Topic: Hypertension, Diabetes, Lipid Metabolism

Characteristics of Lipid Profile of LPL Deficiency in Japan – Comparison with Non-LPL Deficiency

Junji Kobayashi

Department of General Medicine, Kanazawa Medical University, Kanazawa, Japan

Keywords: Lipoprotein lipase deficiency, autosomal recessive lipid disorder, severe hypertriglyceridaemia

Citation: *European Cardiology Review* 2018;**13**(2):132. **DOI:** <https://doi.org/10.15420/ecr.2018.13.2.PO13>

Objective

Lipoprotein lipase deficiency is a rare autosomal recessive lipid disorder caused by a mutation in the gene which codes lipoprotein lipase and is characterised by severe hypertriglyceridaemia. On the other hand, we encounter subjects with very severe hypertriglyceridaemia, but they are not LPL deficient (non-LPL deficiency). In this study, we clarify the differences in lipid profiles between LPL deficiency and non-LPL deficiency.

Methods

We analysed 16 patients in 13 articles on LPL deficiency published by Japanese researchers since 1990 and 11 non-LPL deficiency as controls. The differences in lipid values between the two groups were analysed using Mann-Whitney U test.

Results

In LPL deficiency (n=16, F/M 5/11) versus non-LPL deficiency (n=11, F/M

5/6), TC (mg/dl) were 267 ± 214 and 328 ± 52 ($p=0.002$), respectively; TG (mg/dl) were $2,446 \pm 2,234$ and $1,477 \pm 670$ ($p=0.29$), respectively and HDL-C (mg/dl) were 14.2 ± 5.1 and 31.8 ± 6.01 ($p<0.0001$), respectively.

To assess the usefulness of TG and HDL-C values to discriminate LPL deficiency from non-LPL deficiency, we conducted ROC analysis. In the case of TG, the area under the ROC curve (AUC) was 0.693, whereas in the case of HDL-C, the AUC was 0.991. These results indicate that HDL-C may be an excellent value for discriminating LPL deficiency from non-LPL deficiency. When we used HDL-C of 26.5 mg/dl as cut value, the detection sensitivity and specificity of the non-LPL deficient case were 0.82 and 1.00, respectively.

Conclusion

It was suggested that the HDL-C value may be extremely useful for discriminating the presence or absence of LPL deficiency in severe hypertriglyceridaemia. ■