Objective: To investigate the relationship of depression degree in aged population and selenium content to APOE gene polymorphism in deferent selenium level areas.

Methods: Choose two rural areas, appropriate selenium level (Qionglai) and low selenium level (Jiange); Selected 500 volunteers over 65 by cluster sampling method, to carry out the Geriatric Depression Scale (GDS) and relevant cognitive questionnaires respectively. Nails and finger blood are sampled simultaneously to detect the selenium level and APOE gene, 50 volunteers are required to sample vein blood for detecting blood selenium level. Evaluate the depression degree by continuous GDS score (scores between 11 and 20 are generally considered to represent significant mild depression and scores of 21 or higher are considered severe depression). Difference between different areas on distribution of depression degree, nail's selenium content and APOE gene polymorphism is tested by t test and chi-square test.

Results: Results from two areas show good correlations between blood selenium and nail selenium level. Significant statistical differences are observed between two areas both in nail selenium level (P<0.001) and distribution of APOE gene polymorphism (P<0.0001). Difference of constituent ratio of depression degree is significant too, in which the number of depression patients in Jiange is more than that in Qionglai. Divide all 1000 subjects into two groups according to the nail selenium content (group 1 with nail selenium content <0.259 μg/g and group 2>0.259 μg/g). The frequency of gene ε2/2, ε2/4, ε3/4 in group 1 is lower than group 2, with significant difference (P<0.05). The ratio of allele ε2, ε3, ε4 in group 2 is higher than group 1, with statistical difference. Ratios for allele ε2, ε3, ε4 of APOE are significant different either in different areas or different nail selenium content groups. As for the distribution of gene polymorphism comparison, all five genotypes have statistical difference in different area groups, but only three of them (ε2/2, ε2/4, ε3/4) have statistical difference in nail selenium content groups.

Conclusions: Population’s selenium levels are different in different selenium level areas. There is correlation between selenium level and APOE gene polymorphism, gene ε2/2 only appears in population with higher selenium content. Patients of depression in lower selenium area are more than that in area with higher selenium level, which shows the possibility of selenium being risk factor for aged depression.

Biography

Ping Li currently working as a Professor at Sichuan center for disease control and prevention. She pursued her BS from the Sichuan University, Chengdu, China in 1978-1982. She started her career as a Research Assistant at The institute of Pneumoconiosis of Chongqi, China, during the years 1982-1985 and from 1985-1992 she worked as a Research associate at Health and Anti-Epidemic Center of Sichuan Province, Chengdu, China. Then she joined in IBID as an Associate Professor in the year 1992 and she got promoted to professor in 2001.

L55p126@hotmail.com