.3621$). The SBP was measured by the investigators at D0 and D56. SBP significantly decreased more in the Symbiosal group from 133.8 ± 5.7 mmHg to 126.1 ± 6.5 mmHg ($P < 0.0001$) corresponding to a reduction of 7.7 ± 5.9 mmHg while it slightly increased in the group NaCl from 136.6 ± 10.3 mmHg to 140.4 ± 8.3 mmHg which corresponds to an increase of 3.7 ± 6 mmHg (main criteria). The proportion of subjects whose SBP was under 130 mmHg was strongly and significantly more important in the Symbiosal group = 77.3% vs. 10.5% in the NaCl group ($P < 0.0001$).
Conclusions This controlled randomized double-blind trial comparing Symbiosal to standard salt in the framework of a salt reduction demonstrate the efficiency of Symbiosal to prevent hypertension by controlling the BP in subject presenting prehypertensive status which is the target population of that food supplement.

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Relationship between 25(OH) vitamin D and the number of antihypertensive drugs in hypertensive patients in the area of Blida (Algeria)

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Purpose The purpose of the study was to evaluate the relationship between 25(OH) vitamin D and the number of antihypertensive drugs (AHTs) used in hypertensive patients.
Methods A total of 1145 patients were enrolled in the study between January 2017 and June 2018 in specialized consultation at the department of internal medicine at the Blida university hospital (65.8% female, 34.2% male, age: 52 ± 13 years old). The initial serum 25 (OH) vitamin D level was determined by the enzyme immunoassay for all patients. Antihypertensive therapy was supplemented with 200000 IU/month cholecalciferol for all the patients. A follow-up visit was performed 12 months later.
Results In total, 22.4% of patients received 1 antihypertensive drug, 47.7% of patients 2 drugs, 19.7% of patients 3 drugs, 8.8% of patients 4 drugs, and 1.4% were treated with 5 antihypertensive drugs. The mean number of antihypertensive drugs was 2.5. Glomerular filtration measured by CKD-EPI was 49.3 ± 7.2 ml/min. The mean level of baseline plasma vitamin D was 10.6 ± 5.4 ng/ml. One year later, the mean plasma level of vitamin D increased to 28.3 ± 10.8. Sixty seven percent of the patients were still under vitamin D supplementation at follow-up whereas 32.8% had stopped the treatment. In the former, plasma vitamin D increased to 29.0 ng/ml versus 15.3 ng/ml in the latter group. There was a significant relationship between the 25(OH) vitamin D plasma level and blood pressure ($P = 0.05$) and the number of antihypertensive drugs used ($P = 0.013$). The difference between those patients who kept the treatment and those who stopped was highly significant ($P < 0.05$). The action of diuretics on BP is more synergistic in combination with vitamin D (95.5% vs. 76.4% without vitamin D), followed respectively by calcium channel blockers (67.8% vs. 57.4%), beta-blockers (66.2% vs. 46.5%), converting enzyme inhibitors (50.3% vs.