

## CURRENT STATUS OF TRIGLYCERIDE STANDARDIZATION IN KOREA, AN EXPERIENCE FROM NATIONAL LIPID STANDARDIZATION PROGRAM FROM 2016 TO 2017

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Accurate and precise measurements of triglycerides (TG) are crucial in cardiovascular disease risk management. We examined standardized data to clarify the performance of routine TG methods in Korea through National Lipid Standardization Program from 2016 to 2017. Three samples were sent to the laboratory for each cycle, twice a year. The participating laboratories were required to repeat the sample measurements three times a day for two days. Total glycerides were measured in Korean Centers for Disease Control (CDC) by isotope dilution mass spectrometry, a method designed by CDC in the United States. The target values of triglyceride were determined by subtracting the free glycerol value measured by ReCCS (Reference Material Institute for Clinical Chemistry Standards) in Japan. We calculated the total coefficient of variance (CV), the percent bias, and the total error for each sample. Two routine methods were largely used by laboratories; The one is enzymatic method without glycerol blanking (nonblanking group) and the other is the with glycerol blanking (blanking group). The mean values of blanking group were consistently lower than those of nonblanking group. Regardless of the method of measurement, the imprecisions of most laboratories showed less than 2%, which qualified to the NCEP (National Cholesterol Education Program) criteria. However, in relation to bias, in about 1/4 of the laboratories, the bias was found to exceed the 5% NCEP criteria and appeared to be more prominent in the group using specific reagents. There was no significant difference between the two groups in terms of accuracy, but negative bias was more pronounced in nonblanking group than in blanking group. Because of outperformed precision, few laboratories had total error greater than 15%. In conclusion, the precision of triglycerides was found to be satisfactory in most laboratories in Korea but the accuracy still needs improvements.

## BIOGRAPHY

Gye Cheol Kwon has completed his PhD in 1993 from Chungnam National University, South Korea. Currently he is the director/professor of Chugnam National University Hospital, vice president of Korean External Quality Assessment Scheme and will be the chairman of the Korean Society for Laboratory Medicine from 2019. His research interest is in mass spectrometry, triglyceride and pre-analytical issues in the laboratory.

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