

Association of rs1800795 polymorphism of IL-6 gene with health status in Croatian elderly population

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BACKGROUND

Increases in serum cytokine IL-6 have been proposed as a reliable marker of functional decline, morbidity and mortality in old age. The results of studies exploring the role of rs1800795 polymorphism of IL-6 gene in longevity have however been conflicting.

GOALS

The aim of this study was to test the association between the rs1800795 polymorphism of *IL-6* gene and indicators of biological age in people of very old age

Table 1. IL-6: PCA extraction of Factor 3 („General health“) in total sample

VARIABLE	3. FACTOR „GENERAL HEALTH“
MOTILITY (SUBJECTIVE)	,630
INDEPENDENCE (SUBJECTIVE)	,570
MOTILITY (OBJECTIVE)	,505
SELF RATED HEALTH	,493
SELF RATED HEALTH IN COMPARISON TO OTHERS	,372
GLOBULIN	,355
NUMBER OF CHRONIC ILLNES	,343
TRIGLYCERIDES	,332
TRICEPS SKINFOLD	,311
WAIST CIRCUMFERENCES	,311
LDL/HDL	,303

PARTICIPANTS

324 oldest old (85-101 yrs) people living in retirement homes in Zagreb, Croatia

METHODS

- Noninvasive biometric measurements (anthropometry, blood pressure measurement, ultrasound bone densitometry)
- Common biochemical blood tests (lipid, glycemic and protein status)
- Self-rated health interview
- DNA extraction using the salting out procedure
- DNA fragments were amplified by polymerase chain reaction using specially designed primers 5'- CAAGACATGCCAAAGTGCTG -3' and 5'- ATCTTTGTTGGAGGGTGAGG -3'
- Analysis by *SNaPshot Multiplex Kit*, *Applied Biosystems*
- Principal component analysis of 41 variables associated with health status
- Statistical analysis were performed by SPSS 10.00 for Windows

RESULTS AND DISCUSSION

Altogether 41 variables were entered into the principal component analysis (PCA), which resulted in the extraction of four significant factors, among which the first factor represents body mass and composition, the second one represents sex differences, while the third one represents general health. This study revealed a significant association of rs1800795 with the factor of general health in Croatian elderly sample indicating that the high IL-6 producer genotype (GG) carriers have better scores in personal independence, motility, self-rated health and suffer less from chronic and acute illness.

Table 2. IL6: T-test for Factor 3 („General health“) in total sample

Genotype	N	F3 X	F3 SD	p-value
GG	114	-0,1665	1,0334	
GC, CC	211	0,0900	0,9721	0,027

CONCLUSION

Significant association of rs1800795 polymorphism with biological age variables in the 85+ year olds indicates a pleiotropic effect of IL-6 gene on human health. Targeted studies are needed to explore further this relation in different elderly populations.