ASSOCIATION OF FASTING TRIGLYCERIDE LEVELS AND 15-YEAR CHANGES WITH DIABETES RISK IN THE CHINESE MULTI-PROVINCIAL COHORT STUDY

Wang Wei, Zhao Dong, Liu Jing, Sun Jiaj, Wang Miao, Liu Jun, Qi Yue Department of Epidemiology, Capital Medical University, Anzhen Hospital, Beijing Institute of Heart Lung and Blood Vessel Diseases, Beijing, China

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Objective To explore the relationship between changes of fasting triglyceride (TG) levels at two points in time and 15-year accumulative risk of diabetes.

Methods The study subjects, obtained from the Chinese multi-provincial cohort study (CMCS), were entered into an epidemiological survey during the 15-year study period from 1992 to 2007. Total of 5408 participants aged 35–64 years were included with complete information, without diabetes at baseline. Fasting TG levels were categorised into three groups: <150 mg/dl, 150–199 mg/dl and 200 mg/dl. Logistic regression analysis was conducted to assess the association of baseline TG levels and 15-year changes with accumulative risk of diabetes.

Results (1) Elevations in mean TG levels were 34.6 mg/dl in whole study population. (2) The 15-year accumulative incidence of diabetes was 12.8% in whole study population. Relative to the baseline TG group, the 15-year accumulative incidence of diabetes from lowest to highest was 10.5%, 16.2% and 26.6%, respectively. Multivariate logistic regression analysis showed that the baseline TG level was significantly associated with diabetes risk, even after adjustment for other cardiovascular risk factors. (3) The accumulative incidence of diabetes was 8.8% in participants with the lowest category of both baseline and follow-up TG levels, and 32.3% in participants with the highest category of both baseline and follow-up TG levels. Multivariate logistic regression analysis showed that participants with the highest category of both baseline and follow-up TG level had 2.1 times higher accumulative risk of diabetes (RR=3.11, 95% CI: 2.27 to 4.26) than those with the lowest category of both baseline and follow-up TG levels.

Conclusion Baseline TG levels were independently associated with diabetes risk, and the changes of TG levels at two points in time had more predictive value for diabetes risk than baseline TG levels.