Simultaneous copy number losses within multiple subtelomeric regions in early-onset type 2 diabetes mellitus.

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Professor Hideki Katagiri and his colleagues found simultaneous copy number losses in three subtelomeric regions in 11% of patients with early-onset type 2 diabetes.

The majority of type 2 diabetes mellitus (T2DM) onset is influenced by genetic factors. Genome-wide association studies and replication studies have found multiple loci, such as TCF7L2, KCNQ1. However, the fact that their odds ratio remains in the range of 1.1 – 1.4 suggests their contribution is relatively low. The research team previously demonstrated that copy number losses in the subtelomeric region on chromosome 4p16.3 in early-onset T2DM. They demonstrate novel two copy number losses within the subtelomeric region on chromosome 16q24.2-3 and 24q13.31-33 in early-onset T2DM. Furthermore, simultaneous copy number losses were verified in 11 out of 100 T2DM patients in all three subtelomeric regions, while in the 100 controls, none of them showed the copy number loss in all three regions. This is the first report indicating that copy number losses within the multiple subtelomeric region tightly associate with early-onset T2DM. The simultaneous copy number losses in the all three subtelomeric regions may be a novel and powerful diagnostic measure to predict the early-onset of T2DM. The results of this research were published in PLoS ONE.

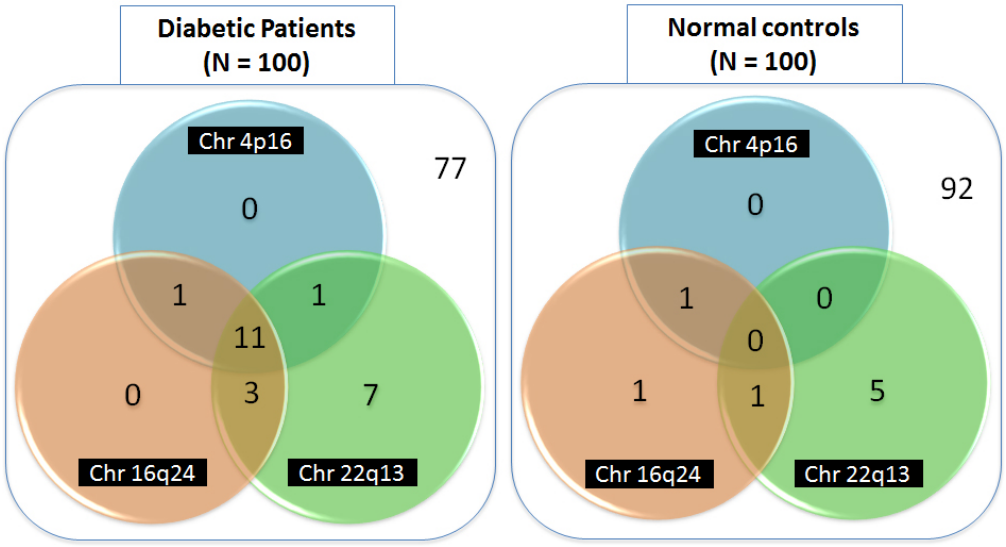

Figure. Details of the numbers of patients and controls with copy number loss in each subtelomeric region.

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