Oral Presenatation 15:11-15:20

Role of EGFR polymorphisms and clinical progression of rheumatoid arthritis

Chung-Ming Huang[1,3], Joung-Liang Lan [1], Jonathan Chen [1], Po-hao Huang[1], Chien-Chung Huang[1], Shih-Yin Chen[2,4],Fuu-Jen Tsai[2,4]

Division of Immunology and Rheumatology, Department of Internal Medicine[1], and Genetic Center, Department of Medical Research[2], China Medical University Hospital, Taichung, Taiwan;

Graduate Institute of Integrated Medicine[3], College of Chinese Medicine, China Medical University[4], Taichung, Taiwan

黃春明[1,3], 藍忠亮[1], 陳俊宏[1],黃柏豪[1], 黃建中[1], 陳世殷[2,4], 蔡輔仁[2,4]

中國醫藥大學附設醫院 內科部免疫風濕科[1] 醫研部[2]

中國醫藥大學 中醫學院[4] 中西整合研究所[3]

Abstract

Background: We have previously described the association of rheumatoid arthritis (RA) prevalence and two epidermal growth factor receptor (EGFR) SNPs (rs17337023 and rs2227983) among Taiwanese population. This present study aimed to elucidate if these SNPs either alter EGFR expression or its function, and change increase the incidence and severity of RA.

Methods: The study cohort included 250 Taiwan's Han Chinese RA patients and 223 age-,gender-matched healthy controls. Questionnaires, that measures functional status, joint count and quality of life, were given to outpatients. Blood samples collected from RA patients were analyzed to determine serum EGFR levels. The complete blood count, lipid profile, liver enzymes, renal function and RA biomarkers were also performed to determine the inflammatory statuses of RA patients and possibly organ dysfunction happened to them.

Results: Our data evidenced the prevalence of RA increase with individuals carrying AA or AT ($p < 0.001$) at rs17337023 SNP. Although the data did not reach statistical significance, AA/ATpatients tended to have lower mean anti-cyclic citrullinated peptide antibodies (anti-CCP), rheumatoid factor (RF), C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) values than TT controls. Besides, abnormal copy number variation (CNV) was found in 4.2% RA patients who participated in the study. Increased expression of EGFR was also observed in RA patients ($p < 0.001$).

Conclusion: Our study showed a correlation of increased EGFR expression and its gene polymorphism with the prevalence and may affect RA severity. These findings suggest EGFR worth further investigation as a therapeutic target for treatment of RA.