Letter to the Editor

Necessity of obesity control for preventing life-style related diseases

Overweight and excess weight gains are part of a serious modern epidemic that affects the majority of Japanese adults and a growing proportion of youth. Such obesity is a major risk factor of metabolic syndrome and following diabetes mellitus, hypertension and other life-style related diseases. Effective primary prevention programs are urgently needed to address this public health issue.

Few studies have been conducted to intervene on these environmental influences for obesity prevention interventions. The Pound of Prevention study (POP) was the first weight gain primary prevention trial in adults in the USA. Five key behaviors were targeted: 1) increase fruit intake, 2) increase vegetable intake, 3) increase physical activity especially walking, 4) increase frequency of self-weighing, and 5) decrease dietary fat intake. After three years, weight gain did not differ by treatment group. However, the intervention was successful in increasing the frequency of self-weighing and healthy weight control behaviors. Results of the POP study are encouraging and suggest several ways to improve the efficacy of a low intensity weight gain prevention program.

The Ministry of Health, Labour and Welfare distributed the guideline for eating habit and physical activity in 1999 and 2006, respectively, but the prevalence of obesity and diabetes mellitus has continuously increasing. In 2006, seven academic associations decided the criteria of metabolic syndrome and nationwide primary prevention is planned by implementing it to the mass screening program. However, the proposed education method by the guideline is not yet evaluated by epidemiological program. It is necessary to show the efficacy of the intervention to control obesity. So, we planned to do the intervention study by the cognitive behavior alteration method through dietary change and physical activity under the support of the Ministry of Health, Labor and Welfare. The result of the current study will provide important information on the effectiveness of a broad-reaching weight-gain prevention program. It will also provide unique data about whether changing these environmental influences will have an impact on preventing weight gain. The incorporation of a stronger environmental component to support the behavioral recommendations and their implementation by individuals should also strengthen the intervention’s effectiveness on body weight and behavior changes.

The pilot data provided useful planning information on intervention and measurement protocols. The current literature supports stronger and more specific behavioral recommendations to prevent weight gain. Cognitive behavioral modification approaches for improving people’s intrinsic motivation for weight loss and maintenance. Positive support, rewarding or praising, and modeling desired eating and exercise behaviors are important. Psychological and genetic (single nucleotide polymorphism) variables are also important to build so-called tailor-made nutrition or health education. In addition to the dietary intake and physical activity, eating behavior is another important variable.

We had an experience with the cooperation of public health center to make a cohort consisting of 40- to 59-year-old area residents in 1989. The original purpose was to identify cancer and cardiovascular disease risks, but it expanded to find risks of diabetes mellitus, cataract and other chronic diseases. We selected the area for intervention trial in the same cohort area. Health Dock Center in the Saku Central Hospital registered more than 50,000 health-check up examinees, and their longitudinal data becomes backbone of our intervention trial. A large scale population-based cohort study is desirable as a means of elucidating risk factors for chronic non-communicable diseases. However, for intervention studies nested clinical trial in the cohort is more effective.

Recent development of molecular biology opened a new field for epidemiology to measure biomarkers as indices of exposure and process of disease progression. Importance of genetic markers is found as special SNP being related to the obesity. Psychological influence is also considered to be important. Based upon these requirement and possibility, multidisciplinary study from different dimensions is necessary.

In the separate reports we present the tabulated results of the baseline study on about 240 participants in the Saku Control Obesity Program (SCOP), including the biochemistry, behavior, eating habit and physical activity, psychology, genetic polymorphism, basal metabolic rate under the close collaboration between Nutritional Epidemiology Program, Health Promotion Program, Health Education Program in the National Institute of Health and Nutrition, Health Dock Center in the Saku Central Hospital, and the Nutritional Department, Tokyo University of Agriculture. We hope that it will prove to be of value as reference material to researchers in the public health field.

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References

6) MHLW guideline mass screening H20.