Intake of foods containing phytochemicals was associated with benign prostate hyperplasia

Tomiyo Nakamura (1)
Akiko Shiotani (2), Chikako Yasui (3), Ikuko Takeyama (4), Hideki Ishikawa (5)

1 : Research Institute for Food and Agriculture, Ryukoku University
2 : Faculty of Health and Nutrition, Otemae University
3 : Department of Gastronomy Management, Ritsumeikan University
4 : Department of Food and Nutrition Management, Soai university
5 : Department of Molecular-Targeting Prevention, Graduate School of Medical Science, Kyoto Prefectural University of Medicine

Backgrounds : It has been hypothesized that an increase in estradiol, the most potent estrogen, with testosterone contributes to the development of benign prostate hyperplasia (BPH). Plant foods contain phytochemicals with estrogen-like effects or anti-estrogenic activities.

Obejective : We aimed to figure out how intake of various plant foods is associated with the development of BPH using data from a long-term cohort study.

Methods : We designed a long-term follow-up study using participants who had previously participated in an intervention study from 1993 to 1997. The prostate volume (PV) data was available for 120 individuals. BPH was defined as PV $\geq$ 30 mL. Multivariate logistic regression analyses identified independent risk factors for BPH using dietary data at entry. Results: During a median follow-up period of 24 years, the median age when subjects had maximum PV was 79 years in men without BPH (n=62) and 76.5 years in men with BPH(n=58). Multivariate analysis showed that the risk of development of BPH was significantly higher among men who had the highest intake of onion, daikon radish, or fruits compared to men who had the lowest intake. Multivariate analysis adjusted for other phytochemicals showed that the risk of development of BPH was significantly higher among men who had the highest intake of β-carotene and quercetin, which exhibit estrogen-like effects, compared to men who had the lowest intake. However, the risk of development of BPH was significantly lower among men who had the highest intake of lycopene and soybean polyphenol, which exhibit anti-estrogenic effects, compared to men who had the lowest intake.

Conclution : This study suggests that the intake of phytochemicals with estrogen-like effects could increase the risk of development of BPH and the intake of phytochemicals with anti-estrogenic effects could decrease the risk of the development of BPH.

Estimating age-specific infection fatality risk of COVID-19 using forensic data

Yuri Amemiya (1)

Hiroshi Nishiura (1)

1 : Kyoto University School of Public Health

Background : Estimating the infection fatality risk (IFR) for emerging infectious diseases is crucial for public health policy decision making and risk assessment. While various methods have been proposed to address biases associated with asymptomatic and mild infections and limited testing capacity, no perfect method exists. Expanding the available option of estimation technique is therefore critical for enhancing future pandemic preparedness. One such approach, yet underutilized, is the analysis of data from medico-legal death investigation systems. The objective in the present study was to calculate age-dependent IFR of COVID-19 using the forensic data.

Methods : We calculated the age-dependent IFR in the special wards of Tokyo from March 2020 to February 2021 using three data sources: (i) medico-legal death investigation data, including post-mortem SARS-CoV-2 PCR test results, (ii) official government statistics on all-cause mortality and population size, (iii) published seroepidemiological data. By combining these data sources with Bayes' theorem equation, we calculated age-dependent IFR and their 95% confidence intervals (CIs) using a parametric bootstrap method. These estimates were then compared with previously published estimates based on existing methods.

Results : The estimated age-dependent IFR was 0.03% (95% CI: 0.01-0.08) among people aged under 39 years, 0.73% (95% CI: 0.39-1.39) among people aged from 40 to 64 years, and 6.3% (95% CI: 4.1-9.6) among people aged 65 years and older. These estimates were broadly consistent with published findings from other studies.

Conclusion : Medico-legal death investigation data can greatly help estimate the IFR and routine testing of deceased persons can act as a valuable tool for assessing the severity of future pandemics.

Health checkup history and hospital visits in patients with diabetes: a retrospective cohort study

Qinyan Li (1)
Yuko Nakamura (2), Ryohei Yamamoto (1,2)

1 : Laboratory of Behavioral Health Promotion, Department of Health Promotion Medicine, Graduate School of Medicine, Osaka University
2 : Health and Counseling Center, Osaka University

Background : Patients diagnosed as diabetes mellitus at annual health checkups should visit hospitals for medical care. Although several factors contribute to hospital visits after health checkups, including mental health, educational level, and socioeconomic status, few studies have assessed a clinical impact of health checkup history on hospital visits.

Objective : To assess the association between health checkup history and hospital visits after annual health checkups among patients with untreated diabetes.

