

## Pengaruh suplementasi Seng terhadap ketajaman pengecap manula = The effect of Zinc supplementation on the taste acuity of the elderly

Ekky M. Rahardja, author

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### Abstrak

#### <b>ABSTRAK</b>

Ruang Lingkup dan Cara Penelitian: Data statistik menunjukkan bahwa dalam kurun waktu 10 tahun terakhir, jumlah manula di Indonesia meningkat dari 6,9 juta pada tahun 1980 menjadi 11.5 juta pada tahun 1990. Pada manula, berkurangnya gigi-geligi dan atrofi tunas pengecap dapat menyebabkan berkurangnya masukan energi dan zat gizi lainnya, termasuk seng. Defisiensi seng dapat menyebabkan gangguan ketajaman pengecap. Telah diketahui bahwa seng terdapat dalam berbagai bahan makanan. Seng dari bahan makanan asal nabati sukar diserap karena adanya asam fitat dan serat yang membentuk senyawa tidak larut dengan seng. Sebaliknya, bahan makanan asal hewani sebagai sumber seng, relatif lebih mahal. Oleh karena itu, suplementasi seng dipertimbangkan sebagai cara lain untuk meningkatkan masukan seng. Tujuan penelitian ini ialah menilai pengaruh suplementasi seng terhadap perbaikan gangguan ketajaman pengecap manula yang mengalami defisiensi seng. Seng dalam bentuk kapsul seng sulfat a 220 mg diberikan per oral setiap hari selama 4 minggu. Penelitian dilakukan secara acak sederhana tersamar ganda terhadap 60 manula. Manula dibagi dalam 2 kelompok, masing-masing 30 orang. Kelompok kontrol diberi kapsul plasebo dan kelompok perlakuan diberi kapsul seng sulfat buatan PT Kimia Farma. Data 10 manula kelompok perlakuan dikeluarkan karena diketahui meminum kapsul tidak sesuai ketentuan.

Hasil dan Kesimpulan: Nilai rata-rata (X) kadar seng plasma kelompok kontrol dan perlakuan sebelum dilakukan suplementasi adalah berturut-turut  $75,0 \pm 9,33$  &#956;g/dL dan  $78,3 \pm 8,23$  , &#956;g/dL. Hasil uji Anova dan Perbandingan Multipel menunjukkan bahwa pada kelompok kontrol, kadar seng plasma sebelum dan sesudah diberi plasebo tidak berbeda bermakna walaupun intervensi dilakukan 7 - 8 bulan kemudian. Sesudah suplementasi ternyata kadar seng plasma kelompok perlakuan ( $113,5 \pm 20,19$  &#956;g/dL) meningkat secara bermakna dibandingkan kelompok kontrol ( $83,23 \pm 10,37$  &#956;g/dL). Hasil tes kecap Smith menunjukkan bahwa 5 (16,7%) manula kelompok kontrol dan 9 (45%) manula kelompok perlakuan mengalami perbaikan ketajaman pengecap. Uji Chi-square menunjukkan bahwa perbaikan tersebut berbeda bermakna ( $p < 0,05$ ). Kesimpulannya ialah suplementasi seng mampu memperbaiki ketajaman pengecap manula.

#### <hr><i><b>ABSTRACT</b>

Scope and Method of Study: The statistical data showed that within the last 10 years, the number of the elderly in Indonesia increased from 6.9 millions in 1980 to 11.5 millions in. 1990. In the elderly, the missing of the teeth and the atrophy of the taste buds may cause inadequate intake of the energy and other nutrients, including zinc. Zinc deficiency has been associated with depressed taste acuity. Zinc is found in many foodstuffs. The absorption of zinc from plant products is difficult due to the presence of phytic acids and fibers which form an insoluble complex with zinc. In contrast, animal proteins as the source of zinc are relatively more expensive. Thus, the supplementation of zinc is considered as an alter-native way to increase

the zinc intake. The aim of this study is to assess the effect of zinc supplementation on the improvement of the taste acuity of the elderly. The zinc supplement was given orally once a day for 4 weeks in the form of capsule containing 220 mg zinc sulfate. A double-blind study was designed on 60 zinc deficient subjects who showed depressed taste acuity. The subjects were divided into 2 groups, each consisted of 30. The placebo and zinc sulfate capsules prepared by PT Kimia Farma were given to the control and treatment groups, respectively. Due to the history of not taking the capsule regularly as it was required, data of 10 subjects of the treatment group were excluded from statistical analysis.

Findings and Conclusions: The mean plasma zinc concentration of the control and treatment groups before the supplementation period were  $75.0 \pm 9.33 \text{ g/dL}$  and  $78.3 \pm 8.23 \text{ g/dL}$ , respectively. Statistical analysis using Anova and Multiple comparison showed no significant change in the plasma zinc level of the control group before and after supplementation of placebo, although the intervention was conducted 7 - 8 months thereafter. After 4 weeks, the plasma zinc level of the treatment group ( $113.5 \pm 20.19 \text{ g/dL}$ ) were significantly higher than those of the control group ( $83.23 \text{ -} 10.37 \text{ g/dL}$ ). The Smith's test showed the improvement of the taste acuity on 5 (16.7%) subjects of the control group and 9 (45%) of the treatment group. Chi-Square's test showed that the improvement was significant ( $p < 0.05$ ). It can be concluded that the effect of zinc supplementation on the improvement of the taste acuity of the aged was significant.