Methods : This retrospective cohort study included 8187 patients diagnosed as untreated diabetes with hemoglobin A1c level of $\geq 7.0\%$ at annual health checkups in Osaka Prefecture, Japan between fiscal year 2018 and 2021 (April 2018 and March 2022). Exposure was health checkup history in the previous fiscal year of the annual health checkups. Outcome was hospital visits with use of anti-diabetic drugs and/or measurements of blood glucose, hemoglobin A1c, and/or glycoalbumin within one year after the annual health checkups. The association between health checkup history and hospital visits was assessed using the Cox proportional hazards models adjusted for clinically relevant factors.

Results : Of 8187 patients aged 65 ± 3 years, including 6535 men (79.9%), 2334 (28.5%) patients had health checkup history in the previous year. During the 1-year observational period, 5755 (70.3%) patients had hospital visits, including 1600 (68.6%) and 4155 (71.0%) patients with and without health checkup history, respectively A multivariable-adjusted model showed that patients with health checkup history were less likely to have hospital visits than those without health checkup history (adjusted hazard ratio 0.82 [95% confidence interval 0.77–0.87]).

Conclusion : Health checkup history in the previous year of annual health checkups was a negative predictor of hospital visits after annual health checkups in patients with untreated diabetes.

The Association Between Snoring and Metabolic-Dysfunction Associated Steatotic Liver Disease

Baruck Tegegn ENDALE (1)
Midori TAKADA (1), Song Zean (1), Shalini Enon Perera PATHTHAMESTHRIGE (1), Nishio NANAMI (1)
Hiroshi YATSUYA (1)

1 : Nagoya University Graduate School of Medicine, Department of Public Health and Health Systems

Background : Metabolic dysfunction-associated steatotic liver disease (MASLD) is now a leading cause of end-stage liver disease worldwide. Snoring is a breathing-related noise during sleep, usually caused by partial obstruction of the upper airway. It can result from various causes but often manifests with sleep apnea. While snoring has been linked to various cardiometabolic disorders, its prospective association with MASLD has not yet been examined.

Objective : To investigate the longitudinal association between self-reported snoring and MASLD incidence among middle-aged Japanese workers.

Methods : Data were analysed from 1,849 public servants (aged 29–63 years, 66.7 % male) in the Aichi Workers' Cohort Study who participated in both 2018 (baseline) and 2022 surveys and were free of MASLD at baseline. Snoring frequency was categorized as never, sometimes, almost every day, and unknown. Incident MASLD was diagnosed annually through 2022 based on hepatic steatosis (Zhejiang University index) and at least one of the following cardiometabolic factors: abdominal obesity (waist circumference ≥90 cm for men, ≥80 cm for women), high triglycerides (≥150 mg/dl), low HDL cholesterol (<40 mg/dl for men, <50 for women), high blood pressure (≥130/85 mmHg), or high blood glucose (≥100 mg/dl). Odds ratios (ORs) and 95 % confidence intervals (CIs) for MASLD were estimated by snoring frequency (reference: never), adjusting for sociodemographic and lifestyle factors.

Result : Over four years, 143 participants (7.7 %) developed MASLD, with cummulative incidence rates of 3.9 % in never, 9.8 % in sometimes, 10.2 % in almost every day, and 6.5 % in unknown snoring groups. Sometimes and almost every day snoring were significantly associated with higher odds of MASLD (OR: 2.49, 95 % CI 1.40–4.41; OR: 2.36, 95 % CI 1.22–4.57).

Conclusion : Over a four years follow-up, self-reported snoring was independently associated with increased MASLD risk in middle-aged Japanese workers.

Association of perceived financial hardship with health service satisfaction in parents of toddlers

Yasue Ogata (1)

Yoshie Yokoyama (1)

1 : Osaka Metropolitan University Graduate School of Nursing

Background/Objective : The effects of financial hardship on children's physical and mental health and lifestyle habits have been studied, but no approaches for supporting families facing financial hardship have been established. This study aimed to clarify the relationship of perceived financial hardship with health service satisfaction in parents of toddlers, as part of exploring the needs of families facing financial hardship.

Methods : An anonymous self-administered questionnaire was mailed to 1341 households with toddlers aged 18-24 months in City A, Japan. Of 655 responses, 651 with complete data on family financial status were analyzed. Perceived financial hardship (0 = strained; 10 = comfortable) was used to classify families as financially strained (<5) or comfortable (≥5). We analyzed the relationship of perceived financial hardship with health service satisfaction. Multiple regression was performed for significant items.

Results : Of respondents, 27.6% were financially strained. These families were less satisfied with postnatal home visits ($p = 0.043$) and the 7-month infant consultation ($p = 0.039$) than those who were financially comfortable. No associations were found for the 18-month check-ups or desire to consult with a public health nurse (PHN). Multiple regression analysis showed that perceived financial hardship and ongoing support from PHNs were associated with satisfaction with postnatal home visits and the 7-month infant consultation.

Discussion/Conclusion : Families facing financial hardship may be less satisfied with health services. Future studies should further examine the needs of families facing financial hardship and the problems for which they receive support from PHNs.